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Bill Greehey  
School of Business

# ACCOUNTING

## Academic Year

2011-2012

## School

Bill Greehey School of Business [School Web site](#)

## School Dean

Tanuja Singh, D.B.A. [tsingh@stmarytx.edu](mailto:tsingh@stmarytx.edu)

## Department

Accounting

## Department Chair

Thomas F. Madison, Ph.D. [tmadison@stmarytx.edu](mailto:tmadison@stmarytx.edu)

## Description of Program/Major

Accounting is the language of business. It involves the recognition, measurement, recording, reporting and analysis of economic events that affect decision-making processes. It is the way that companies keep score of how successful they are, whether this is measured by profit or growth. Majoring in accounting at St. Mary's University allows you to be a decision maker in the business world. Individuals who enjoy using analytical skills, making decisions, and explaining outcomes to others should consider the accounting major. Additionally, students who enjoy working with people, are challenged by continuous learning requirements, and have a strong commitment to career advancement may choose to pursue a professional accounting career path. Accounting majors interview for business, finance or management positions. Other employment possibilities include external auditing, corporate tax and accounting. Specialty areas include environmental accounting, assurance services, financial planning and forensic accounting.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3

# ACCOUNTING

SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### Bill Greehey School of Business School Specific Core (21 Hours)

Social Sciences	EC 2301, EC 2302	6
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Literature	EN 23XX	3
Mathematics	MT 1305 Finite Math	3
Theology	Advanced Theology 33XX	3
Speech	MN 3320 Business Communications	3

### Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

AC 2310	Introduction to Accounting I	3
AC 2320	Introduction to Accounting II	3
AC 3331*	Accounting Information Systems	3
BA 1310	Fundamentals of Business Enterprise	3
BA 3351*	Legal Environment of Business	3
BA 4334*	Business Ethics	3
BA 4380*	Business Policy and Strategy	3
FN 3310*	Corporate Finance	3
IB 3321*	US Business in Interdependent World	3
MT 1306	Calculus for Business	3
MK 3310*	Principles of Marketing	3
MN 3330*	Organizational Behavior	3
QM 3320*	Business Statistics	3
QM 4330*	Operations Management	3

\*Junior Standing

## Four Year Degree Plan

# ACCOUNTING

St. Mary's University

BBA in Accounting (AC) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
	Fall	Hr		Spring	Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 1313 Foundations of Reflection: Others	3
—	EN 13XX Rhetoric & Composition <sup>1</sup>	3	—	SMC 1314 Foundations of Reflection: God	3
—	MT 1305 Finite Math	3	—	MT 1306 Calculus for Business	3
—	BA 1310 Fundamentals of Business Enterprise	3	—	EC 2303 Intro Microeconomic Theory	3
—	ND 0101 Personal & Academic Development	0			
	Total	15		Total	15
Second Year Courses					
—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	—	SMC 2301 Foundations of Practice: Ethics Literature <sup>2</sup>	3
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	TH 33xx Advanced Theology <sup>3</sup>	3
—	SMC 2304 Foundation of Practice: Literature	3	—	AC 2320 Intro to Accounting II	3
—	AC 2310 Intro to Accounting I	3		MN 3320 Business Communications	3
—	EC 2301 Intro Macroeconomic Theory	3			
	Total	15		Total	15
Third Year Courses					
—	AC 3310 Intermediate Accounting I	3	—	AC 3320 Intermediate Accounting II	3
—	AC 4350 Personal Tax	3	—	AC 3331 Accounting Information Systems	3
—	FN 3310 Corporate Finance	3	—	AC 3341 Introductory Cost Accounting	3
—	MK 3310 Principles of Marketing	3	—	IB 3321 US Business in Interdependent World	3
—	QM 3320 Business Statistics	3	—	MN 3330 Organizational Behavior	3
	Total	15		Total	15
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	AC 3350 Business Law	3
—	AC 4360 Business Tax	3	—	AC 4330 Auditing	3
—	BA 3351 Legal Environment of Business	3	—	BA 4334 Business Ethics	3
—	AC Elective	3	—	BA 4380 Business Strategy	3
—	AC Elective	3	—	AC Elective	3
	Total	15		Total	15

Total Hours 120

<sup>1</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>2</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>3</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).  
All Business courses must be completed with a "C" or higher.**

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

# ACCOUNTING

St. Mary's University  
BBA in Accounting (AC) Plan – 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## Bill Greehey School of Business School Specific Core (21 Hours)

__ Social Sciences – EC 2301, EC 2302	6
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Literature – EN 23XX	3
__ Mathematics – MT 1305 Finite Math	3
__ Theology – Advanced Theology 33XX	3
__ Speech – MN 3320 Business Communications	3

## Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

__ AC 2310 – Introduction to Accounting I	3
__ AC 2320 – Introduction to Accounting II	3
__ AC 3331* – Accounting Information Systems	3
__ BA 1310 – Fundamentals of Business Enterprise	3
__ BA 3351* – Legal Environment of Business	3
__ BA 4334* – Business Ethics	3
__ BA 4380* – Business Policy and Strategy	3
__ FN 3310* – Corporate Finance	3
__ IB 3321* – US Business in Interdependent World	3
__ MT 1306 – Calculus for Business	3
__ MK 3310* – Principles of Marketing	3
__ MN 3330* – Organizational Behavior	3
__ QM 3320* – Business Statistics	3
__ QM 4330* – Operations Management	3

\*Junior Standing

## Accounting Major Courses (27 hours)

__ AC 3310 – Intermediate Accounting I	3
__ AC 3320 – Intermediate Accounting II	3
__ AC 3341 – Introductory Cost Accounting	3
__ AC 3350 – Business Law	3
__ AC 4330 – Auditing	3
__ AC 4350 – Personal Tax	3
__ AC 4360 – Business Tax	3
__ AC Elective	3
__ AC Elective	3

## Proficiency in Information Technology and Information Literacy

\_\_ Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

**All Business courses must be completed with a "C" or better.**



# ACCOUNTING

## Department Courses and Descriptions

### **Introduction to Accounting I (3)**

AC 2310

This course introduces the basics of the financial accounting process to provide the student with an informed appreciation of the concepts principles, and practices which produce company financial statements. (Fall; Spring) Prerequisite: MT 1305 or MT 1306 with a grade of at least "C".

### **Introduction to Accounting II (3)**

AC 2320

This course is designed to improve basic understanding of corporate reporting, and the use of financial and other information for managerial decisions about planning, product and service pricing, and business expansion. (Fall; Spring) Prerequisite: AC 2310 with a grade of at least "C".

### **Intermediate Accounting I (3)**

AC 3310

Intermediate Accounting I helps students understand, prepare, and use financial information. It promotes technical competency in the application of generally accepted accounting principles. (Fall; Spring) Prerequisite: AC 2310 and 2320 with a combined GPA of at least 2.75 in these two courses.

### **Intermediate Accounting II (3)**

AC 3320

Intermediate Accounting II continues the development of technical accounting skills which enable the student to thoroughly comprehend, prepare, and analyze financial statements. (Fall; Spring) Prerequisite: AC 3310 with a minimum grade of "C".

### **Accounting Information Systems (3)**

AC 3331

An in-depth study of the design and operation of accounting information systems, in a computerized environment. Prerequisite: AC 2320 with a minimum grade of "C".

### **Intro Cost Accounting (3)**

AC 3341

Explores cost accounting as an information system that provides cost information for inventory valuation and income determination, for planning and controlling operations, and for facilitating decision making and long-range planning. Prerequisite: AC 2320 with a minimum grade of "C".

### **Business Law (3)**

AC 3350

Study of the policy, rationale and legal concepts of contracts, sales, product liability, commercial paper, and securities transactions with emphasis on the Uniform Commercial Code. Prerequisite: AC 2320 and BA 3351 with a minimum grade of "C".

### **Special Studies in Accounting (1)**

AC 4100

A study of selected topics in accounting. Specific subject indicated each time the course is offered. May

# ACCOUNTING

be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

## **Special Studies in Accounting (2)**

AC 4200

A study of selected topics in accounting. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

## **Special Studies in Accounting (3)**

AC 4300

A study of selected topics in accounting. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

## **Account for Govern& No-Profits (3)**

AC 4306

A study of financial accounting concepts and practices for not-for-profit entities such as governmental units, hospitals, educational institutions and voluntary health and welfare organizations. Prerequisite: AC 3310 with a minimum grade of "C".

## **Auditing (3)**

AC 4330

Emphasizes the concepts associated with performing external audits and other attestation engagements in accordance with generally accepted auditing standards or other appropriate professional attestation standards. (Fall; Spring) Prerequisites AC 3320, AC 3331 and BA 3351 all with a minimum grade of "C".

## **Corporate Accounting & Governance (3)**

AC 4344

The course covers the basics of corporate governance, including the structure of a corporation, board and audit committee requirements, relevant financial statement reporting requirements, the effect of Sarbanes-Oxley Act on governance, the role of the board in takeover situations, management compensation issues, corporate governance in other countries, the legal framework of the SEC, and the preparation of SEC required forms for publicly traded companies. Prerequisites: AC 3320 with a minimum grade of "C". (Spring only).

## **Personal Income Tax (3)**

AC 4350

An examination of the source and application of U. S. tax authority as it relates to individual taxpayers. Various exclusions, deductions, credits, and rates are analyzed and illustrated with a view towards tax determination. (Fall; Spring) Prerequisite: AC 2320 with a minimum grade of "C".

## **Research in Federal Taxation (3)**

AC 4355

A study of the tax materials available and their use in tax research, including the Internal Revenue Code, tax services, case reporters, and treasury publications. Emphasizes understanding and solving tax issues of current importance and the communication of such information. Prerequisites: AC4350 or AC4360, or equivalent.

# ACCOUNTING

## **Business Income Tax (3)**

AC 4360

An examination of the source and application of U.S. tax authority as it relates to corporations (including S Corporations) and their shareholders, partnerships and their partners, and estates and trusts and their beneficiaries. Prerequisite: AC 2320 with a minimum grade of "C".

## **International Account& Taxatio (3)**

AC 4365

An examination of accounting principles and practices among countries and an overview of taxation of US businesses operating internationally. Emphasis is placed on management decisions associated with accounting and taxation of companies operating in the international environment. Prerequisite: AC 2320 with a minimum grade of "C".

## **Internship in Accounting (3)**

AC 4375

The opportunity to gain knowledge through experiential activities in professional life. Prerequisites: A minimum grade point average of 2.8, and completion of, with a grade of "C" or better, AC 3310 prior to enrolling in any accounting internship\*. Pass/No Pass credit is given. (Fall; Spring; Summer) \*Requires approval of departmental chair and associate dean.

## **Accounting for Government & Not-for-Profits (3)**

AC 5306

A study of financial accounting concepts and practices for state and local governments and not-for-profit entities such as hospitals, educational institutions, and voluntary health and welfare organizations. Activities include study of theory, research on practices, as well as in depth analysis of financial statements of actual organizations, including the City of San Antonio. This course also emphasizes related current issues and the developing nature of accounting for these entities. Prerequisite: AC 3310 with a minimum grade of "C". (Fall only)

## **Corporate Accounting & Governance (3)**

AC 5344

This course covers the basics of corporate governance, including the structure of a corporation, board and audit committee requirements, relevant financial statement reporting requirements, the effect of the Sarbanes-Oxley Act on governance, the role of the board in takeover situations, management compensation issues, corporate governance in other countries, the legal framework of the SEC, and the preparation of SEC required forms for publicly traded companies. Students admitted to the MBA program can enroll in this course for graduate credit if they did not previously receive credit for AC 4344 (or the equivalent) as an undergraduate.

## **Accounting Internship (3)**

AC 5375

The accounting internship provides students with an opportunity to gain knowledge and experience through hands-on experiential activities. It represents cooperation among the University and business, public and government institutions in monitoring and gaining experience that supplements the learning process. Prerequisites: Completion of all undergraduate accounting prerequisites (AC 2310, AC 2320, AC 3310, AC 3320, AC 3331 or QM 3330, AC 3341, AC 3350, AC 4330, AC 4350, AC 4360, BA 4333),

# ACCOUNTING

minimum GPA in graduate-level courses of 3.0, consent of the Chairperson of the Accounting Department and the MBA Program Director.

# CORPORATE FINANCIAL MANAGEMENT

## Academic Year

2011-2012

## School

Bill Greehey School of Business [School Web site](#)

## School Dean

Tanuja Singh, D.B.A. [tsingh@stmarytx.edu](mailto:tsingh@stmarytx.edu)

## Department

Finance and Quantitative Management

## Department Chair

David W. Sommer, Ph.D. [dsommer@stmarytx.edu](mailto:dsommer@stmarytx.edu)

## Description of Program/Major

The corporate financial management major at St. Mary's University enhances the student's ability to analyze financial information, recommend sound financing and investment options, and manage the fiscal resources of successful organizations. Corporate financial management requires quantitative abilities, excellent communication skills, and the ability to work well with groups.

Individuals who enjoy using analytical skills, making decisions, and explaining decision outcomes to others should consider the corporate financial management major. Additionally, students who enjoy working with people, are challenged by continuous learning requirements, and have a strong commitment to career advancement will enjoy a professional corporate financial management career path.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3

# CORPORATE FINANCIAL MANAGEMENT

SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### Bill Greehey School of Business School Specific Core (21 Hours)

Social Sciences	EC 2301, EC 2302	6
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Literature	EN 23XX	3
Mathematics	MT 1305 Finite Math	3
Theology	Advanced Theology 33XX	3
Speech	MN 3320 Business Communications	3

### Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

AC 2310	Introduction to Accounting I	3
AC 2320	Introduction to Accounting II	3
AC 3331*	Accounting Information Systems	3
BA 1310	Fundamentals of Business Enterprise	3
BA 3351*	Legal Environment of Business	3
BA 4334*	Business Ethics	3
BA 4380*	Business Policy and Strategy	3
FN 3310*	Corporate Finance	3
IB 3321*	US Business in Interdependent World	3
MT 1306	Calculus for Business	3
MK 3310*	Principles of Marketing	3
MN 3330*	Organizational Behavior	3
QM 3320*	Business Statistics	3
QM 4330*	Operations Management	3

\*Junior Standing

## Four Year Degree Plan

# CORPORATE FINANCIAL MANAGEMENT

St. Mary's University

BBA in Corporate Financial Management (CF) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.

"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses						
Fall			Hr	Spring		
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3	
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 1313 Foundations of Reflection: Others	3	
—	EN 13XX Rhetoric & Composition <sup>1</sup>	3	—	SMC 1314 Foundations of Reflection: God	3	
—	MT 1305 Finite Math	3	—	MT 1306 Calculus for Business	3	
—	BA 1310 Fundamentals of Business Enterprise	3	—	EC 2303 Intro Microeconomic Theory	3	
—	ND 0101 Personal & Academic Development	0				
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>	
Second Year Courses						
—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	—	SMC 2301 Foundations of Practice: Ethics Literature <sup>2</sup>	3	
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	TH 33xx Advanced Theology <sup>3</sup>	3	
—	SMC 2304 Foundation of Practice: Literature	3	—	AC 2320 Intro to Accounting II	3	
—	EC 2301 Intro Macroeconomic Theory	3		MN 3320 Business Communications	3	
—	AC 2310 Intro to Accounting I	3				
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>	
Third Year Courses						
—	FN 3310 Corporate Finance	3	—	BA 3351 Legal Environment of Business	3	
—	MK 3310 Principles of Marketing	3	—	BA 4334 Business Ethics	3	
—	MN 3330 Organizational Behavior	3	—	IB 3321 US Business in Interdependent World	3	
—	QM 3320 Business Statistics	3	—	Business Elective	3	
—	QM 3330 Management Information Systems	3	—	Finance Elective	3	
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>	
Fourth Year Courses						
—	QM 4330 Operations Management	3	—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	
—	FN 4310 Intermediate Corporate Finance	3	—	BA 4380 Business Policy and Strategy	3	
—	FN 4320 Investments I	3	—	FN 3330 Financial Institutions or	3	
—	Business Elective	3	—	FN 4330 Student Managed Portfolio		
—	Financial Elective	3	—	FN 4350 International Finance	3	
			—	FN 4390 Seminar in Finance	3	
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>	

Total Hours 120

<sup>1</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>2</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>3</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Foreign Languages – 6 hours - Can be met by the following:

- 6 hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training;
- 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge;
- 12 hours of CLEP credit;
- 12 hours of AP credit;
- 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

**All Business courses must be completed with a "C" or higher.**

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

# CORPORATE FINANCIAL MANAGEMENT

St. Mary's University  
BBA in Corporate Financial Management (CF) Degree Plan – 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## Bill Greehey School of Business School Specific Core (21 Hours)

__ Social Sciences – EC 2301, EC 2302	6
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Literature – EN 23XX	3
__ Mathematics – MT 1305 Finite Math	3
__ Theology – Advanced Theology 33XX	3
__ Speech – MN 3320 Business Communications	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit; Or, 12 hours of AP credit; Or, 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).	

## Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

__ AC 2310 – Introduction to Accounting I	3
__ AC 2320 – Introduction to Accounting II	3
__ BA 1310 – Fundamentals of Business Enterprise	3
__ BA 3351* – Legal Environment of Business	3
__ BA 4334* – Business Ethics	3
__ BA 4380* – Business Policy and Strategy	3
__ FN 3310* – Corporate Finance	3
__ IB 3321* – US Business in Interdependent World	3
__ MT 1306 – Calculus for Business	3
__ MK 3310* – Principles of Marketing	3
__ MN 3330* – Organizational Behavior	3
__ QM 3320* – Business Statistics	3
__ QM 3330* – Management Information Systems	3
__ QM 4330* – Operations Management	3

\*Junior Standing

## Corporate Financial Management Major Courses (27 hours)

__ FN 3330 – Financial Institutions or FN 4330 Student Managed Portfolio	3
__ FN 4310 – Intermediate Corporate Finance	3
__ FN 4320 – Investments I	3
__ FN 4350 – International Finance	3
__ FN 4390 – Seminar in Finance	3
__ Business Elective	3
__ Business Elective	3
__ Finance Elective	3
__ Finance Elective	3

## Proficiency in Information Technology and Information Literacy

\_\_ Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

**All Business courses must be completed with a "C" or better.**



# CORPORATE FINANCIAL MANAGEMENT

## Department Courses and Descriptions

### **Corporate Finance (3)**

FN 3310

Introduction to analytical financial management. Emphasis placed on the sources, uses, and cost of short, intermediate, and long term funds; capital budgeting; leverage; cost of capital; management of working capital; and financial statement analysis. (Fall, Spring) Prerequisites: AC 2320, EC 2301, EC 2303, MT 1305, and MT 1306.

### **Financial Institutions (3)**

FN 3330

Review of operations of financial intermediaries including banks, savings institutions, and insurance companies. Principles of money and credit; review of central banking and monetary policies, both national and international. (Fall;Spring) Prerequisites: AC 2320, EC 2301 and EC 2303.

### **Risk Management (3)**

FN 3340

Analysis of risk management concepts and techniques, with emphasis on property-liability risks facing the business firm. Fundamentals of insurance economics, law, and regulation. Examination of major business insurance coverages including property, liability, business interruption, crime, and transportation. (Fall; Spring).

### **Special Studies in Finance (1)**

FN 4100

A study of selected topics in Finance. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

### **Special Studies in Finance (2)**

FN 4200

A study of selected topics in Finance. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

### **Special Studies in Finance (3)**

FN 4300

A study of selected topics in Finance. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

### **Intermediate Corporate Finance (3)**

FN 4310

This course will build on Corporate Finance (FN 3310) and will introduce the student to basic elements of finance theory. In particular, emphasis will be placed on dividend policy theories, corporate structure theories, and real options. While the emphasis is on the theoretical aspects of corporate finance, the students will also be exposed to applications of theory in a practical corporate finance environment. Prerequisite: FN 3310

### **Investments I (3)**

# CORPORATE FINANCIAL MANAGEMENT

FN 4320

The quantitative and qualitative analysis of stock, bonds, and derivative securities such as futures and options. Quantitative analyses including valuation models and strategy design. Review of securities markets: functions and operations. (Fall & Spring) Prerequisite: FN 3310.

## **(Beginning and Advanced) Student Managed Portfolio (3)**

FN 4330

Application of portfolio management theories through the active participation in an asset management team assigned the responsibility of attaining a reasonable rate of return commensurate with acceptable risk levels. Investment decisions are further guided by the investment policy guidelines of the U.S. Conference of Catholic Bishops. The U.S. Catholic bishops have high lighted seven key themes that embody Catholic social thought and social teaching. Stewardship of investment resources is covered by objectives that are framed by these themes. (Spring & Fall) Prerequisites: FN 4320, and permission of the instructor.

## **International Finance (3)**

FN 4350

The course addresses the historical, institutional, and empirical aspects of the foreign exchange market, the eurocurrency market and the international bond market. The managerial implementation of international financial instruments in global oriented business organizations is stressed. (Fall & Spring) Prerequisites: FN 3310 and IB 3321.

## **Financial Counseling (3)**

FN 4360

Analysis and application of the financial planning process for executives and small business owners. Emphasis on life and health insurance, annuities, social security, and real estate investments; developing client data; fundamentals of estate planning and taxation relating to insurance, investments and estates. (Fall).

## **Internship in Finance (3)**

FN 4375

The opportunity to gain knowledge through experiential activities in professional life. Prerequisites: A minimum overall GPA of 2.8, successful completion of FN 3310, completion or concurrent enrollment in a finance major course. Pass/No Pass credit is given. (Fall; Spring; Summer)

## **Employee Benefits Management (3)**

FN 4380

Analysis of objectives, techniques, and markets for employee benefit plans. Examination of group life and health insurance coverages, social security, and retirement planning, including pension and profit sharing plan management. (Fall, Spring) Concurrent enrollment or successful completion of BA 3325 or HR 3370 or MN 3330

## **Seminar in Finance (3)**

FN 4390

Advanced analyses of recent developments in financial and/or investment theory, and in quantitative and qualitative techniques for risk management and financial planning decisions. A seminar approach is used

# CORPORATE FINANCIAL MANAGEMENT

to provide a high degree of student-instructor interaction. (Spring) Prerequisite: Senior standing. Finance majors only.

# ENTREPRENEURIAL STUDIES

## Academic Year

2011-2012

## School

Bill Greehey School of Business [School Web site](#)

## School Dean

Tanuja Singh, D.B.A. [tsingh@stmarytx.edu](mailto:tsingh@stmarytx.edu)

## Department

Algur H. Meadows Center for Entrepreneurial Studies

## Department Chair

Brooke R. Envick, Ph.D. [benvick@stmarytx.edu](mailto:benvick@stmarytx.edu)

## Description of Program/Major

Small business is the mighty engine of the U.S. economy, providing a substantial number of employment opportunities and unlimited potential for entrepreneurs. Entrepreneurship is a people-oriented career that requires excellent communication skills and the ability to work well with others. The entrepreneurial studies program at St. Mary's is designed to prepare an individual seeking career fulfillment through the establishment of his or her own business rather than being a part of a corporate or institutional staff. Students in the entrepreneurial studies program gain the knowledge and skills necessary to launch their own venture, analyze the market, and solve real-life problems in business. Students gain valuable organizational tools in order to focus on good project management, and to identify and capture new markets and start-up companies.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3

# ENTREPRENEURIAL STUDIES

SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### Bill Greehey School of Business School Specific Core (21 Hours)

Social Sciences	EC 2301, EC 2302	6
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Literature	EN 23XX	3
Mathematics	MT 1305 Finite Math	3
Theology	Advanced Theology 33XX	3
Speech	MN 3320 Business Communications	3

### Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

AC 2310	Introduction to Accounting I	3
AC 2320	Introduction to Accounting II	3
AC 3331*	Accounting Information Systems	3
BA 1310	Fundamentals of Business Enterprise	3
BA 3351*	Legal Environment of Business	3
BA 4334*	Business Ethics	3
BA 4380*	Business Policy and Strategy	3
FN 3310*	Corporate Finance	3
IB 3321*	US Business in Interdependent World	3
MT 1306	Calculus for Business	3
MK 3310*	Principles of Marketing	3
MN 3330*	Organizational Behavior	3
QM 3320*	Business Statistics	3
QM 4330*	Operations Management	3

\*Junior Standing

## Four Year Degree Plan

# ENTREPRENEURIAL STUDIES

St. Mary's University

BBA in Entrepreneurial Studies (EP) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.

"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses						
Fall			Hr	Spring		
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature SMC	3	
—	SMC 1311 Foundations of Reflection: Self	3	—	1313 Foundations of Reflection: Others	3	
—	EN 13XX Rhetoric & Composition <sup>1</sup>	3	—	SMC 1314 Foundations of Reflection: God	3	
—	MT 1305 Finite Math	3	—	MT 1306 Calculus for Business	3	
—	BA 1310 Fundamentals of Business Enterprise	3	—	EC 2303 Intro Microeconomic Theory	3	
—	ND 0101 Personal & Academic Development	0				
Total		15		Total	15	
Second Year Courses						
—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	—	SMC 2301 Foundations of Practice: Ethics Literature <sup>2</sup>	3	
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	TH 33xx Advanced Theology <sup>3</sup>	3	
—	SMC 2304 Foundation of Practice: Literature	3	—	AC 2320 Intro to Accounting II	3	
—	EC 2301 Intro Macroeconomic Theory	3	—	MN 3320 Business Communications	3	
—	AC 2310 Intro to Accounting I	3				
Total		15		Total	15	
Third Year Courses						
—	EP 3310 Free Enterprise System	3	—	BA 3351 Legal Environment of Business	3	
—	FN 3310 Corporate Finance	3	—	EP 41XX One-hour module	1	
—	MK 3310 Principles of Marketing	3	—	EP 41XX One-hour module	1	
—	MN 3330 Organizational Behavior	3	—	EP 41XX One-hour module	1	
—	QM 3320 Business Statistics	3	—	IB 3321 US Business in Interdependent World	3	
			—	QM 3330 Management Information Systems	3	
			—	Business Elective*	3	
Total		15		Total	15	
Fourth Year Courses						
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	BA 4380 Business Policy & Strategy	3	
—	BA 4334 Business Ethics	3	—	EP 4396 Small Bus Growth & Management	3	
—	EP 4391 Bus Plan Dev & New Venture Creation	3	—	EP 41XX One-hour module	1	
—	EP 4320 Management Consulting	3	—	EP 41XX One-hour module	1	
—	EP 41XX One-hour module	1	—	EP 41XX One-hour module	1	
—	EP 41XX One-hour module	1	—	QM 4330 Operations Management	3	
—	EP 41XX One-hour module	1	—	Business Elective*	3	
Total		15		Total	15	

Total Hours 120

<sup>1</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>2</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>3</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Foreign Languages – 6 hours - Can be met by the following:

- 6 hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training;
- 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge;
- 12 hours of CLEP credit;
- 12 hours of AP credit;
- 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

**All Business courses must be completed with a "C" or higher.**

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

# ENTREPRENEURIAL STUDIES

St. Mary's University  
BBA in Entrepreneurial Studies (EP) Degree Plan – 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## Bill Greehey School of Business School Specific Core (21 Hours)

__ Social Sciences – EC 2301, EC 2302	6
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Literature – EN 23XX	3
__ Mathematics – MT 1305 Finite Math	3
__ Theology – Advanced Theology 33XX	3
__ Speech – MN 3320 Business Communications	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit; Or, 12 hours of AP credit; Or, 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).	

## Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

__ AC 2310 – Introduction to Accounting I	3
__ AC 2320 – Introduction to Accounting II	3
__ BA 1310 – Fundamentals of Business Enterprise	3
__ BA 3351* – Legal Environment of Business	3
__ BA 4334* – Business Ethics	3
__ BA 4380* – Business Policy and Strategy	3
__ FN 3310* – Corporate Finance	3
__ IB 3321* – US Business in Interdependent World	3
__ MT 1306 – Calculus for Business	3
__ MK 3310* – Principles of Marketing	3
__ MN 3330* – Organizational Behavior	3
__ QM 3320* – Business Statistics	3
__ QM 3330* – Management Information Systems	3
__ QM 4330* – Operations Management	3

\*Junior Standing

## Entrepreneurial Studies Major Courses (27 hours)

__ EP 3310 – Free Enterprise System	3		
__ EP 4320 – Management Consulting	3		
__ EP 4391 – Business Plan Development & New Venture Creation	3		
__ EP 4396 – Small Business Growth Management	3		
__ EP 41XX – One hour Module	__ EP 41XX – One hour Module	__ EP 41XX – One hour Module	3
__ EP 41XX – One hour Module	__ EP 41XX – One hour Module	__ EP 41XX – One hour Module	3
__ EP 41XX – One hour Module	__ EP 41XX – One hour Module	__ EP 41XX – One hour Module	3
__ Business Elective*			3
__ Business Elective*			3

## Proficiency in Information Technology and Information Literacy

\_\_ Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

**All Business courses must be completed with a "C" or higher.**

# ENTREPRENEURIAL STUDIES

## Business Electives

\*One business elective must be 4000 level. Both business electives must be selected from the following:

Approved Electives (3000 Level)	Approved Electives (4000 Level)
AC 3350 Business Law FN 3340 Risk Management MK 3330 Consumer Behavior MK 3340 Promotion MK 3350 Retailing MK 3360 Selling and Sales Management MK 3380 Services Marketing MN 3370 Human Resources Management MN 3380 Managing Innovation and Change QM 3340 Managing Business Projects	AC 4360 Business Income Tax BA 4350 Exploring Entrepreneurship FN 4380 Employee Benefits Management IB 4358 International Management IB 4372 Global Market Research IB 4358 Global Operations Management IB 4351 International Finance IB 4355 Managing in Cross-Cultural Environments MK 4310 Advertising Management MK 4370 Market Research MN 4330 Negotiation and Conflict Resolution MN 4356 Compensation Management QM 4370 E-Business



# ENTREPRENEURIAL STUDIES

## Department Courses and Descriptions

### **The Free Enterprise System (1)**

EP 3110

Develops a philosophical perspective of the objectives, functions, and challenges of the American free enterprise system. Students learn past, present, and probable future of individual freedom and as historical perspective of economic activity within an ethical frame work. Required of all EP majors.

### **Innovation& Creat Problem Solv (1)**

EP 4100

The entire development process from idea, to product development and patent, to identifying potential markets and commercialization is explored. Business opportunities through innovation and invention are identified. Unique ways to solve problems are examined. Creativity and aspects of systems thinking are used to put a new spin on existing products, markets, and problem solutions.

### **Financing the Entrepre Venture (1)**

EP 4110

The following topics are investigated: sources of venture capital; differences between debt and equity financing; managing and differentiating between personal and business finances; understanding financial responsibilities of business ownership. Prerequisite: FN 3310

### **Internt'l Entrepreneurship (1)**

EP 4120

Topics covered include: global expansion of entrepreneurial ventures; methods of small business globalization. Opportunities and risks of global expansion; barriers to entry; impact of globalization on all business functions. Prerequisite: IB 3321W

### **Franchising (1)**

EP 4130

Topics covered include: analyzing the franchising option; advantages and disadvantages of franchising; the process of franchising; sources of information.

### **Family Owned/Closely Held Busi (1)**

EP 4140

Topics covered include: unique opportunities and challenges of family owned/closely held businesses. role of founder and other members; succession planning; work/personal conflict issues.

### **Law and Ethics for Entrepreneu (1)**

EP 4150

Topics covered include: Unique legal issues of establishing a new venture such as licensing and zoning; legal forms of business; types of corporations; business partner relationships and contracts; protecting intellectual property rights; ethical dilemmas faced by business owners.

### **Venture Manage of Tech&MIS (1)**

EP 4160

Topics covered include: Technology based start- ups; how to effectively use technology to manage and

# ENTREPRENEURIAL STUDIES

expand the reach of a business; using the Internet and computer software to obtain information; managing information with technology.

## **Networking & Comm for Entrepre (1)**

EP 4170

Topics covered include: unique communication skills needed by entrepreneurs; how to establish a good network of suppliers, customers, investors, and other business owners; how to maintain a supportive network.

## **Managerial Account for Entrepr (1)**

EP 4180

Topics covered include: skills in managing inventory, operations, plant and equipment, assets and liabilities; utilizing information for decision-making, controlling, and planning. Prerequisite: AC 2310, AC 2320

## **Human Resources Issues for Ent (1)**

EP 4190

Topics covered include: human resources planning, selection, and training; compensation management, health and safety, and relevant employment laws. Prerequisite: BA 3325W or MN 3330

## **Marketing for Entrepreneurs (1)**

EP 4195

Topics include: Skills in conducting primary marketing research, surveys, sampling, and statistical analysis; advertising and promotion; product and sales control research. Prerequisite: MK 3310

## **Special Topics in Entrepre Stu (1)**

EP 4199

A study of selected topics in entrepreneurship. Specific subject is indicated each time the course is offered.

## **Management Consulting (3)**

EP 4320

Student teams act as consultants to businesses to analyze the various functions of business as they pertain to endeavors. Managerial awareness and analytical skills in business problem solving are developed. (Fall; Spring) Prerequisites: Senior standing and consent of instructor. Open only to students pursuing a B.B.A. degree.

## **Internship in Entrepreneurial (3)**

EP 4375

The opportunity to gain knowledge through experiential activities in entrepreneurial businesses. Cooperation with entrepreneurs in monitoring and gaining work experience aimed at supplementing the learning process. Prerequisite: minimum over all GPA of 2.8. Pass/No Pass credit is given. (Fall; Spring; Summer)

## **Business Plan Develop&New V Cr (3)**

EP 4391

# ENTREPRENEURIAL STUDIES

Students learn how to initiate a new business venture by developing business plans, analyzing case studies, lectures, and guest speakers. Each student will develop a unique and comprehensive business plan. Prerequisites: AC 2310, AC 2320, EC 2301, EC 2303, FN 3310, BA 3325W, MN 3330, MK 3310

## **Social Entrepreneurship (3)**

EP 4392

This course applies knowledge and skills developed in EP4391: Business Plan Development & New Venture Creation, for the purpose of developing new products or services that contribute to the solution of a social problem. Determining economic and social value is an entrepreneurial exercise. In this course student teams will write a functional, comprehensive plan that addresses a predetermined social issue. The plan will demonstrate potential value for all critical stakeholders. Prerequisite: EP 4391.

## **Small Business Growth&Manage (3)**

EP 4396

Students learn how to grow and manage businesses from the day they open until they are relatively mature. The business plan developed in EP 4391 can be applied in this course to discuss issues such as succession management to illustrate the principles of growth, adaptation, and change. Lectures, case studies, and speakers will be utilized. Prerequisites: AC 2310, AC 2320, EC 2301, EC 2303, FN 3310, BA 3325W, MN 3330, MK 3310

## **Building World Class Ideas&Org (3)**

EP 4397

Students learn how to apply their natural strengths and interests toward creating new ventures. Sources of innovation are discussed as well as forms of capital. Each student develops a product/service idea and then learns how to build an organization around it. There is an emphasis on social entrepreneurship, which carries over into other E-Scholar classes and activities of the program. Prerequisite: Admittance into the E-Scholar Program.

## **Global Entrepreneurship (3)**

EP 4398

This course is designed to prepare students in the E-Scholar Program at St. Mary's University to acquire the necessary tools to conduct international business successfully. Specifically, this course focuses on the skills and knowledge useful for developing a new global business. Using the perspectives of a startup entrepreneur we will examine the key success factors in creating a new business in one or more non-US countries, as well as understand the differences and similarities between global entrepreneurs. The emphasis of the course is on analyzing how markets and competition (the economic dimension), power (the political dimension), and culture (the social dimension) influence start up decisions around the world. Prerequisite: Admission into the E-Scholars Program, EP 4397

# FINANCIAL SERVICES AND RISK MANAGEMENT

## Academic Year

2011-2012

## School

Bill Greehey School of Business [School Web site](#)

## School Dean

Tanuja Singh, D.B.A. [tsingh@stmarytx.edu](mailto:tsingh@stmarytx.edu)

## Department

Finance and Quantitative Management

## Department Chair

Monica J. Parzinger, Ph.D. [mparzinger@stmarytx.edu](mailto:mparzinger@stmarytx.edu)

## Description of Program/Major

Financial services involve comprehensive planning for the accumulation, conservation and transfer of personal wealth, and the provision of insurance, investment and banking services. Risk management is the identification, evaluation and reduction of risk of loss to an organization's physical and financial resources. Financial services/risk management is a people-oriented career that requires excellent communication skills and the ability to work well with individuals and in groups.

Individuals who enjoy using analytical skills, making decisions and explaining decision outcomes to others should consider this major. Additionally, students who enjoy working with people, are challenged by continuous learning requirements, and have a strong commitment to career advancement will benefit from a financial services/risk management career path at St. Mary's University.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3

# FINANCIAL SERVICES AND RISK MANAGEMENT

SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### Bill Greehey School of Business School Specific Core (21 Hours)

Social Sciences	EC 2301, EC 2302	6
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Literature	EN 23XX	3
Mathematics	MT 1305 Finite Math	3
Theology	Advanced Theology 33XX	3
Speech	MN 3320 Business Communications	3

### Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

AC 2310	Introduction to Accounting I	3
AC 2320	Introduction to Accounting II	3
AC 3331*	Accounting Information Systems	3
BA 1310	Fundamentals of Business Enterprise	3
BA 3351*	Legal Environment of Business	3
BA 4334*	Business Ethics	3
BA 4380*	Business Policy and Strategy	3
FN 3310*	Corporate Finance	3
IB 3321*	US Business in Interdependent World	3
MT 1306	Calculus for Business	3
MK 3310*	Principles of Marketing	3
MN 3330*	Organizational Behavior	3
QM 3320*	Business Statistics	3
QM 4330*	Operations Management	3

\*Junior Standing

## Four Year Degree Plan

# FINANCIAL SERVICES AND RISK MANAGEMENT

St. Mary's University

BBA in Financial Services/Risk Management (FS) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.

"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
	Fall	Hr		Spring	Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	SMC 1311 Foundations of Reflection: Self	3	___	SMC 1313 Foundations of Reflection: Others	3
___	EN 13XX Rhetoric & Composition <sup>1</sup>	3	___	SMC 1314 Foundations of Reflection: God	3
___	MT 1305 Finite Math	3	___	MT 1306 Calculus for Business	3
___	BA 1310 Fundamentals of Business Enterprise	3	___	EC 2303 Intro Microeconomic Theory	3
___	ND 0101 Personal & Academic Development	0			
	Total	15		Total	15
Second Year Courses					
___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	___	SMC 2301 Foundations of Practice: Ethics Literature <sup>2</sup>	3
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	TH 33xx Advanced Theology <sup>3</sup>	3
___	SMC 2304 Foundation of Practice: Literature	3	___	AC 2320 Intro to Accounting II	3
___	EC 2301 Intro Macroeconomic Theory	3	___	MN 3320 Business Communications	3
___	AC 2310 Intro to Accounting I	3			
	Total	18		Total	15
Third Year Courses					
___	FN 3310 Corporate Finance	3	___	BA 3351 Legal Environment of Business	3
___	MK 3310 Principles of Marketing	3	___	BA 4334 Business Ethics	3
___	MN 3330 Organizational Behavior	3	___	FN 3340 Risk Management	3
___	QM 3320 Business Statistics	3	___	IB 4358 US Business in Interdependent World	3
___	QM 3330 Management Information Systems	3	___	Business Elective	3
	Total	15		Total	15
Fourth Year Courses					
___	QM 4330 Operations Management	3	___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
___	FN 4320 Investments I	3	___	BA 4380 Business Policy & Strategy	3
___	FN 4360 Financial Counseling	3	___	FN 4380 Employee Benefits Management	3
___	Business Elective	3	___	FN 4390 Seminar in Finance	3
___	Financial Elective	3	___	Financial Elective	3
	Total	15		Total	15

Total Hours 120

<sup>1</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>2</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>3</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Foreign Languages – 6 hours - Can be met by the following:

- 6 hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training;
- 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge;
- 12 hours of CLEP credit;
- 12 hours of AP credit;
- 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

All Business courses must be completed with a "C" or higher.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

# FINANCIAL SERVICES AND RISK MANAGEMENT

St. Mary's University  
BBA in Financial Services/Risk Management (FS) Degree Plan – 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## Bill Greehey School of Business School Specific Core (21 Hours)

__ Social Sciences – EC 2301, EC 2302	6
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Literature – EN 23XX	3
__ Mathematics –MT 1305 Finite Math	3
__ Theology – Advanced Theology 33XX	3
__ Speech – MN 3320 Business Communications	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit; Or, 12 hours of AP credit; Or, 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).	

## Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

__ AC 2310 – Introduction to Accounting I	3
__ AC 2320 – Introduction to Accounting II	3
__ BA 1310 – Fundamentals of Business Enterprise	3
__ BA 3351* – Legal Environment of Business	3
__ BA 4334* – Business Ethics	3
__ BA 4380* – Business Policy and Strategy	3
__ FN 3310* – Corporate Finance	3
__ IB 3321* – US Business in Interdependent World	3
__ MT 1306 – Calculus for Business	3
__ MK 3310* – Principles of Marketing	3
__ MN 3330* – Organizational Behavior	3
__ QM 3320* – Business Statistics	3
__ QM 3330* – Management Information Systems	3
__ QM 4330* – Operations Management	3

\*Junior Standing

## Financial Services/Risk Management Major Courses (27 hours)

__ FN 3340 – Risk Management	3
__ FN 4320 – Investments I	3
__ FN 4360 – Financial Counseling	3
__ FN 4380 – Employee Benefits Management	3
__ FN 4390 – Seminar in Finance	3
__ Business Elective	3
__ Business Elective	3
__ Finance Elective	3
__ Finance Elective	3

## Proficiency in Information Technology and Information Literacy

\_\_ Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).

All Business courses must be completed with a "C" or higher.

# FINANCIAL SERVICES AND RISK MANAGEMENT

## Department Courses and Descriptions

### **Corporate Finance (3)**

FN 3310

Introduction to analytical financial management. Emphasis placed on the sources, uses, and cost of short, intermediate, and long term funds; capital budgeting; leverage; cost of capital; management of working capital; and financial statement analysis. (Fall, Spring) Prerequisites: AC 2320, EC 2301, EC 2303, MT 1305, and MT 1306.

### **Financial Institutions (3)**

FN 3330

Review of operations of financial intermediaries including banks, savings institutions, and insurance companies. Principles of money and credit; review of central banking and monetary policies, both national and international. (Fall;Spring) Prerequisites: AC 2320, EC 2301 and EC 2303.

### **Risk Management (3)**

FN 3340

Analysis of risk management concepts and techniques, with emphasis on property-liability risks facing the business firm. Fundamentals of insurance economics, law, and regulation. Examination of major business insurance coverages including property, liability, business interruption, crime, and transportation. (Fall; Spring).

### **Special Studies in Finance (1)**

FN 4100

A study of selected topics in Finance. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

### **Special Studies in Finance (2)**

FN 4200

A study of selected topics in Finance. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

### **Special Studies in Finance (3)**

FN 4300

A study of selected topics in Finance. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

### **Intermediate Corporate Finance (3)**

FN 4310

This course will build on Corporate Finance (FN 3310) and will introduce the student to basic elements of finance theory. In particular, emphasis will be placed on dividend policy theories, corporate structure theories, and real options. While the emphasis is on the theoretical aspects of corporate finance, the students will also be exposed to applications of theory in a practical corporate finance environment. Prerequisite: FN 3310

### **Investments I (3)**



# FINANCIAL SERVICES AND RISK MANAGEMENT

FN 4320

The quantitative and qualitative analysis of stock, bonds, and derivative securities such as futures and options. Quantitative analyses including valuation models and strategy design. Review of securities markets: functions and operations. (Fall & Spring) Prerequisite: FN 3310.

## **(Beginning and Advanced) Student Managed Portfolio (3)**

FN 4330

Application of portfolio management theories through the active participation in an asset management team assigned the responsibility of attaining a reasonable rate of return commensurate with acceptable risk levels. Investment decisions are further guided by the investment policy guidelines of the U.S. Conference of Catholic Bishops. The U.S. Catholic bishops have highlighted seven key themes that embody Catholic social thought and social teaching. Stewardship of investment resources is covered by objectives that are framed by these themes. (Spring & Fall) Prerequisites: FN 4320, and permission of the instructor.

## **International Finance (3)**

FN 4350

The course addresses the historical, institutional, and empirical aspects of the foreign exchange market, the eurocurrency market and the international bond market. The managerial implementation of international financial instruments in global oriented business organizations is stressed. (Fall & Spring) Prerequisites: FN 3310 and IB 3321.

## **Financial Counseling (3)**

FN 4360

Analysis and application of the financial planning process for executives and small business owners. Emphasis on life and health insurance, annuities, social security, and real estate investments; developing client data; fundamentals of estate planning and taxation relating to insurance, investments and estates. (Fall).

## **Internship in Finance (3)**

FN 4375

The opportunity to gain knowledge through experiential activities in professional life. Prerequisites: A minimum overall GPA of 2.8, successful completion of FN 3310, completion or concurrent enrollment in a finance major course. Pass/No Pass credit is given. (Fall; Spring; Summer)

## **Employee Benefits Management (3)**

FN 4380

Analysis of objectives, techniques, and markets for employee benefit plans. Examination of group life and health insurance coverages, social security, and retirement planning, including pension and profit sharing plan management. (Fall, Spring) Concurrent enrollment or successful completion of BA 3325 or HR 3370 or MN 3330

## **Seminar in Finance (3)**

FN 4390

Advanced analyses of recent developments in financial and/or investment theory, and in quantitative and qualitative techniques for risk management and financial planning decisions. A seminar approach is used

# FINANCIAL SERVICES AND RISK MANAGEMENT

to provide a high degree of student-instructor interaction. (Spring) Prerequisite: Senior standing. Finance majors only.

# INFORMATION SYSTEMS MANAGEMENT

## Academic Year

2011-2012

## School

Bill Greehey School of Business [School Web site](#)

## School Dean

Tanuja Singh, D.B.A. [tsingh@stmarytx.edu](mailto:tsingh@stmarytx.edu)

## Department

Finance and Quantitative Management

## Department Chair

David W. Sommer, Ph.D. [dsommer@stmarytx.edu](mailto:dsommer@stmarytx.edu)

## Description of Program/Major

Information is a corporate asset that is dependent on the implementation of effective computer-based systems. Development of these data systems requires knowledge of the enterprise and its functions, as well as technical competence. Individuals interested in the use of computerized management information systems, including design, analysis, and interpretation of computerized systems as aids to making decisions, should consider this major at St. Mary's University. Information systems management is a people-oriented career that requires excellent communication skills and the ability to work well in groups.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process	3

# INFORMATION SYSTEMS MANAGEMENT

(Formerly FA 1101, FA 1102, FA 1103)

SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### Bill Greehey School of Business School Specific Core (21 Hours)

Social Sciences	EC 2301, EC 2302	6
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Literature	EN 23XX	3
Mathematics	MT 1305 Finite Math	3
Theology	Advanced Theology 33XX	3
Speech	MN 3320 Business Communications	3

### Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

AC 2310	Introduction to Accounting I	3
AC 2320	Introduction to Accounting II	3
AC 3331*	Accounting Information Systems	3
BA 1310	Fundamentals of Business Enterprise	3
BA 3351*	Legal Environment of Business	3
BA 4334*	Business Ethics	3
BA 4380*	Business Policy and Strategy	3
FN 3310*	Corporate Finance	3
IB 3321*	US Business in Interdependent World	3
MT 1306	Calculus for Business	3
MK 3310*	Principles of Marketing	3
MN 3330*	Organizational Behavior	3
QM 3320*	Business Statistics	3
QM 4330*	Operations Management	3

\*Junior Standing

## Four Year Degree Plan

# INFORMATION SYSTEMS MANAGEMENT

St. Mary's University

BBA in Information Systems Management (ISM) Degree Plan

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.*

*"Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

First Year Courses					
	Fall	Hr		Spring	Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 1313 Foundations of Reflection: Others	3
—	EN 13XX Rhetoric & Composition <sup>1</sup>	3	—	SMC 1314 Foundations of Reflection: God	3
—	MT 1305 Finite Math	3	—	MT 1306 Calculus for Business	3
—	BA 1310 Fundamentals of Business Enterprise	3	—	EC 2303 Intro Microeconomic Theory	3
—	ND 0101 Personal & Academic Development	0			
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Second Year Courses					
—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	—	SMC 2301 Foundations of Practice: Ethics Literature <sup>2</sup>	3
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	TH 33xx Advanced Theology <sup>3</sup>	3
—	SMC 2304 Foundation of Practice: Literature	3	—	AC 2320 Intro to Accounting II	3
—	EC 2301 Intro Macroeconomic Theory	3		MN 3320 Business Communications	3
—	AC 2310 Intro to Accounting I	3			
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Third Year Courses					
—	CS 3310 Process Mgmt Programming Language	3	—	BA 3351 Legal Environment of Business	3
—	CS Programming Language	3	—	IB 3321 US Business in Interdependent World	3
—	MK 3310 Principles of Marketing	3	—	QM 3342 Database Management	3
—	QM 3330 Management Information Systems	3	—	QM 3360 Enterprise Resource Planning	3
—	QM 3340 Project Management	3	—	QM 3320 Business Statistics	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Fourth Year Courses					
—	CS 4330 Data Communications	3	—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
—	FN 3310 Corporate Finance	3	—	BA 4334 Business Ethics	3
—	MN 3330 Organizational Behavior	3	—	BA 4380 Business Strategy	3
—	QM 4330 Operations Management	3	—	QM 4380 Senior Project	3
—	QM 4340 Business Intelligence	3	—	ISM/CS Elective	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>

Total Hours 120

<sup>1</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>2</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>3</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Foreign Languages – 6 hours - Can be met by the following:

- 6 hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training;
- 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge;
- 12 hours of CLEP credit;
- 12 hours of AP credit;
- 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

**All Business courses must be completed with a "C" or higher.**

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

# INFORMATION SYSTEMS MANAGEMENT

St. Mary's University  
BBA in Information Systems Management (ISM) Plan – 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## Bill Greehey School of Business School Specific Core (21 Hours)

__ Social Sciences – EC 2301, EC 2302	6
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Literature – EN 23XX	3
__ Mathematics –MT 1305 Finite Math	3
__ Theology – Advanced Theology 33XX	3
__ Speech – MN 3320 Business Communications	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit; Or, 12 hours of AP credit; Or, 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).	

## Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

__ AC 2310 – Introduction to Accounting I	3
__ AC 2320 – Introduction to Accounting II	3
__ BA 1310 – Fundamentals of Business Enterprise	3
__ BA 3351* – Legal Environment of Business	3
__ BA 4334* – Business Ethics	3
__ BA 4380* – Business Policy and Strategy	3
__ FN 3310* – Corporate Finance	3
__ IB 3321* – US Business in Interdependent World	3
__ MT 1306 – Calculus for Business	3
__ MK 3310* – Principles of Marketing	3
__ MN 3330* – Organizational Behavior	3
__ QM 3320* – Business Statistics	3
__ QM 3330* – Management Information Systems	3
__ QM 4330* – Operations Management	3

\*Junior Standing

## Information Systems Management Major Courses (27 hours)

__ CS 3310 – Process Management	3
__ CS 4330 – Data Communications	3
__ QM 3340 – Project Management	3
__ QM 3342 – Database Management	3
__ QM 3360 – Enterprise Resource Planning	3
__ QM 4340 – Business Intelligence	3
__ QM 4380 – Senior Project	3
__ CS Programming Language	3
__ ISM/CS Elective	3

## Proficiency in Information Technology and Information Literacy

\_\_ Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

**All Business courses must be completed with a "C" or higher.**

# INFORMATION SYSTEMS MANAGEMENT

## Department Courses and Descriptions

### **Business Statistics (3)**

QM 3320

An introduction to basic statistical theory and applications to business problems. Emphasis on probability, averages, and dispersion, time series and index numbers, estimation and testing, regression and correlation. Introduction to computer packages. Prerequisite: MT 1305 and MT 1306.

### **Management Information Systems (3)**

QM 3330

An introduction to the use of computers and information for problem solving and decision making in management environments; introduction to essential computer technology, information systems development methodology, and management of computer and information as strategic resources; spreadsheet and database applications for management.

### **Managing Business Projects (3)**

QM 3340

This course provides a management perspective on managing projects. It examines the basic nature of managing business, public, engineering, and information systems projects, including the specific insights and techniques required. Issues such as the selection and management of the project team, project initiation, implementation, and termination are addressed.

### **Database Management (3)**

QM 3342

Introduction to theory of database management systems as applied in private and public, profit and non-profit organizations. Balance of managerial and technical issues. Strategic aspects of information as a corporate resource and database planning. Database design, development, and administration using commercial database management systems for personal and multiuser computers and fourth generation languages. (Fall)

### **Enterprise Resource Planning Systems/SAP (3)**

QM 3360

The ERP/SAP course will be an overview of Enterprise Resources Planning (ERP) using SAP software. Students should gain an understanding of the impact ERP systems have on organizations using SAP as a working example. Topics include business process reengineering, choosing an ERP system, ERP risk factors, and implementation issues

### **Special Studies in Information Systems Management (1)**

QM 4100

A study of selected topics in Information Systems Management. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor

### **Special Studies in Information Systems Management (2)**

QM 4200

A study of selected topics in Information Systems Management. Specific subject indicated each time the

# INFORMATION SYSTEMS MANAGEMENT

course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor

## **Special Studies in Information Systems Management (3)**

QM 4300

A study of selected topics in Information Systems Management. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor

## **Operations Management (3)**

QM 4330

The management of the production and operations functions will be examined. Qualitative and quantitative methods will be used to analyze forecasting, system design, quality, inventory management, scheduling, supply chain management, and project management. (Fall) Prerequisite: QM 3320.

## **Business Intelligence (3)**

QM 4340

Development and application of the strategies, methods, and techniques used in data mining, predictive analytics, and other decision support systems. The course employs testing, documenting and using software programs in functional areas of business such as Finance, Production, Marketing, and Accounting. The use of SAS software is employed for hands-on experience. Prerequisite: QM 3320.

## **Advanced Excel (3)**

QM 4361

This course is intended to provide a seminar of the principles associated with the application of information technologies in business organizations. It will cover hardware technologies, software applications, personnel, procedures, and issues associated with management of an information systems function. It will also address the challenges IT managers face managing IT enabled organizations. (Fall).

## **Strategy, Management & Acquisition (3)**

QM 4365

This course aids in the understanding and building of end-user applications using Excel and elements of VBA. This course helps expand knowledge of the built-in functions with a focus on financial and statistical needs. Other Excel tools for macros and data analysis will be introduced. (Spring).

## **E-Business (3)**

QM 4370

The course provides an introduction to eBusiness in a global environment. The material covered includes: (1) technologies, infrastructures and mechanisms that enable the development of eBusiness, (2) business models that include foreign outsourcing and their impact on organizational culture and diversity, (3) issues that are being raised in the areas of privacy, intellectual property, and security, and (4) the impact of the digital divide and other ethical and political topics.

## **Internship in Information Systems Management (3)**

QM 4375

The opportunity to gain knowledge through work experience activities in professional life. Prerequisites:



# INFORMATION SYSTEMS MANAGEMENT

Consent of the associate dean, faculty supervisor, major adviser, and department chairperson, minimum overall GPA of 2.5, successful completion of QM 3330, and completion or concurrent enrollment in an Information Systems Management major course. Pass/No Pass credit is given. (Fall; Spring; Summer)

# INTERNATIONAL BUSINESS

## Academic Year

2011-2012

## School

Bill Greehey School of Business [School Web site](#)

## School Dean

Tanuja Singh, D.B.A. [tsingh@stmarytx.edu](mailto:tsingh@stmarytx.edu)

## Department

Management and Marketing

## Department Chair

Richard Priesmeyer, Ph.D. [rpriesmeyer@stmarytx.edu](mailto:rpriesmeyer@stmarytx.edu)

## Description of Program/Major

Globalization of our economy continues at an increasing rate, creating the need for individuals well-versed in the intricacies of conducting business across borders. As a result, courses offered in this major are interdisciplinary, integrating international and foreign language studies with business principles, including the study of management functions, policies and practices of international enterprises. International business graduates enter a people-oriented career that requires excellent communication skills and the ability to work well on multicultural teams.

The major in international business at St. Mary's University is designed for students who are interested in seeking careers in the global arena. Individuals interested in management practices around the world, international behavior, and challenges for multinational corporations in foreign social, political and economic environments should consider this major.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3

# INTERNATIONAL BUSINESS

SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### Bill Greehey School of Business School Specific Core (21 Hours)

Social Sciences	EC 2301, EC 2302	6
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Literature	EN 23XX	3
Mathematics	MT 1305 Finite Math	3
Theology	Advanced Theology 33XX	3
Speech	MN 3320 Business Communications	3

### Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

AC 2310	Introduction to Accounting I	3
AC 2320	Introduction to Accounting II	3
AC 3331*	Accounting Information Systems	3
BA 1310	Fundamentals of Business Enterprise	3
BA 3351*	Legal Environment of Business	3
BA 4334*	Business Ethics	3
BA 4380*	Business Policy and Strategy	3
FN 3310*	Corporate Finance	3
IB 3321*	US Business in Interdependent World	3
MT 1306	Calculus for Business	3
MK 3310*	Principles of Marketing	3
MN 3330*	Organizational Behavior	3
QM 3320*	Business Statistics	3
QM 4330*	Operations Management	3

\*Junior Standing

## Four Year Degree Plan

# INTERNATIONAL BUSINESS

St. Mary's University

BBA in International Business (IB) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.

"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses						
Fall			Hr	Spring		
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3	
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 1313 Foundations of Reflection: Others	3	
—	EN 13XX Rhetoric & Composition <sup>1</sup>	3	—	SMC 1314 Foundations of Reflection: God	3	
—	MT 1305 Finite Math	3	—	MT 1306 Calculus for Business	3	
—	BA 1310 Fundamentals of Business Enterprise	3	—	EC 2303 Intro Microeconomic Theory	3	
—	ND 0101 Personal & Academic Development	0				
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>	
Second Year Courses						
—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	—	SMC 2301 Foundations of Practice: Ethics Literature <sup>2</sup>	3	
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	AC 2320 Intro to Accounting II	3	
—	SMC 2304 Foundation of Practice: Literature	3	—	MN 3320 Business Communications	3	
—	EC 2301 Intro Macroeconomic Theory	3	—	2000 Level Foreign Language	3	
—	AC 2310 Intro to Accounting I	3				
—	2000 Level Foreign Language	3				
	<b>Total</b>	<b>18</b>		<b>Total</b>	<b>15</b>	
Third Year Courses						
—	BA 3351 Legal Environment of Business	3	—	TH 33xx Advanced Theology <sup>3</sup>	3	
—	FN 3310 Corporate Finance	3	—	IB 3321 US Business in Interdependent World	3	
—	MK 3310 Principles of Marketing	3	—	QM 3320 Business Statistics	3	
—	MN 3330 Organizational Behavior	3	—	QM 3330 Management Information Systems	3	
—	IB 3310 International Economics	3	—	3000 Level Professional Foreign Language	3	
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>	
Fourth Year Courses						
—	IB 4351 International Finance	3	—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	
—	IB 4352 International Marketing	3	—	BA 4334 Business Ethics	3	
—	IB 4358 International Management	3	—	BA 4380 Business Policy & Strategy	3	
—	QM 4330 Operations Management	3	—	IB 4390 Seminar in International Business	3	
—	IB Elective	3	—	IB Elective	3	
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>	

Total Hours 123

<sup>1</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>2</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>3</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Foreign Languages – 6 hours - Can be met by the following:

- 6 hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training;
- 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge;
- 12 hours of CLEP credit;
- 12 hours of AP credit;
- 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

**All Business courses must be completed with a "C" or higher.**

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

# INTERNATIONAL BUSINESS

St. Mary's University  
BBA International Business (IB) Degree Plan – 2010  
123 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## Bill Greehey School of Business School Specific Core (21 Hours)

__ Social Sciences – EC 2301, EC 2302	6
__ Composition and Rhetoric ( <b>grade of “C” or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Literature – EN 23XX	3
__ Mathematics –MT 1305 Finite Math	3
__ Theology – Advanced Theology 33XX	3
__ Speech – MN 3320 Business Communications	3

## Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

__ AC 2310 – Introduction to Accounting I	3
__ AC 2320 – Introduction to Accounting II	3
__ BA 1310 – Fundamentals of Business Enterprise	3
__ BA 3351* – Legal Environment of Business	3
__ BA 4334* – Business Ethics	3
__ BA 4380* – Business Policy and Strategy	3
__ FN 3310* – Corporate Finance	3
__ IB 3321* – US Business in Interdependent World	3
__ MT 1306 – Calculus for Business	3
__ MK 3310* – Principles of Marketing	3
__ MN 3330* – Organizational Behavior	3
__ QM 3320* – Business Statistics	3
__ QM 3330* – Management Information Systems	3
__ QM 4330* – Operations Management	3

\*Junior Standing

## International Business Major Courses (30 hours)

__ IB 3310 – International Economics	3
__ IB 4351 – International Finance	3
__ IB 4352 – International Marketing	3
__ IB 4358 – International Management	3
__ IB 4380 – Seminar in International Business	3
__ 2000 Level – Intermediate Foreign Language	3
__ 2000 Level – Intermediate Foreign Language	3
__ 3000 Level – Professional Foreign Language	3
__ IB Elective	3
__ IB Elective	3

## Proficiency in Information Technology and Information Literacy

\_\_ Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

**All prerequisites must be completed with a “C” or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

All Business courses must be **completed with a “C” or higher.**

# INTERNATIONAL BUSINESS

## Department Courses and Descriptions

### **International Economics (3)**

IB 3310

An analysis of current theories of international transactions, with emphasis on the inter relationships among various aggregate economic variables with balance of payments. Policies effecting economic relations on the national and international levels are examined. Contemporary economic issues and theories are considered as they relate to the world of economy. Prerequisites: EC2301 and EC2303.

### **US Business in an Interdependent World (3)**

IB 3321

A survey of the effect that differences in cultural, economic, legal, political, and social environments have on the way business is conducted throughout the world. Also explored are the effects that regional economic and political arrangements, and international institutions are having on firms involved in international business. (Fall; Spring) Designated as a writing-intensive course. Prerequisites: EC2301 and EC 2303. Writing intensive course.

### **Special Studies in International Business (1)**

IB 4100

A study of selected topics in International Business. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

### **Special Studies in International Business (2)**

IB 4200

A study of selected topics in International Business. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor

### **Special Studies in International Business (3)**

IB 4300

A study of selected topics in International Business. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

### **International Finance (3)**

IB 4351

The course addresses the historical, institutional and empirical aspects of the foreign exchange market, the euro currency market and the international bond market. The managerial implementation of international financial instruments in global oriented business organizations is stressed. (Fall; Spring) Prerequisites: FN 3310 and IB 3321.

### **International Marketing (3)**

IB 4352

Students develop a familiarity with the problems and perspectives of marketing across national boundaries and within foreign countries and gain insights into the environmental impact of international

# INTERNATIONAL BUSINESS

business activities. The ability to analyze marketing decisions and the methods of structuring and controlling programs as they relate to overseas markets are stressed. (Fall) Prerequisites: IB 3321W, MK 3310

## **Managing in Cross-Cultural Environments (3)**

IB 4355

Addresses cultural impacts on international business and management. Examines the role of the global manager as creator of synergy, leader in change, and influencer of organization, work, and team cultures. Analyzes cross-cultural effectiveness in terms of international assignments, and family relocation. Considers how to do business with intercultural sensitivity and skills for major world regions. (Fall) Prerequisites BA 3325W or MN 3330 and IB 3321

## **International Management (3)**

IB 4358

The course examines the managerial complexities and peculiarities of business operations that cross national borders. Thus it includes the study of management functions, organizational structures, policies and procedures, and practices of international, multinational, and global corporations and their varying strategies. (Fall) Designated as a writing-intensive course. Prerequisites: IB 3321W and BA3325W or MN 3330

## **The Business Environment of Americas (3)**

IB 4361

This course provides a general, comparative overview of the business environments of the Americas. The discussion and analysis will focus on the economic, legal-political, and social-cultural dimensions of the business environments of these countries, and their impact on business practices. Prerequisite: IB 3321W, or EC 3310/IB 3310.

## **The Business Environment of Asia (3)**

IB 4362

This course provides a general, comparative overview of the business environments of Asia. The discussion and analysis will focus on the economic, legal-political, and social-cultural dimensions of the business environments of these countries, and their impact on business practices. Prerequisite: IB 3321W, or EC 3310/IB 3310.

## **The Business Environment of Europe (3)**

IB 4363

This course provides a general, comparative overview of the business environments of Europe. The discussion and analysis will focus on the economic, legal-political, and social-cultural dimensions of the business environments of these countries, and their impact on business practices. Prerequisite: IB 3321W, or EC 3310/IB 3310.

## **Comparative Legal Environments of NAFTA Countries (3)**

IB 4364

This course is designed to acquaint students with basic legislative, judicial, executive, and administrative structures of each of the NAFTA countries. Emphasis is placed on the key differences in the systems and essential procedures for effective business operation within these legal systems. Prerequisites: IB 3321W

# INTERNATIONAL BUSINESS

and BA3325W or MN 3330

## **International Accounting & Taxation (3)**

IB 4365

An examination of the accounting principles and practices among countries and an overview of taxation of U.S. businesses operating internationally. Emphasis is placed on management decisions associated with accounting and taxation of companies operating in the international environment. (Fall)

Prerequisites: AC 2320 and IB 3321

## **Global Market Research (3)**

IB 4372

An examination of the techniques and methodologies used for analyzing industries, markets, and competitors within a regional or global context. Emphasis is placed on gaining a comprehensive understanding of the challenges associated with analyzing customers, competitors, environmental trends, market characteristics. (Spring) Prerequisite: IB 3321W, MK3310

## **Internship in International Business (3)**

IB 4375

The opportunity to gain knowledge through experiential activities in professional life. Cooperation with public, business, and government institutions in monitoring and gaining work experience aimed at supplementing the learning process. Prerequisites: Formal acceptance as an international business major, minimum overall GPA of 2.8, successful completion of IB 3321W, BA 3325W, MN 3330. Pass/No Pass credit is given. (Fall; Spring; Summer)

## **Seminar in International Business (3)**

IB 4390

Advanced course permitting the student to engage in reading and research on current developments in International Business. Group analysis of reports aids in expanding and deepening the horizons of the participants. (Spring) Designated as a writing intensive course. Prerequisite: Senior standing and IB 3310, IB 3321W and six additional hours designated as "IB" which can be taken concurrently. International Business majors only



# MANAGEMENT

## Academic Year

2011-2012

## School

Bill Greehey School of Business [School Web site](#)

## School Dean

Tanuja Singh, D.B.A. [tsingh@stmarytx.edu](mailto:tsingh@stmarytx.edu)

## Department

Management and Marketing

## Department Chair

Richard Priesmeyer, Ph.D. [rpriesmeyer@stmarytx.edu](mailto:rpriesmeyer@stmarytx.edu)

## Description of Program/Major

The Management degree is intended to prepare students with skills in leadership, negotiation, communication, data analysis, decision making, and innovation and change. This degree will provide students the opportunity to integrate their knowledge of management processes with an action learning project in their senior year. These partners consist of local, national, and international firms that have joined St. Mary's commitment to engage students in supervised consulting projects to better prepare them for their management careers. Students will apply project management to a real world business problem that is of concern to a partner firm. The students will then develop solutions and present results to the firm's management.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3

# MANAGEMENT

SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### Bill Greehey School of Business School Specific Core (21 Hours)

Social Sciences	EC 2301, EC 2302	6
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Literature	EN 23XX	3
Mathematics	MT 1305 Finite Math	3
Theology	Advanced Theology 33XX	3
Speech	MN 3320 Business Communications	3

### Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

AC 2310	Introduction to Accounting I	3
AC 2320	Introduction to Accounting II	3
AC 3331*	Accounting Information Systems	3
BA 1310	Fundamentals of Business Enterprise	3
BA 3351*	Legal Environment of Business	3
BA 4334*	Business Ethics	3
BA 4380*	Business Policy and Strategy	3
FN 3310*	Corporate Finance	3
IB 3321*	US Business in Interdependent World	3
MT 1306	Calculus for Business	3
MK 3310*	Principles of Marketing	3
MN 3330*	Organizational Behavior	3
QM 3320*	Business Statistics	3
QM 4330*	Operations Management	3

\*Junior Standing

## Four Year Degree Plan

# MANAGEMENT

## St. Mary's University BBA in Management (MN) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.

"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
	Fall	Hr		Spring	Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 1313 Foundations of Reflection: Others	3
—	EN 13XX Rhetoric & Composition <sup>1</sup>	3	—	SMC 1314 Foundations of Reflection: God	3
—	MT 1305 Finite Math	3	—	MT 1306 Calculus for Business	3
—	BA 1310 Fundamentals of Business Enterprise	3	—	EC 2303 Intro Microeconomic Theory	3
—	ND 0101 Personal & Academic Development	0			
	Total	15		Total	15
Second Year Courses					
—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	—	SMC 2301 Foundations of Practice: Ethics Literature <sup>2</sup>	3
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	TH 33xx Advanced Theology <sup>3</sup>	3
—	SMC 2304 Foundation of Practice: Literature	3	—	AC 2320 Intro to Accounting II	3
—	EC 2301 Intro Macroeconomic Theory	3	—	MN 3320 Business Communications	3
—	AC 2310 Intro to Accounting I	3			
	Total	15		Total	15
Third Year Courses					
—	BA 3351 Legal Environment of Business	3	—	IB 4358 International Management	3
—	FN 3310 Corporate Finance	3	—	MK 3310 Principles of Marketing	3
—	IB 3321 US Business in Interdependent World	3	—	MN 3360 A Study in Leadership	3
—	MN 3330 Organizational Behavior	3	—	MN 3370 Human Resource Management	3
—	QM 3320 Business Statistics	3	—	QM 3330 Management Information Systems	3
	Total	15		Total	15
Fourth Year Courses					
—	MN 4330 Negotiation and Conflict Resolution	3	—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
—	QM 4330 Operations Management	3	—	BA 4334 Business Ethics	3
—	QM 4340 Business Intelligence	3	—	BA 4380 Business Policy & Strategy	3
—	Management Elective*	3	—	MN 4380 Exper Learn or MN 4390 Seminar	3
—	Management Elective*	3	—	Management Elective*	3
	Total	15		Total	15

Total Hours 120

<sup>1</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>2</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>3</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Foreign Languages – 6 hours - Can be met by the following:

- 6 hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training;
- 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge;
- 12 hours of CLEP credit;
- 12 hours of AP credit;
- 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).

\*Management elective must be selected from the following:

BA 4320 Management Consulting	BA 4325 Non-linear Management	BA 4350 Exploring Entrepreneurship
FN 3340 Risk Management	FN 4380 Employee Benefits Management	MN 4300 Special Topics in Management
IB 4355 Managing in Cross-Cultural Environment	MN 3380 Managing Innovation and Change	MN 4355 Employment Law (HR4355)
MN 4360 Managerial Decision Making	MN 4365 Compensation Mgmt (HR4360)	MN 4370 Service Management
MN 4375 Internship in Management	QM 3340 Project Management	

All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).

All Business courses must be completed with a "C" or higher.

# MANAGEMENT

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

St. Mary's University  
BBA Management (MN) Degree Plan – 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

### St. Mary's University Core (30 Hours)

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

### Bill Greehey School of Business School Specific Core (21 Hours)

__ Social Sciences – EC 2301, EC 2302	6
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Literature – EN 23XX	3
__ Mathematics –MT 1305 Finite Math	3
__ Theology – Advanced Theology 33XX	3
__ Speech – MN 3320 Business Communications	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit; Or, 12 hours of AP credit; Or, 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).	3

### Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

__ AC 2310 – Introduction to Accounting I	3
__ AC 2320 – Introduction to Accounting II	3
__ BA 1310 – Fundamentals of Business Enterprise	3
__ BA 3351* – Legal Environment of Business	3
__ BA 4380* – Business Policy and Strategy	3
__ BA 4334* – Business Ethics	3
__ FN 3310* – Corporate Finance	3
__ IB 3321* – US Business in Interdependent World	3
__ MT 1306 – Calculus for Business	3
__ MK 3310* – Principles of Marketing	3
__ MN 3330* – Organizational Behavior	3
__ QM 3320* – Business Statistics	3
__ QM 3330* – Management Information Systems	3
__ QM 4330* – Operations Management	3

\*Junior Standing

### Management Major Courses (27 hours)

__ IB 4358 – International Management	3
__ MN 3360 – A Study in Leadership	3
__ MN 3370 – Human Resource Management	3
__ MN 4330 – Negotiation and Conflict Resolution	3
__ MN 4380 – Exper Learn or MN 4390 Seminar	3
__ QM 4340 – Business Intelligence	3
__ Management Elective	3
__ Management Elective	3
__ Management Elective	3

### Proficiency in Information Technology and Information Literacy

# MANAGEMENT

\_\_ Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

**All Business courses must be completed with a "C" or higher.**

# MANAGEMENT

## Department Courses and Descriptions

### **Communication in a Management Setting (3)**

MN 3320

This course will provide students with an introduction to industry standards in oral and written communication as well as professionalism expectations. Communication regarding performance management, supervision, recruitment and retention, motivation, and dismissal will also be examined.

### **Organizational Behavior (3)**

MN 3330

This course will examine the role of individuals and groups in the organizational setting. Students will learn about how individuals and groups interact with and influence organizational processes through an examination of traditional and current management and organizational behavior models.

### **A Study in Leadership (3)**

MN 3360

This course will examine literary and historical narratives to develop questions focused on moral and ethical leadership issues and situations. Students will deeply explore the leadership situations included in the literary works to develop their own understanding of moral leadership. The broad themes of the course include understanding the moral challenge, developing moral reasoning, and enacting moral leadership.

### **Human Resource Management (3)**

MN 3370

An introduction to the functions and strategies of Human Resources Management as they support and advance organizational strategy. Topics include but are not limited to the following: recruitment and selection, employee relations, employment law, compensation and benefits, training and development.

### **Human Resources Management (3)**

MN 3370

An introduction to the functions and strategies of Human Resources Management as they support and advance organizational strategy. Topics include but are not limited to the following: recruitment and selection, employee relations, employment law, compensation and benefits, training and development.

### **Managing Innovation and Change (3)**

MN 3380

This course will include current concepts on the effective management of a rapidly changing business environment and the role of managers in assisting the organization with this change. Students will develop abilities to apply “open innovation” to the business as a new paradigm that assumes that firms can and should use external ideas as well as internal ideas, as the firms look to create and profit from new ideas and technology.

### **Special Topics in Management (3)**

MN 4300

A study of topics in Management. Specific subject is dictated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisite: Consent of instructor.

# MANAGEMENT

## **Negotiation & Conflict Resltn (3)**

MN 4330

Effective managers engage in numerous negotiations and must often resolve conflicts in organizations. This course will engage students in understanding models of negotiation while actively applying these models in practical negotiation situations.

## **Employment Law (3)**

MN 4355

Examination of relevant federal, state, and local laws pertaining to employment. Topics include, but are not limited to the following: Civil Rights Acts of 1964 and 1991 and related areas (Title VII, ADA, ADEA, EEOC, FMLA, Affirmative Action, etc.) Texas Workforce Commission, organized labor. (Spring) Prerequisites: Concurrent enrollment or successful completion of BA3325 or MN3330 or HR3370.

## **Managerial Economics & Dec Mkg (3)**

MN 4360

Managers must understand how to use financial and non-financial information to adopt their decisions for the uncertainty in the market place. This course will cover various management decision models for a range of common business decisions. Topics covered in this course include incremental revenue/cost analysis, pricing and elasticity, cost estimation, market structure analysis, decision-making under uncertainty, and using statistical analyses in decision making.

## **Compensation Management (3)**

MN 4365

Examination of compensation systems that support and advance organizational strategy. Topics include: types of compensation, internal and external compensation equity, pay systems, performance appraisal systems, employee benefits, role of unions, contingent workforce considerations, legal requirements, and trends. (Fall) Prerequisites: Concurrent enrollment or successful completion of BA3325 or MN3330 or HR3370 or MN3370.

## **Service Management (3)**

MN 4370

This course will approach service management from an integrated viewpoint with a focus on quality and customer satisfaction. Thus, the contents of the course will integrate operations management, marketing, strategy, information technology and organizational issues. Because the service sector is the fastest growing sector of the economy, this course is expected to help students discover many entrepreneurial opportunities in service industries.

## **Internship in Management (3)**

MN 4375

The opportunity to gain knowledge through experiential activities in professional life. Prerequisites: minimum over all GPA 2.8, concurrent enrollment or successful completion of BA3325 or MN3330 or HR3370 or MN3370. Pass/No Pass credit is given. (Fall; Spring; Summer) Junior standing

## **Experiential Learning Component (3)**

# MANAGEMENT

MN 4380

This course is designed as an applied learning course whereby professors provide instructional support for projects conducted with strategic educational partners. These partners consist of local, national, and international firms that have joined St. Mary's commitment to engage students in supervised consulting projects to better prepare them for their management careers. Students will apply project management to a real world business problem that is of concern to a partner firm. The students will then develop solutions and present results to the firm's management. Prerequisites: Senior standing, approval of advisor and department chair, admission into the ELC track in the junior year, 3.0 GPA, MN3320, MN3330, MN3360, MN4330, QM3320, QM3330, QM4390.

## **Seminar in Management (3)**

MN 4390

Students will engage in advanced independent reading and research on current developments in Management. Group analysis of individual reports aids in expanding and deepening the horizons of the participants. Prerequisites: Senior standing, MN3320, MN3330, MN3360, MN4330, and QM4390.



# MARKETING

## Academic Year

2011-2012

## School

Bill Greehey School of Business [School Web site](#)

## School Dean

Tanuja Singh, D.B.A. [tsingh@stmarytx.edu](mailto:tsingh@stmarytx.edu)

## Department

Management and Marketing

## Department Chair

Richard Priesmeyer, Ph.D. [rpriesmeyer@stmarytx.edu](mailto:rpriesmeyer@stmarytx.edu)

## Description of Program/Major

Marketing is a significant and dynamic area of all business, whether product- or service-related. By definition, marketing is the analysis, planning, implementation and control of programs designed to create, build and maintain beneficial exchanges and relationships with target markets for the purpose of achieving organizational objectives. The complexities of today's economic and social environments are increasing the demand for effective marketing professionals.

The marketing program at St. Mary's University is designed for students who are interested in seeking careers that involve the exchange of goods and services through such activities as market research and analysis, advertising and promotion, or sales management. Marketing students learn ways to identify, understand and satisfy the needs of buyers and organizations.

Marketing is a people-oriented career that requires excellent communication skills and the ability to work well in teams.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3

# MARKETING

SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### Bill Greehey School of Business School Specific Core (21 Hours)

Social Sciences	EC 2301, EC 2302	6
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Literature	EN 23XX	3
Mathematics	MT 1305 Finite Math	3
Theology	Advanced Theology 33XX	3
Speech	MN 3320 Business Communications	3

### Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

AC 2310	Introduction to Accounting I	3
AC 2320	Introduction to Accounting II	3
AC 3331*	Accounting Information Systems	3
BA 1310	Fundamentals of Business Enterprise	3
BA 3351*	Legal Environment of Business	3
BA 4334*	Business Ethics	3
BA 4380*	Business Policy and Strategy	3
FN 3310*	Corporate Finance	3
IB 3321*	US Business in Interdependent World	3
MT 1306	Calculus for Business	3
MK 3310*	Principles of Marketing	3
MN 3330*	Organizational Behavior	3
QM 3320*	Business Statistics	3
QM 4330*	Operations Management	3

\*Junior Standing

## Four Year Degree Plan

# MARKETING

St. Mary's University

BBA in Marketing (MK) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.

"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
	Fall	Hr		Spring	Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	SMC 1311 Foundations of Reflection: Self	3	___	SMC 1313 Foundations of Reflection: Others	3
___	EN 13XX Rhetoric & Composition <sup>1</sup>	3	___	SMC 1314 Foundations of Reflection: God	3
___	MT 1305 Finite Math	3	___	MT 1306 Calculus for Business	3
___	BA 1310 Fundamentals of Business Enterprise	3	___	EC 2303 Intro Microeconomic Theory	3
___	ND 0101 Personal & Academic Development	0			
	Total	15		Total	15
Second Year Courses					
___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	___	SMC 2301 Foundations of Practice: Ethics Literature <sup>2</sup>	3
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	TH 33xx Advanced Theology <sup>3</sup>	3
___	SMC 2304 Foundation of Practice: Literature	3	___	AC 2320 Intro to Accounting II	3
___	EC 2301 Intro Macroeconomic Theory	3	___	MN 3320 Business Communications	3
___	AC 2310 Intro to Accounting I	3			
	Total	15		Total	15
Third Year Courses					
___	BA 4334 Business Ethics	3	___	BA 3351 Legal Environment of Business	3
___	FN 3310 Corporate Finance	3	___	MK 3330 Consumer Behavior	3
___	IB 3321 US Bus in Interdependent World	3	___	QM 3320 Business Statistics	3
___	MK 3310 Principles of Marketing	3	___	QM 3330 Management Information Systems	3
___	MN 3330 Organizational Behavior	3	___	Business Elective*	3
	Total	15		Total	15
Fourth Year Courses					
___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	___	BA 4380 Business Policy & Strategy	3
___	MK 3340 Promotion	3	___	MK 4390 Seminar in Marketing	3
___	MK 3380 Services Marketing	3	___	Business Elective*	3
___	MK 4370 Marketing Research	3	___	Marketing Elective	3
___	QM 4330 Operations Management	3	___	Marketing Elective	3
	Total	15		Total	15

Total Hours 120

<sup>1</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>2</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>3</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Foreign Languages – 6 hours - Can be met by the following:

- 6 hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training;
- 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge;
- 12 hours of CLEP credit;
- 12 hours of AP credit;
- 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).

\*One Business Elective must be 4000 level. One Business Elective must be selected from the following:

BA 4320 Management Consulting	IB 4352 International Marketing
FN 3330 Financial Institutions	MN 4370 Service Management
QM 4370 E-Business	

**All prerequisites must be completed with a "C" or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

**All Business courses must be completed with a "C" or higher.**

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

# MARKETING

St. Mary's University  
BBA Marketing (MK) Degree Plan - 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## Bill Greehey School of Business School Specific Core (21 Hours)

__ Social Sciences – EC 2301, EC 2302	6
__ Composition and Rhetoric ( <b>grade of “C” or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Literature – EN 23XX	3
__ Mathematics –MT 1305 Finite Math	3
__ Theology – Advanced Theology 33XX	3
__ Speech – MN 3320 Business Communications	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit; Or, 12 hours of AP credit; Or, 3 hours of a foreign language not previously studied and 3 hours of an additional foreign language experience (summer language course in connection with an approved study abroad program or any required business school course with a language component).	

## Bill Greehey School of Business School Common Body of Business Knowledge (42 Hours)

__ AC 2310 – Introduction to Accounting I	3
__ AC 2320 – Introduction to Accounting II	3
__ BA 1310 – Fundamentals of Business Enterprise	3
__ BA 3351* – Legal Environment of Business	3
__ BA 4334* – Business Ethics	3
__ BA 4380* – Business Policy and Strategy	3
__ FN 3310* – Corporate Finance	3
__ IB 3321* – US Business in Interdependent World	3
__ MT 1306 – Calculus for Business	3
__ MK 3310* – Principles of Marketing	3
__ MN 3330* – Organizational Behavior	3
__ QM 3320* – Business Statistics	3
__ QM 3330* – Management Information Systems	3
__ QM 4330* – Operations Management	3

\*Junior Standing

## Marketing Major Courses (27 hours)

__ MK 3330 – Consumer Behavior	3
__ MK 3340 – Promotion	3
__ MK 3380 – Services Marketing	3
__ MK 4370 – Marketing Research	3
__ MK 4390 – Seminar in Marketing	3
__ Business Elective – BA 4320; IB 4352; FN 3330; MN 4370; QM 4370	3
__ Business Elective – BA 4320; IB 4352; FN 3330; MN 4370; QM 4370	3
__ Marketing Elective	3
__ Marketing Elective	3

## Proficiency in Information Technology and Information Literacy

\_\_ Business majors will fulfill the Information Technology Proficiency Requirement through the completion of courses within the Common Body of Business Knowledge.

All prerequisites must be completed with a **“C” or better (MT 1305, MT 1306, EC 2301, EC 2303, AC 2310, AC 2320).**

**All Business courses must be completed with a “C” or higher.**

# MARKETING

## Department Courses and Descriptions

### **Principles of Marketing (3)**

MK 3310

This is a survey course of the basic theory and practice of marketing. The course will cover the fundamental elements of marketing including: the marketing mix, market and buyer analysis, elements of marketing planning, selling, marketing communications, ethics, the application of technology and electronic media, and marketing management. (Fall, Spring)

### **Consumer Behavior (3)**

MK 3330

This course focuses on the analysis and interpretation of the behavior of individuals as buyers and consumers of goods and services. Students will learn to evaluate and interpret the psychological, economic, and socio-cultural factors and trends that influence purchase and consumption of goods and services. (Spring) Prerequisite: MK3310

### **Promotion (3)**

MK 3340

Course studies all elements of promotion and integrated marketing communications. Students gain knowledge of the major promotion and communication tools organizations use, how promotion is planned, budgeted, and used in the marketing program, and how to analyze promotion alternatives as they relate to the organization's marketing objectives and market segments served. (Fall) Prerequisite: MK3310

### **Retailing (3)**

MK 3350

Focuses on the operation and management of retail organizations. The course will develop student's knowledge and skills in the basic aspects of retailing, including; merchandising, product mix and inventory planning, market and demand analysis, and retail operations, including the application of technology to retailing. Prerequisite: MK3310

### **Selling & Sales Management (3)**

MK 3370

Studies selling and the management of sales organizations. Course objectives are to develop student's knowledge of personal selling, sales planning, and managing client relationships and to examine issues in sales management including compensation, sales development, sales force planning, and use of technology in sales management. (Spring) Prerequisite: MK3310

### **Services Marketing (3)**

MK 3380

Focuses on the marketing of services both as intangible products and as service component of physical goods. Students will focus on the differences in marketing services compared to physical products, management of the marketing mix for service marketing, creation and control of service quality, management of the Servicescape, and the use of technology in delivering service products. (Fall) Prerequisite: MK 3310

# MARKETING

## **Special Topics in Marketing (3)**

MK 4100

An in-depth study of a selected topic in marketing; specific subject may vary each time the course offered. Credit hours will be determined prior to the beginning of the course and will be contingent upon the planned class time and work load. MK 4100, 4200, 4300 is an elective and may be repeated when the specific subject changes. Prerequisite: MK3310 and consent of instructor.

## **Special Topics in Marketing (3)**

MK 4200

An in-depth study of a selected topic in marketing; specific subject may vary each time the course offered. Credit hours will be determined prior to the beginning of the course and will be contingent upon the planned class time and work load. MK 4100, 4200, 4300 is an elective and may be repeated when the specific subject changes. Prerequisite: MK3310 and consent of instructor.

## **Special Topics in Marketing (3)**

MK 4300

An in-depth study of a selected topic in marketing; specific subject may vary each time the course offered. Credit hours will be determined prior to the beginning of the course and will be contingent upon the planned class time and work load. MK 4100, 4200, 4300 is an elective and may be repeated when the specific subject changes. Prerequisite: MK3310 and consent of instructor.

## **Advertising Management (3)**

MK 4310

This course examines various marketing decisions such as pricing and inventory management and the impact of those decisions on a firm's profitability, liquidity, and asset utilization. The choice of distribution channels and channel structure is also examined and related to product attributes. (Spring) Prerequisites: MK3310, AC2310, and AC2320

## **Distribution and Pricing Decisions (3)**

MK 4320

This course examines various marketing decisions such as pricing and inventory management and the impact of those decisions on a firm's profitability, liquidity, and asset utilization. The choice of distribution channels and channel structure is also examined and related to product attributes. Prerequisites: MK3310, AC2310, AC 2320

## **Marketing Research (3)**

MK 4370

The course applies the methods of social science research to problems in marketing. Students will learn to formulate research topics, plan research, follow standards for ethical research practice, use both primary and secondary sources of data, collect and analyze data using common statistical software, and report research results. (Fall, Spring) Prerequisites: MK3310 and QM 3320

## **Internship in Marketing (3)**

MK 4375

Individual students will work in an approved marketing position at a business, non-profit, or public institution to gain experiential learning and apply their knowledge in a professional work setting.

# MARKETING

Prerequisites: Over all GPA of 2.8 (minimum), MK3310 and completion of or concurrent enrollment in of six of the required major hours. Pass/No Pass. (Fall, Spring, Summer)

## **Seminar in Marketing (3)**

MK 4390

MK4390 is an integrative cap stone course. Students will use a variety of learning tools [case analysis, simulations, marketing plans, projects and readings] to develop a comprehensive understanding of how marketing plans, strategy, and tactics are developed and integrated in the context of an organization.

Prerequisites: MK 3310, MK 3330, Senior standing required; course limited to marketing majors only.

# Other Programs



# ACADEMIC ENRICHMENT PROGRAM

## Academic Year

2011-2012

## Department Chair

Lisa Sellers [lsellers@stmarytx.edu](mailto:lsellers@stmarytx.edu)

## Description of Program/Major

The Academic Enrichment Program (AEP) is a one-time, fall-semester program designed for conditionally admitted, first-year students to enhance their skills in critical reading, reasoning, writing, and in algebra. As a condition of their admittance to St. Mary's, AEP students receive academic support services including faculty advising and mentoring and peer tutoring. They are required to take IS1300 (Interdisciplinary Studies) and MT0401 (Math Skills) in the fall and are limited in their first semester to these two courses plus up to three more three-hour courses and the freshman orientation course ND0101. AEP students must make a grade of C or higher in each course on their fall schedule and pass ND0101 to successfully complete the program. IS1300 and MT0401 cannot be dropped or repeated, nor can any course be dropped in the first semester without express permission of the AEP director. AEP students who fail to meet these standards and stipulations in the fall are subject to suspension from the spring semester by the AEP Evaluation Committee.

## Department Courses and Descriptions

### Personal and Academic Development (1)

ND 101

A required non-credit, Pass/No Pass course for all incoming freshmen. Skills for ease in transition to University life. Course designed to increase understanding of one self; develop interpersonal relationship skills; explore and clarify academic/career goals. Development of time management.

### Reading Comprehension and Critical Thinking (1)

ND 102

A required non-credit, P/NP course for incoming freshmen who have demonstrated need to develop higher-level reading comprehension and critical-thinking skills. Instruction aimed at developing the inferential and applied level comprehension skills necessary for understanding college level textbooks and critical thinking skills needed for evaluating and applying textbook content.

### Personal and Academic Success (1)

ND 103

A non-credit, P/NP course recommended for first-year students placed on academic probation. The course is designed to help students improve their academic standing through self understanding, goal setting, and study skill development.

### Intro to Bibliography (1)

ND 1101

An Individualized Instruction, one-hour, Pass/No Pass course. Skills necessary for effective use of the

# ACADEMIC ENRICHMENT PROGRAM

library and greater awareness of the basic concepts and principles used in the organization of information.

## **Career Planning-Goals Clarific (1)**

ND 1111

Focus on self assessment and career development; investigation of various stages in career planning and job search skills enhancement; development of an awareness of internship, employment, and/or graduate and professional school opportunities. Class will offer individualized career development plan options and use of electronic and print resources.

## **Univ Life: Personal and Academic Development (1)**

ND 1122

An orientation to University policies, procedures, organizations, and activities; development of an awareness of personal needs within the University; Pass/No Pass.

## **Academic Skills (3)**

ND 301

Enrichment or deficiency course which develops the following skills: use of textbooks; note taking; methods of taking tests; use of library; ability to concentrate.

## **Coll Preparatory Skills (3)**

ND 311

Course designed to improve vocabulary, reading rate, and comprehension to college level ability and preparation for taking standardized tests such as those required for entrance into colleges and universities.

# AIR FORCE

## Academic Year

2011-2012

## Department

Military Science

## Department Chair

Lt. Col. David Guarriello [dguarriello@stmarytx.edu](mailto:dguarriello@stmarytx.edu)

## Department Courses and Descriptions

### **Air Force Officership I (0)**

AF 1031

A survey course which discusses chief topics relating to the Air Force and national defense. It focuses on Air Force organizations, structure and mission; officership military customs and courtesies, and professionalism; and Air Force communication skills. (Lecture 1 hour; Lab 1 hour)

### **Air Force Officership II (0)**

AF 1041

A continuation of 1031, the course will examine Air Force professions; defense policy and strategy; and the missions of other military services. Students will also practice Air Force communication skills. (Lecture 1 hour; Lab 1 hour)

### **History of Air Powers I (0)**

AF 2031

The course focuses on factors contributing to change in the nature of military conflict, the development of air power from its earliest beginnings through two world wars, the evolution of air power doctrine and the role of technology, a history of air power employment in support of national objectives, and an assessment of communicative skills. (Lecture 1 hour; Lab 1 hour)

### **History of Air Powers II (0)**

AF 2041

A continuation of 2031, beginning with the role of air power from the 1960s to the present. Various events and trends in the history of air power are examined, especially when these provide significant examples of the impact of air power on strategic thought. Contemporary defense strategy, concepts, and doctrine are explored. Basic leadership principles are introduced. Includes practice in the use of effective Air Force communications. (Lecture 1 hour; Lab 1 hour)

### **Air Force Management & Leadership I (0)**

AF 3013

A seminar course which studies management fundamentals and communicative skills required of an Air Force junior officer. Case studies are used to examine Air Force management situations as a means of demonstrating and exercising practical application of the concepts being studied. Includes study and

# AIR FORCE

practice in the use of Air Force communicative skills. (Lecture 3 hours; Lab 1 hour)

## **Air Force Manage&Leadership II (0)**

AF 3023

A continuation of 3013, this seminar explores the meaning of professional responsibilities, leadership, and leadership ethics as applicable to the junior officer. Case studies are used to examine Air Force leadership situations as a means of demonstrating and exercising practical application of the concepts being studied. (Lecture 3 hours; Lab 1 hour)

## **Air Force Issues&Nat'l S Pol I (0)**

AF 4013

A study of national security forces in contemporary society. Includes an examination of the evolution of national security, key players and processes in formulation of security policy, national security policy issues, and studies on various regions of the world. Students are provided the opportunity to learn and practice leadership and communication skills necessary as future junior officers in the U.S. Air Force. (Lecture 3 hours; Lab 1 hour)

## **Air Force Issue&Nat'l S Pol II (0)**

AF 4023

Continuation of 4013, emphasizing leadership and communication. Included is an extensive analysis of officership, Air Force roles and missions, current Air Forces issues, and a study of the military justice system. (Lecture 3 hours; Lab 1 hour)

# CRITICAL STUDIES PROGRAM

## Academic Year

2011-2012

## Department Chair

Margaret Langford, Ph.D. [mlangford@stmarytx.edu](mailto:mlangford@stmarytx.edu)

## Description of Program/Major

The Critical Studies Program (CSP) is a fall-semester program designed for certain regularly admitted first-year students to enhance their skills in critical reading, reasoning, and writing. These students are identified for the CSP based upon the results of a critical thinking assessment administered during freshman orientation and are required to take IS1300 (Interdisciplinary Studies) in the fall of their freshman year.

## Department Courses and Descriptions

### Interdisciplinary Studies (3)

IS 1300

Interdisciplinary Studies is a three-credit-hour course that provides entering freshmen with opportunities to develop further their intellectual skills in areas essential to college success: critical thinking, reading, and writing. Typically, the instructors for this course are faculty members who teach in majors in each of the three undergraduate fields of study (i.e., sciences, humanities, and social sciences). Students will be able to improve their abilities to understand, analyze, and evaluate college-level material; to communicate effectively; to assess their own educational objectives; and to investigate their roles and responsibilities in the learning process. Strict adherence to the university's attendance policy and weekly participation in small-group study sessions led by peer tutors are required elements of the course. The course is offered only in the fall semester. A student may not drop the course or repeat it without express permission of the Critical Studies Program Director or Academic Enrichment Program Director, depending upon student's designation. *Enrollment is limited to students identified by the University as being required to take the course.*

# HONORS PROGRAM

## Academic Year

2011-2012

## Department

Honors Program

## Department Chair

Steve Calogero, Ph.D. [scalogero@stmarytx.edu](mailto:scalogero@stmarytx.edu)

## Description of Program/Major

### Mission

The Honors program serves a diverse community of students who have proven themselves especially talented, skilled and successful in their academic careers. Our mission is to attract such students to St. Mary's University and to provide them with a challenging and rewarding program—a program which (1) complements their professional development with courses in the Catholic intellectual and liberal arts traditions, (2) encourages them to engage critically in the self-conscious formation of their worldview, and (3) prepares them to succeed after graduation to make a positive difference in the world.

### Requirements

The Honors program is open only to students who have applied and been accepted into the program. Honors scholars complete 24 hours of course work and write a senior thesis or project. The courses are intended to be taken sequentially, with one course taken each semester for eight semesters. All but one of these courses satisfy a St. Mary's core curriculum requirement. The one exception is HO 4301, which is taken in conjunction with the Honor's senior thesis or project. Honors courses are intended to foster the learning community of Honors scholars. For this reason, students are expected to take their Honors courses in sequence with their class. Substitutions and exceptions may be considered only in special circumstances. Honors scholars must also maintain minimum GPA requirements to remain in the program. At the completion of the first year, scholars must have a 3.0 or higher, and at the end of subsequent semesters, students must maintain a 3.25 or higher.

## Department Courses and Descriptions

### Self and Meaning: Quest for Authenticity (3)

HO 1301

This course meets the requirement for SMC 1311 and is taken in the fall semester of the first year. The goals and objectives overlap with those of SMC 1311. The focus is on the theme of authenticity, an important line of philosophical investigation in late modern and contemporary philosophy. Investigations into authenticity concern the nature and quality of the relationship between the conscious self and the world one is situated in.

# HONORS PROGRAM

## **Focus of the Social Sciences (3)**

HO 1302

This course meets the requirement for SMC 1313 and is taken in the spring semester of the first year. The goals and objectives overlap with those of SMC 1313. The course serves as an introduction to the social sciences and the study of the social structures and institutions which shape the lives of individuals. The instructor will provide the course with a thematic focus appropriate to her or his discipline. Students should be introduced to the methods of social sciences while considering local, national and global issues. Common good and communitarian approaches should be considered.

## **Independent Study (3)**

HO 1399

In special cases, with the Director's permission and with approval of the appropriate undergraduate dean, an Independent Study course may substitute for one of the regular courses in the Honors Curriculum; such courses are given an HO designation. A maximum of two such courses may be included in a student's Honors curriculum.

## **The Practice of Citizenship (3)**

HO 2301

This course meets the requirement for SMC 1313 and is taken in the spring semester of the first year. The goals and objectives overlap with those of SMC 2302. The course serves as an introduction to the social sciences and the study of the social structures and institutions which shape the lives of individuals. The instructor will provide the course with a thematic focus appropriate to her or his discipline. Students should be introduced to the methods of social sciences while considering local, national and global issues. Common good and communitarian approaches should be considered.

## **Emergence of the Universe (3)**

HO 2302

This course meets the requirement for SMC 1312 and is taken in the spring semester of the second year. The goals and objectives overlap with those of SMC 1312. This course introduces students to the study of the natural sciences as (1) a method, (2) an ethical process and (3) an on-going quest for a comprehensive understanding of the physical, chemical and biological evolution of the universe.

## **Independent Study (3)**

HO 2399

In special cases, with the Director's permission and with approval of the appropriate undergraduate dean, an Independent Study course may substitute for one of the regular courses in the Honors Curriculum; such courses are given an HO designation. A maximum of two such courses may be included in a student's Honors curriculum.

## **Aesthetic Experience (3)**

HO 3301

This course meets the requirement for SMC 2304 and is taken in the fall semester of the third year. The goals and objectives overlap with those of SMC 2304. The focus is on fostering an understanding of the evolution of aesthetic expression in literature and the arts in Western culture and the ability to interpret individual works of literature and art through their historical context.

# HONORS PROGRAM

## **Religion: Experience and Tradition (3)**

HO 3302

This course meets the core requirement for a second theology course and is taken in the spring semester of the third year. The course explores the process by which human experience and the human quest for God give rise to religious tradition. The course may adopt an interdisciplinary approach in which the emergence of religious tradition is studied not only from a theological perspective but also from the point of view of other disciplines such as sociology and philosophy.

## **Independent Study (3)**

HO 3399

In special cases, with the Director's permission and with approval of the appropriate undergraduate dean, an Independent Study course may substitute for one of the regular courses in the Honors Curriculum; such courses are given an HO designation. A maximum of two such courses may be included in a student's Honors curriculum.

## **Senior Thesis or Project (3)**

HO 4301

This course is taken in the fall semester of the fourth year. Honors students must take this course or an equivalent course in their major. \* The course guides students in planning, researching, outlining and writing their senior thesis or project. Students also arrange to work with a faculty mentor whose academic discipline is appropriate for their topic. \*Engineering major do not take this course but instead take EG 4340W (or equivalent), as they begin work on their senior design project. Similarly, Honors students in other majors that require a senior course on research methods may, in consultation with the director, opt out of this course. However, all Honors students must complete their senior thesis or project.

## **Prospects for Community and Civilization (3)**

HO 4302

This course meets the requirement for SMC 4301 and is taken in the spring semester of the fourth year. The goals and objectives overlap with those of SMC 4301. The course is taught as a senior seminar intended to bring the Honors curriculum to a conclusion with the consideration of current problems and the possibility of solutions that can sustain cohesive communities and human flourishing. The intent is for Honors students to refocus their work as a learning community toward the future as they prepare for graduation. While interdisciplinary in scope, the specific content of the course will be appropriate to the instructor's discipline. This course does not require an extraordinary research and writing assignment, but should have graded requirements comparable to other Honors courses.

## **Independent Study (3)**

HO 4399

In special cases, with the Director's permission and with approval of the appropriate undergraduate dean, an Independent Study course may substitute for one of the regular courses in the Honors Curriculum; such courses are given an HO designation. A maximum of two such courses may be included in a student's Honors curriculum.



# HUMANITIES

## Academic Year

2011-2012

## Department Courses and Descriptions

### **Perspectives and Themes in SS (2)**

HU 2203

### **Persp/Themes Lit, Lang & Comm (3)**

HU 2305

Topics in historical or contemporary issues and themes in literature, language, or communication taught from an interdisciplinary perspective. Topics vary.

### **Perspectives and Themes in SS (1)**

HU 3103

### **Perspectives & Themes in the Fin (1)**

HU 3107

### **Perspe & Themes in His PL Th (2)**

HU 3200

### **Perspectives and Themes in SS (2)**

HU 3203

### **Perspectives & Themes in His, Phi (3)**

HU 3300

Topics in historical or contemporary issues and themes in the synoptic studies fields of history, philosophy, or theology taught from an inter-disciplinary perspective. Topics vary.

### **Perspectives and Themes in SS (3)**

HU 3303

Topics in historical or contemporary issues and themes in the social sciences taught from an interdisciplinary perspective. Topics vary.

### **Perspectives & Themes in Lit, La (3)**

HU 3305

Topics in historical or contemporary issues and themes in literature, language, or communication taught from an interdisciplinary perspective. Topics vary.

# HUMANITIES

## **Perspectives&Themes in the Fin (3)**

HU 3307

Topics in historical or contemporary issues and themes in the fine arts taught from an interdisciplinary perspective. Topics vary.

## **Internship (3)**

HU 5300

## **Internship (6)**

HU 5600

# LAW EARLY ADMISSION

## Academic Year

2011-2011

## Department

Pre-Law

## Department Chair

Milo Colton, Ph.D. [mcolton@stmarytx.edu](mailto:mcolton@stmarytx.edu)

## Description of Program/Major

### Nelson Wolff Law Early Admission Program

The Nelson Wolff Law Early Admission Program offers advantages to motivated, talented students who plan to attend law school and graduate in less time. The program allows qualified undergraduate students in certain degree programs to earn both a bachelor's degree and law degree in just six years, instead of the usual seven. To be eligible, a student must have a cumulative GPA of 3.8 or better and earn at least a 158 on the Law School Admission Test (LSAT).

St. Mary's students in the program enter law school after completing their third year of undergraduate study. Students' first year of law school will complete the final 30 hours of the undergraduate program, so that students complete both degrees in six years. Included undergraduate degree programs are [criminology](#), [english](#), [international relations](#), [philosophy](#), [political science](#), [sociology](#) and [speech communication](#).

The student will use the first 30 hours of law school credits to obtain a bachelor's degree from the University following the student's completion of the first year curriculum at the St. Mary's Law School. In the event that the student determines not to complete law school, the credit hours will be applied to the hours needed to obtain the student's undergraduate degree.

A student should make the decision to participate in the Early Admission Program as early as possible in order to stay on track with the Early Admissions Degree Plan as described in the Sample Plans below. The student should also inform the student's academic advisor and the Pre Law Advisor about the student's participation in the program.

In making the decision to participate, the student is advised that a score of 158 on the LSAT is a pretty high score. It would generally place the student in the top 25% of all LSAT test takers. If an applicant takes the LSAT more than one time, the "LSAT score" used for the Early Admission purposes shall be an average of all LSAT scores received by the applicant.

The student must meet the criteria stated above and make timely application to the St. Mary's Law School during the student's junior year. Please consult the [St. Mary's Law School Admissions website](#) for more details about the St. Mary's Law School admission procedures and requirements, including the character

# LAW EARLY ADMISSION

and fitness requirements for admission to the bar of the State of Texas.

Students who do not qualify for early admission to the St. Mary's Law School may continue the regular course of study for their degree and obtain their undergraduate degree upon completion of the regular coursework for that degree. Failure to qualify for early admission does not bar the student from applying for regular admission to the St. Mary's Law School.

## Financial Aid

Students are advised to consult with the Office of Financial Aid prior to applying to law school because the early admission to law school will affect the student's eligibility for financial aid available to undergraduate students. In some cases, however, this may be replaced by financial aid and scholarships available to law students.

## Sample Degree Plans

- [Criminology](#)
- [English](#)
- [International Relations](#)
- [Philosophy](#)
- [Political Science](#)
- [Sociology](#)
- [Speech Communication](#)

## Guaranteed Admission to St. Mary's Law School

An applicant who is a graduate of St. Mary's University will be admitted to the St. Mary's University School of Law if the applicant meets the following conditions:

- a. the applicant has received a bachelor's degree from St. Mary's University within three (3) years of the time the applicant will enroll in the School of Law; and
- b. the applicant would be eligible for admission to the bar of the State of Texas upon successful completion of the state bar examination; and
- c. the applicant has:
  - i. a cumulative grade point average of 3.0 or better and an LSAT score\* of 157 or better; or
  - ii. a cumulative grade point average of 3.20 or better and an LSAT score of 154-156; or
  - iii. a cumulative grade point average of 3.30 or better and an LSAT score of 151-153.

\*If an applicant takes the LSAT more than one time, the "LSAT score" used for automatic admission purposes shall be an average of all LSAT scores received by the applicant.

- An LSAT score of 157 would generally place the applicant in the top 30% of all LSAT test takers.
- An LSAT score of 154-156 would generally place the applicant in the top 40% of LSAT test takers.
- An LSAT score of 151-153 would generally place the applicant in the top 50% of all LSAT test takers.

# LAW EARLY ADMISSION

The student must meet the criteria stated above and make timely application to the St. Mary's Law School. The student may apply to the St. Mary's Law School at any time that the student has fewer than 18 credit hours of coursework remaining before graduation. Please consult the [St. Mary's Law School Admissions website](#) for more details about the St. Mary's Law School admission procedures and requirements, including the character and fitness requirements for admission to the bar of the State of Texas.

The University's strategic planning document, Vision 2012, called on the University to advance academic quality and innovation by considering combined and accelerated degree programs such as this one. The law school and the Graduate School also offer numerous [combined J.D. and master's degree programs](#).

For more information, please contact the Pre-Law Advisor:

**Milo Colton, Ph.D., J.D.**

Assistant Professor

Phone: (210) 436-3519

Email: [mcolton@stmarytx.edu](mailto:mcolton@stmarytx.edu)

# MILITARY SCIENCE

## Academic Year

2011-2012

## Department

Military Science

## Department Chair

Lt. Col. David Guarriello [dguarriello@stmarytx.edu](mailto:dguarriello@stmarytx.edu)

## Department Courses and Descriptions

### **Funda of Leadership&Management (1)**

MS 1101

Organization of the Army and ROTC; career opportunities for ROTC graduates and the military as a profession. Customs and traditions of the service. Development of leadership potential, First Aid, and Introduction to Map Reading.

### **Funda of Leadership&Management (1)**

MS 1102

Leadership studies of problems facing junior leaders in today's Army in non-combat situations. Effects of technological and sociological change on the military. Continuation of customs and traditions of the service. Development of leadership potential. Basic military skills training.

### **Self/Team Development (2)**

MS 2201

Learn/apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams of people. Develop skills in oral presentations, writing concisely, planning events, coordination of group efforts, advanced first aid, land navigation, and basic military tactics.

### **Applied Leadership and Managem (2)**

MS 2202

Military use of maps and terrain analysis with emphasis on practical experiences. Introduction to the leadership techniques required to conduct patrolling, offensive and defensive tactical missions.

### **Advanced Leadership and Manage (3)**

MS 3301

Performance oriented instruction in preparation for Advanced Camp. Analysis of psychological, physiological, and sociological factors which affect human behavior. Analysis of leadership and management processes. Techniques in planning, presenting and evaluating performance-oriented instruction. Prerequisites: MS 1101, 1102, 2201, and 2202, or permission of the Professor of Military Science. Business majors enrolled in the ROTC Advanced Course may receive credit for BA 3325W upon successful completion of MS 3301 with prior approval of the Dean, School of Business and Administration.

# MILITARY SCIENCE

## **Advanced Leadership & Managem** (3)

MS 3302

Performance oriented instruction in preparation for Advanced Camp. Development of the student's ability to express him/herself clearly and accurately, with emphasis on the analysis of military problems, and the preparation and delivery of logical solutions. Analysis of the leader's role in planning, directing and coordinating the efforts of individuals and small units in the execution of offensive and defensive tactical missions. Prerequisites: MS 3301 or permission of the Professor of Military Science.

## **History of World War II** (3)

MS 3348

Rise of the dictators and appeasement in Europe. Lapses in U.S. neutrality; Pearl Harbor and war on two fronts; build up to D-Day; Naval war in the Pacific; atomic conclusion with Japan.

## **US Military History** (3)

MS 3355

American Military Institutions, policies, experiences and traditions in peace and war from colonial times to the present. Emphasis will be on the relationship between the military and other institutions of American society. An analysis of basic military tactics, weapons systems, and equipment is conducted.

## **Seminar in Leadership & Mgmnt** (3)

MS 4301

Analysis of selected leadership and management problems. Responsibilities of the Commander and staff in the areas of administration, personnel, operations, and logistics. Introduction to military justice and the army training system. Prerequisites: MS 3302 or permission of the Professor of Military Science.

## **Seminar in Leadership&Managem** (3)

MS 4302

Analysis of selected leadership and management problems with a concentration on management problem analysis and decision making, planning and organizing, delegation and control, and interpersonal skills required for effective management. Seminars in the role of the officer in the conduct of personal affairs and ethics. Pre-requisite: MS 4301 or permission of the Professor of Military Science.

## **Adv Semi in Military Issue I** (3)

MS 5301

Analysis of various topics concerning the principles of war and the Airland Battle doctrine. Analysis and discussion of various topics pertaining to the duties and responsibilities of a 2nd Lieutenant. Additional course options are special projects and Ranger Challenge participation based on guidance and approval of the Professor of Military Science. Prerequisite: MS 4301 or 4302 or permission of the Professor of Military Science.

## **Adv Semi in Military Issue II** (3)

MS 5302

Analysis of various topics concerning the principles of war and the Airland Battle doctrine. Analysis and discussion of various topics pertaining to the duties and responsibilities of a 2nd Lieutenant. Additional course options are special projects and Ranger Challenge participation based on guidance and approval of

# MILITARY SCIENCE

the Professor of Military Science. Prerequisite: MS 4301 or 4302 or permission of the Professor of Military Science.



# NON-DEPARTMENTAL

## Academic Year

2011-2012

## Department Courses and Descriptions

### **Personal and Academic Development (1)**

ND 101

A required non-credit, Pass/No Pass course for all incoming freshmen. Skills for ease in transition to University life. Course designed to increase understanding of one self; develop interpersonal relationship skills; explore and clarify academic/career goals. Development of time management.

### **Reading Comprehension and Critical Thinking (1)**

ND 102

A required non-credit, P/NP course for incoming freshmen who have demonstrated need to develop higher-level reading comprehension and critical-thinking skills. Instruction aimed at developing the inferential and applied level comprehension skills necessary for understanding college level textbooks and critical thinking skills needed for evaluating and applying textbook content.

### **Personal and Academic Success (1)**

ND 103

A non-credit, P/NP course recommended for first-year students placed on academic probation. The course is designed to help students improve their academic standing through self understanding, goal setting, and study skill development.

### **Intro to Bibliography (1)**

ND 1101

An Individualized Instruction, one-hour, Pass/No Pass course. Skills necessary for effective use of the library and greater awareness of the basic concepts and principles used in the organization of information.

### **Career Planning-Goals Clarific (1)**

ND 1111

Focus on self assessment and career development; investigation of various stages in career planning and job search skills enhancement; development of an awareness of internship, employment, and/or graduate and professional school opportunities. Class will offer individualized career development plan options and use of electronic and print resources.

### **Univ Life: Personal and Academic Development (1)**

ND 1122

An orientation to University policies, procedures, organizations, and activities; development of an awareness of personal needs within the University; Pass/No Pass.

### **Academic Skills (3)**

ND 301

Enrichment or deficiency course which develops the following skills: use of textbooks; note taking; methods of taking tests; use of library; ability to concentrate.

# NON-DEPARTMENTAL

## **Coll Preparatory Skills (3)**

ND 311

Course designed to improve vocabulary, reading rate, and comprehension to college level ability and preparation for taking standardized tests such as those required for entrance into colleges and universities.

# SOCIAL SCIENCE

## **Academic Year**

2011-2012

## **Department**

Languages

## **Department Chair**

Eva P. Bueno, Ph.D. [ebueno@stmarytx.edu](mailto:ebueno@stmarytx.edu)

## **Department Courses and Descriptions**

**Essential Elements of Soc Sci (3)**

SS 3300

# WASHINGTON SEMESTER

## Academic Year

2011-2012

## Department

Washington Semester

## Department Chair

Milo Colton, Ph.D. [mcolton@stmarytx.edu](mailto:mcolton@stmarytx.edu)

## Department Courses and Descriptions

### Washington Semester Elective (3)

WS 3310

### Washington Sem Ind Res Project (3)

WS 3320

### Washington Semseter Internship (4)

WS 3400

### Washington Semester Seminar (4)

WS 3401

### Washington Semester Seminar (4)

WS 3402

### Washington Semester Elective (4)

WS 3410

### Washington Sem Ind Res Project (4)

WS 3420

School of  
Humanities and Social Science

# ANTHROPOLOGY

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Anthropology

## Department Chair

Grace Keyes, Ph.D. [gkeyes@stmarytx.edu](mailto:gkeyes@stmarytx.edu)

## Department Courses and Descriptions

### Cultural Anthropology (3)

AN 2331

An examination of the unity and diversity of cultural patterns in both simple and complex societies, including consideration of their political, intellectual, technical, aesthetic, and other social institutions in cross-cultural perspective.

### Introduction to Archaeology (3)

AN 2332

Introduction to scientific study of past human life through material remains. Insights into the evolution of civilization, past cultural, economic, and organizational systems, etc.

### Special Topics in Anthropology (3)

AN 3300

Topics vary from semester to semester. AN 3300 may be retaken for additional credit when a different topic is offered.

### North American Indians (3)

AN 3301

Survey of Indians from the time of European contact through the present, emphasizing the situation of contemporary Native Americans.

### Ancient Civilization Americas (3)

AN 3302

Survey of prehistoric civilizations of the Americas, particularly the Aztecs, Mayas, and Incas. Deals with

# ANTHROPOLOGY

their development and histories, political and economic structures, religion, etc.

## **Human Origins (3)**

AN 3303

This course covers some of the major components of biological anthropology with a major focus on human evolution. It presents scientific data tracing the emergence of humans as a culture-bearing species. It examines evolutionary processes, taxonomic principles, the fossil record and the early developments of human culture.

## **Qualitative Research Methods (3)**

AN 3306

An introduction to the methods used to conduct qualitative research in natural social settings. An examination of the methods of ethnography, participant observation/non-participant observation, focus group, interview, and use of documentary sources will be included. Students may have the opportunity to engage in hands-on research. Additional topics include data coding, data analysis, and research ethics. Prerequisite: Junior standing and have completed nine hours of psychology or sociology related courses.

## **Sociology of Religion (3)**

AN 3308

An introduction to basic issues in the sociology of religion, including alternative definitions of religion, the relationship of religion to economic, political and other social institutions, and the influence of religion on personal development, social order, conflict, and change. Religious institutions are viewed in historical and cross-cultural perspective.

## **Medical Anthropology (3)**

AN 3309

This course examines a variety of issues related to health, illness, and health care from an anthropological perspective. It explores how people in various cultures, both Western and non-Western deal with illness, disease, birth, death, curing and maintaining health.

## **Language and Culture (3)**

AN 3312

Examines the dynamics between language and culture in cross-cultural perspective. It explores the functions and use of language in society, the symbolic nature of language, theories regarding the evolution of human language, linguistic change, and how humans use language in social contexts.

## **Social Stratification (3)**

AN 3320

An analysis of social stratification utilizing social class as the unit of study. The course will focus on the structure of social classes in the U.S. as a major factor influencing individual and group life chances with regards to education, crime, health, and disease, world views and life styles.

## **Criminology (3)**

AN 3325

# ANTHROPOLOGY

## **Social Organization & Social Sys (3)**

AN 3342

An analysis of human behavior in organizations viewed as social systems. Topics include formal and informal structures, corporate cultures, organizational goals and problems, communication, interpersonal relations, adaptation, and change.

## **The Family (3)**

AN 3343

A study of the family as an institution and social system, including discussions of dating and mate selection, premarital and extramarital sex, birth control, abortion, illegitimacy, family planning, spousal relationships, interracial and interfaith marriages, socialization, social control, and change.

## **Social Psychology (3)**

AN 3351

Theories and research on social factors in behavior, including such topics as attitudes, perception, leadership, and attraction.

## **Internship in Anthropology (3)**

AN 3355

Experiential education related to the theoretical and research topics studied in sociology. The experience consists of pre-professional work in social agencies, community programs, and other appropriate settings approved by the department. Junior/Senior status and at least 9 hours of upper-division sociology are prerequisites. Involves written sociological analysis. 3 to 6 semester hours of credit, with a maximum of 3 hours per semester.

## **Urban Sociology (3)**

AN 3361

An analysis of cities, their historical development and social organization. Topics include urbanization in developed and developing societies, urban stratification and lifestyles, and urban, metropolitan and regional planning.

## **Demography and Ecology (3)**

AN 3362

The demographic study of human populations, including fertility, mortality, migration, age, sex, class composition. The ecological study of relations between human societies and their environments. Analysis of environmental problems and proposed solutions.

## **Minority Relations (3)**

AN 3371

A study of ethnic, religious and racial relations in the U.S. and other countries. Topics include power relationships, prejudice, discrimination, ethnic stratification, migration, assimilation and pluralism. Minorities to be considered include Blacks, Mexican-Americans and Native Americans.

## **Introductory Statistics (3)**

AN 3381

An introduction to descriptive and inferential statistics designed for the student of behavioral sciences.



# ANTHROPOLOGY

## **Social Gerontology (3)**

AN 4300

A study of the aging process, with emphasis on its social, cultural and psychological aspects. Topics include the effects of aging on personality, intelligence, sexuality and maturity; family relationships; the demography of aging; and the relevance of gerontology theory and research for social policy.

## **Death and Dying (3)**

AN 4305

A holistic treatment of the dying person and his/her environment. Topics include cross-cultural differences in grief and mourning behaviors, psychological process of the terminally ill, funeral practices, hospice alternatives, and ethical problems related to the medical extension of life.

# ARABIC

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Languages

## Department Chair

Eva P. Bueno, Ph.D. [ebueno@stmarytx.edu](mailto:ebueno@stmarytx.edu)

## Department Courses and Descriptions

### Introduction to Arabic I (3)

AB 1311

Essentials of Arabic. An introduction to the four phases of languages learning: understanding, reading, speaking, and writing Arabic and an introduction to Arabic culture. The course consists of two semesters. A laboratory fee is charged. Enrollment restricted to students with no prior experience in Arabic. Students who have been introduced to Arabic at home, or in high school, should take AB 2311 and 2312. AB 1311 is a prerequisite for AB 1312. Permission of the Department Chair is required for entry into the course.

### Introduction to Arabic II (3)

AB 1312

Essentials of Arabic. An introduction to the four phases of languages learning: understanding, reading, speaking, and writing Arabic and an introduction to Arabic culture. The course consists of two semesters. A laboratory fee is charged. Enrollment restricted to students with no prior experience in Arabic. Students who have been introduced to Arabic at home, or in high school, should take AB 2311 and 2312. AB 1311 is a prerequisite for AB 1312. Permission of the Department Chair is required for entry into the course.

### Second Year Arabic I (3)

AB 2311

Arabic language review applied to practice. Course includes practice in comprehension of spoken Arabic and guided speaking, reading, and writing activities leading to self-expression in the Arabic language. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. AB 2311 is a prerequisite for AB 2312.

### Second Year Arabic II (3)

# ARABIC

## AB 2312

Arabic language review applied to practice. Course includes practice in comprehension of spoken Arabic and guided speaking, reading, and writing activities leading to self-expression in the Arabic language.

The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. AB 2311 is a prerequisite for AB 2312.

# ART EDUCATION

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Art

## Department Chair

Brian St. John [bstjohn@stmarytx.edu](mailto:bstjohn@stmarytx.edu)

## Description of Program/Major

Students at St. Mary's take courses in art for many reasons, including to fulfill the Fine Arts requirements of the Core Curriculum, to obtain a minor in art, to obtain a Texas Education Agency-certified second teaching field in elementary or secondary education, or simply as an elective.

In its educational role, the department offers historical, theoretical, and applied classes which explore the varied artistic traditions of the past and present. The three disciplines within the department are combined in a collaborative course that introduces Western civilization's cultural heritage to all undergraduate students.

St. Mary's University is committed to preparing teachers for a future of making a difference in young people's lives. Our elementary and secondary teacher certification programs integrate rigorous academic training and supervised field experience with a well-rounded education, providing students with the tools they need to be effective educators.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3

# ART EDUCATION

SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# ART EDUCATION

St. Mary's University

BA in Art Education (AR) with Teacher Certification Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301H Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 2304 Foundation of Practice: Literature	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req History <sup>3</sup>	3
—	SSC Req Speech <sup>1</sup>	3	—	SSC Req Mathematics <sup>8</sup>	3
—	AR 1301 Drawing or AR 1311 Design Fundamentals	3	—	AR 1301 Drawing or AR 1312 Color Theory	3
—	ND 0101 Personal & Academic Development	0			
Total		15	Total		15
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 1314 Foundations of Reflection: God	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	SSC Req Theology <sup>7</sup>	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	AR 2321 Painting I	3
—	AR 2301 3-D Design or AR 3331 Sculpture	3	—	AR 2361 History of Western Art I or AR 2362 History of Western Art II Elective	3
Total		15	Total		18
Third Year Courses					
—	SSC Req Fine Arts <sup>4</sup>	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SSC Req Literature <sup>5</sup>	3	—	SSC Req Science <sup>9</sup>	3
—	AR 3392 Photography	3	—	AR 2362 History of Western Art II or AR 2361 History of Western Art I	3
—	ED 3301 The American School	3	—	ED 3361 Adolescent Development & Learning	3
—	Elective	3	—	ED elective	3
Total		15	Total		15
Fourth Year Courses					
—	AR 3341 Art Problems	3	—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
—	AR 3381 Art Fundamentals	3	—	ED 4388 Professional Development Seminar - Secondary	3
—	AR 3351 Printmaking	3	—	ED 4689 Student Teaching in Secondary School	3
—	ED 3350 Teaching Reading in Content Area	3			
—	ED 3362 Secondary Teaching Methods	3			
Total		15	Total		12

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCritical Thinking Test with 250 or higher, or CS 1300.

# ART EDUCATION

St. Mary's University  
BA in Art Education (AR) with Teacher Certification Degree Plan - 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301H – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – DM, MU	3
__ Literature – EN 23XX	3

## **Professional Development Courses (24 hours)**

__ ED 3301 – The American School	3
__ ED 3361 – Adolescent Development and Learning in School Setting	3
__ ED 3362 – Secondary Teaching Methods	3
__ ED 3350 – Teaching Reading in the Content Areas	3
__ ED 4388 – Professional Development Seminar - Secondary	3
__ ED 4689 – Student Teaching in Secondary School	3
__ ED XXXX – Education elective	3

## **Art Major Courses (30 hours)**

__ AR 1301 – Drawing I	3
__ AR 1311 – Design Fundamentals OR AR 1312 Color Theory	3
__ AR 2301 – 3-D Design OR AR 3331 Sculpture	3
__ AR 2321 – Painting I	3
__ AR 2361 – History of Western Art I	3
__ AR 2362 – History of Western Art II	3
__ AR 3351 – Printmaking	3
__ AR 3341 – Art Problems	3
__ AR 3381 – Art Fundamentals	3
__ AR 3392 – Photography	3

# ART EDUCATION

## Electives (6 hours)

\_\_\_ Electives – An elective can be any courses taken from any college level course in any discipline.

6

## Proficiency in Information Technology and Information Literacy

\_\_\_ For this major, this requirement will be fulfilled by passing the iCritical Thinking Test with 250 or higher, or CS 1300.



# ART EDUCATION

## Department Courses and Descriptions

### **Drawing I (3)**

AR 1301

Perspective and free hand drawing investigating various media and techniques.

### **Drawing II (3)**

AR 1302

Continuation of Drawing I. Further investigation of drawing as a developmental process in perceptual and conceptual skills.

### **Design Fundamentals (3)**

AR 1311

Introduction to the elements and principles of art using line, color, form, texture, and shape with emphasis in two-dimensional design.

### **Color Theory (3)**

AR 1312

Continuation of Drawing I. Further investigation of drawing as a developmental process in perceptual and conceptual skills.

### **3-D Design (3)**

AR 2301

An introduction to sculptural form: fundamentals of art with emphasis in three dimensional problems including the use of paper, clay, plaster, metal, and wood.

### **Painting I (3)**

AR 2321

Techniques, fundamental color theories, and composition. Principal medium is oil or acrylic. Recommended prerequisite: AR 1301 (Drawing I) or AR 1311 (Design Fundamentals).

### **History of Western Art I (3)**

AR 2361

Principal periods in the history of Western art from the paleolithic period to the Gothic.

### **History of Western Art II (3)**

AR 2362

Principal periods in the history of Western art from the Renaissance to the present.

### **Sculpture (3)**

AR 3331

Structural form using options in clay techniques.

### **Art Problems (3)**

AR 3341

Allows option of working in media of student's choice and encourages exploration of individual ex

# ART EDUCATION

pression. Prerequisite: 9 hours of art and approval of faculty.

## **Printmaking (3)**

AR 3351

Exploration and application of basic techniques of printmaking, which includes processes in producing multiples of the original image.

## **History of Art Applied (3)**

AR 3381

This course is a survey of painting, sculpture, architecture and other arts from prehistoric times to the modern world. Students will be introduced to the essential elements of visual art and to experiences in creative two and three dimensional media for children.

## **Film, Fiction, and Drama (3)**

AR 3391

Analysis of Linear vs. Visual Composition Analysis of motion picture productions of at least two major plays, two short stories, two novels of different periods. Parallel readings, viewings, lectures, discussions, themes. Rudimentary cinematic grammar and rhetoric.

## **Special Topics in Art (1)**

AR 4191

Independent study or seminar, arranged with staff. Consent of departmental faculty required. May be repeated for up to six hours of credit.

## **Special Topics in Art (2)**

AR 4291

Independent study or seminar, arranged with staff. Consent of departmental faculty required. May be repeated for up to six hours of credit.

## **Painting II (3)**

AR 4322

Composition, surface quality emphasis, and experimentation in acrylic or oil medium. AR 2321

## **Special Topics in Art (3)**

AR 4391

Independent study or seminar, arranged with staff. Consent of departmental faculty required. May be repeated for up to six hours of credit.

## **Special Topics in Art (6)**

AR 4691

Independent study or seminar, arranged with staff. Consent of departmental faculty required. May be repeated for up to six hours of credit.

# COUNSELING

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Counseling

## Department Chair

Dana Comstock, Ph.D. [dcomstock@stmarytx.edu](mailto:dcomstock@stmarytx.edu)

## Department Courses and Descriptions

### Substance Abuse (3)

CN 3300

Introduction to chemical dependency and the factors associated with the abusive use of chemicals; factors associated with helping the chemically dependent person.

### Introduction to Human Services (3)

CN 3301

An overview of the historical, philosophical, and legislative factors relating to human services programming; the role of human services in society, the role of the counselor in the human service process.

### Psycho-Social Factors Related to Substance Abuse (3)

CN 3302

Personality, emotional, and social factors related to substance use, misuse, and abuse; psychological dependence.

### Physical and Medical Aspects of Substance Abuse (3)

CN 3303

The effects of chemical dependency on the body; physical dependence progression in physical changes.

### Helping and Human Relations (3)

CN 3304

Introduction to helping and human relations skills; fundamentals of effective communication, including listening and discrimination skills; dynamics of the helping process.

# COUNSELING

## **Ethical Aspects of Human Services (3)**

CN 3305

Ethical issues involved in the provision of human services; values clarification.

## **Special Topics (3)**

CN 3308

Specific areas and issues of concern in the field of counseling and human services. (Pass/No Pass only)

## **The Family (3)**

CN 3343

Scientific study of family as institution and social system. Dating. Mate selection. Premarital, extramarital sex. Birth control. Abortion, illegitimacy. Family planning. Spousal relationships. Interracial, interfaith marriages. Values. Socialization. Social control. Change. Prerequisite: SC 1311.

## **Group Dynamics (3)**

CN 3352

Structure, functions, patterns, processes of small groups from scientific perspective. Social-psychological approaches. Practical implications for education, counseling, social work, business, law. Prerequisite: SC 1311.

## **Field Placement Human Services (3)**

CN 4320

Field based experience under supervision in an approved human service agency. Will include regular meetings with an on-campus coordinator. Junior or senior status required; 3-6 semester hours with approval of field placement coordinator. (Pass/No Pass only)

## **Field Placement in Human Services (6)**

CN 4620

Field based experience under supervision in an approved human service agency. Will include regular meetings with an on-campus coordinator. Junior or senior status required; 3-6 semester hours with approval of field placement coordinator. (Pass/No Pass only)

## **Field Placement Human Services (3)**

CN 4620

Field based experience under supervision in an approved human service agency. Will include regular meetings with an on-campus coordinator. Junior or senior status required; 3-6 semester hours with approval of field placement coordinator. (Pass/NoPass only)

# CRIMINAL JUSTICE

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Criminal Justice and Criminology

## Department Chair

Armando J. Abney, Ph.D. [aabney@stmarytx.edu](mailto:aabney@stmarytx.edu)

## Description of Program/Major

Criminal justice professionals and criminologists have assumed a central role in researching, formulating, implementing and evaluating public policy designed to control crime. Crime transcends all geographical, social and economic boundaries, affecting all countries and demographic strata.

Controlling crime requires knowledge of individual and social factors that lead to criminal behavior, and strategies and practices to control crime. Criminal justice is the study of the administration, organization, goals, processes, practices, roles, philosophies and histories of organizations created to prevent and control crime and delinquency.

These include the police and law enforcement agencies, courts, community-based corrections and correctional institutions. The criminal justice program at St. Mary's University focuses on the integration of liberal studies with the professional preparation of the student.

The criminal justice degree prepares graduates for a variety of employment opportunities in the private and public sectors. The program aims to develop students' critical thinking, problem solving, communications, and technology skills that will help them excel in the criminal justice field.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any*

# CRIMINAL JUSTICE

*order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# CRIMINAL JUSTICE

St. Mary's University

BA in Criminal Justice (CJ) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
	Fall	Hr		Spring	Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SSC Req Speech <sup>1</sup>	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Mathematics <sup>8</sup>	3
—	SSC Req Fine Arts <sup>4</sup>	3	—	SSC Req Literature <sup>5</sup>	3
—	SSC Req History <sup>3</sup>	3	—	CJ 2300 Intro to Criminal Justice	3
—	ND 0101 Personal & Academic Development	0			
	Total	15		Total	15
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 1314 Foundations of Reflection: God	3	—	SMC 2304 Foundation of Practice: Literature	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	CJ 2314 Substantive Criminal Law	3	—	CJ 2304 Criminal Justice Administration	3
—	CJ 2350 Ethics in Criminal Justice	3	—	Elective (SC 1311 recommended)	3
	Total	15		Total	15
Third Year Courses					
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SSC Req Science <sup>9</sup>	3	—	SSC Req Theology <sup>7</sup>	3
—	CJ 3303 International Justice System	3	—	CJ 3331 Computer Tech in Criminal Justice	3
—	CJ Elective *	3	—	CJ 3330 Research Methods in Criminal Justice	3
—	CJ Elective *	3	—	CJ Elective *	3
	Total	15		Total	15
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	CJ Elective *	3
—	CJ 4301 Legal Topics in Criminal Justice	3	—	Elective**	3
—	CJ Elective (CJ 4303 Internship in CJ advised)	3	—	Elective**	3
—	CJ Elective *	3	—	Elective**	3
—	CJ Elective *	3	—		
	Total	15		Total	15

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition **with a "C" or better**: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

\*CJ elective can be any non required Criminal Justice course

\*\*An elective can be any course taken from any discipline but we recommend SC 1311 or courses from SC, CR, PO, EC, & IR, or any minor.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing CJ 3330 or CJ 3331.

# CRIMINAL JUSTICE

St. Mary's University  
BA in Criminal Justice (CJ) Degree Plan - 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Criminal Justice Major Courses (45 hours)**

__ CJ 2300 – Introduction to Criminal Justice	3
__ CJ 2304 – Criminal Justice Administration	3
__ CJ 2314 – Substantive Criminal Law	3
__ CJ 2350 – Ethics in Criminal Justice	3
__ CJ 3303 – International Justice System	3
__ CJ 3330 – Research Methods in Criminal Justice	3
__ CJ 3331 – Computer Technology in Criminal Justice	3
__ CJ 4301 – Legal Topics in Criminal Justice	3
__ CJ Electives - CJ elective can be any non required Criminal Justice course (CJ 4303 recommended)	21

## **Electives (15 hours)**

__ Electives - An elective can be any course taken from any discipline but we recommend SC 1311 or courses from SC, CR, PO, EC, and IR, or any minor.	15
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing CJ 3330 or CJ 3331.



# CRIMINAL JUSTICE

## Department Courses and Descriptions

### **Intro to Criminal Justice (3)**

CJ 2300

Survey of the philosophy, history, and practices of the American criminal justice system. Emphasis is given to current needs, ethics, duties, and diverse opportunities in various local, state, and federal agencies. This course is a prerequisite for all Criminal Justice courses.

### **Criminal Justice Admin (3)**

CJ 2304

Study of the nature, organizational structures and administration of criminal justice agencies.

### **Police Role in Crime&Delinquen (3)**

CJ 2308

Study of police strategies and practices in the prevention and control of crime among juveniles.

### **Criminal Procdure and Evidence (3)**

CJ 2310

Study of legal rules governing the procedures for gathering and admitting criminal evidence in court proceedings.

### **Police-Community Relations (3)**

CJ 2312

Study of the role of the police officer in achieving and maintaining positive relations with the general public.

### **Substantive Criminal Law (3)**

CJ 2314

Jurisprudential philosophy and historical development of common law and statutory crimes; classification of crimes; elements of specific crimes, defenses and penalties.

### **Ethics in Criminal Justice (3)**

CJ 2350

Study of ethical issues confronted by the criminal justice profession.

### **Topics in Criminal Justice (3)**

CJ 2399

Topics in Criminal Justice (for elective credit only)

### **Adjudication of Social Issues (3)**

CJ 3300

Issues vary from semester to semester as our society faces new developments and challenges. Examples of offerings include sanctity of life, euthanasia, AIDS, environment, genetic research, obscenity, privacy, conscience, consumer rights, the family, suicide, religious freedom, freedom of the press, victimless crimes, family abuse, affirmative action and reverse discrimination, equality, and justice.

# CRIMINAL JUSTICE

## **Process & Policy Amer Courts (3)**

CJ 3302

Study of the structure, organization, and procedures of federal and state courts.

## **International Justice system (3)**

CJ 3303

A cross-national study of crime and crime control.

## **Law and Society (3)**

CJ 3305

Study of the interaction between the U.S. legal and social cultures.

## **Qualitative Research Methods (3)**

CJ 3306

An introduction to the methods used to conduct qualitative research in natural social settings. An examination of the methods of ethnography, participant observation/non-participant observation, focus group, interview, and use of documentary sources included. Students may have the opportunity to engage in hands-on research. Additional topics include data coding, data analysis, and research ethics.

Prerequisites: Junior standing

## **Issues in Policing (3)**

CJ 3307

Study of current issues affecting police management and administration.

## **Corrections in the Community (3)**

CJ 3310

Study of probation, parole, and other community-reintegration procedures.

## **Correctional Counsel&Treatment (3)**

CJ 3312

Study of the scope and purposes of correctional treatment and techniques of correctional counseling.

## **Correctional Institutions (3)**

CJ 3313

Study of the philosophy, organizational structure and practices of correctional institutions.

## **Substance Abuse (3)**

CJ 3314

Introduction to chemical dependency and the factors associated with the abusive use of chemicals; factors associated with helping the chemically dependent person.

## **Social Stratification (3)**

CJ 3320

An analysis of social stratification utilizing social class as the unit of study. The course will focus on the structure of social classes in the U.S. as a major factor influencing individual and group life chances with regards to education, crime, health, and disease, world views and life styles.

# CRIMINAL JUSTICE

## **Victimology (3)**

CJ 3323

Study of crime victims and their interaction with offenders, criminal justice officials, and the public.

## **Juvenile Delinquency (3)**

CJ 3324

An examination of juvenile delinquency in the U.S.: its nature, extent, causes, effects, prevention and rehabilitation. Sociological approaches to delinquency are emphasized, but psychological and legal approaches are also considered.

## **Criminology (3)**

CJ 3325

An overview of the study of crime and the development of criminology. The nature, extent, causes, effects, rehabilitation and prevention of crime are examined from a sociological perspective. Psychological, legal, and philosophical approaches to crime are also considered.

## **Interviewing Techniques (3)**

CJ 3326

An introduction to principles, strategies, techniques and practical skills involved in interviewing. Major types of interviews are considered, including information-gathering, information-providing, and counseling. Personal involvement and experience in conducting and evaluating actual interviews.

## **Mediation Techniques (3)**

CJ 3327

Study of methods and techniques of conflict resolution, communications, mediation, and diversity awareness. Upon completion of CJ 3327, students wishing to receive a Certificate of Training as a mediator must complete either CJ 4303 (Internship) or 100 hours of volunteer service as a mediator in an appropriate setting approved by supervising faculty.

## **Research Methods Crim Justice (3)**

CJ 3330

Study of methods and techniques of social research with an emphasis on criminology and criminal justice.

## **Computer Tech in Criminal Just (3)**

CJ 3331

Integrating computer application and research methods. Prerequisite: CJ 3330 or concurrently enrolled in CJ 3330.

## **Social Psychology (3)**

CJ 3351

Theories and research on social factors in behavior, including such topics as attitudes, perception, leadership, and attraction.

## **Urban Sociology (3)**

CJ 3361

# CRIMINAL JUSTICE

An analysis of cities, their historical development and social organization. Topics include urbanization in developed and developing societies, urban stratification and lifestyles, and urban, metropolitan and regional planning.

## **Demography and Ecology (3)**

CJ 3362

The demographic study of human populations, including fertility, mortality, migration, age, sex, class composition. The ecological study of relations between human societies and their environments. Analysis of environmental problems and proposed solutions.

## **Minority Relations (3)**

CJ 3371

A study of ethnic, religious and racial relations in the U.S. and other countries. Topics include power relationships, prejudice, discrimination, ethnic stratification, migration, assimilation and pluralism. Minorities to be considered include Blacks, Mexican-Americans and Native Americans.

## **Legal Topics in Crim Justice (3)**

CJ 4301

Study of a special topic and the law. Emphasis given to legal reasoning, of case briefing, historical evolution of the law, and critical thinking. Prerequisite: CJ 3300 or instructor approval.

## **Senior Seminar in Criminal Jus (3)**

CJ 4302

Capstone course designed to evaluate knowledge and skills acquired by criminal justice and criminology students about their discipline. Students will design, analyze, write, and present a research project. The student must demonstrate knowledge of computer applications to research methodologies. In addition, the student must demonstrate critical thinking, problem-solving, oral and written communication skills, and the ability to effectively work within groups.

## **Internship in Crimi Just&Crimi (3)**

CJ 4303

The student must acquire a minimum of 160 hours of practical experience in an approved criminal justice or social service agency. Unless an exception is made, this course is to be taken between the junior and senior years.

## **Independent Study in Criminal Justice (3)**

CJ 4304

Based on the student's professional and academic interest, the instructor will design an individualized reading course for the student.

## **Special Topics in Criminal Jus (3)**

CJ 4305

Selected topics in criminal justice or criminology.

## **Constitutional Law II (3)**

CJ 4325

# CRIMINAL JUSTICE

Analyses of the constitutional system, including political and civil rights such as speech, press, assembly, religion, race discrimination, criminal procedure, and privacy.

# CRIMINOLOGY

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Criminal Justice and Criminology

## Department Chair

Armando J. Abney, Ph.D. [aabney@stmarytx.edu](mailto:aabney@stmarytx.edu)

## Description of Program/Major

Criminal justice professionals and criminologists have assumed a central role in researching, formulating, implementing and evaluating public policy designed to control crime. Crime transcends all geographical, social and economic boundaries, affecting all countries and demographic strata.

Controlling crime requires knowledge of individual and social factors that lead to criminal behavior, and strategies and practices to control crime.

Criminology is the study of the causes, prevention and treatment of criminal behavior, and the social and environmental factors that are associated with crime in society.

Criminology explores the relationship between the field of criminology, criminal justice organizations, and social service agencies whose responsibility it is to control crime and protect society. Students are introduced to the roles of the offender, victim and society in exploring the reasons why criminal behavior occurs.

The criminology program at St. Mary's University integrates liberal studies with professional preparation. Individuals who are interested in pursuing a career in the research or evaluation of crime control and crime prevention programs should consider criminology as a major.

## Degree Requirements

### Core Curriculum (SMC)

St. Mary's University Core (30 Hours)

# CRIMINOLOGY

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# CRIMINOLOGY

St. Mary's University

BA in Criminology (CR) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SSC Req Speech <sup>1</sup>	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Mathematics <sup>8</sup>	3
—	SSC Req History <sup>3</sup>	3	—	SSC Req Literature <sup>5</sup>	3
—	SSC Req Fine Arts <sup>4</sup>	3	—	CR 1311 Introductory Sociology	3
—	ND 0101 Personal & Academic Development	0			
Total		15	Total		15
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 1314 Foundations of Reflection: God	3	—	SMC 2304 Foundation of Practice: Literature	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	Elective (CJ 2300 recommended)	3	—	CR Elective *	3
—	CR Elective *	3	—	CR Elective *	3
Total		15	Total		15
Third Year Courses					
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SSC Req Science <sup>9</sup>	3	—	SSC Req Theology <sup>7</sup>	3
—	CR 3325 Criminology	3	—	CR 3331 Computer Tech in Criminal Justice	3
—	CR 3323 Victimology	3	—	CR 3320 Social Stratification	3
—	CR Elective *	3	—	CR 3324 Juvenile Delinquency	3
Total		15	Total		15
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	CR 3330 Research Methods in Criminal Justice	3
—	CR Elective *	3	—	CR Elective *	3
—	CR Elective (CR 4303 Internship in CJ advised)	3	—	Elective**	3
—	Elective **	3	—	Elective**	3
—	Elective **	3			
Total		15	Total		15

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

\*CR elective can be any non required Criminology course

\*\* Electives - An elective can be any courses taken from any discipline but we recommend CJ 2300 or courses from SC, CR, PO, EC, & IR or any minor.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing CJ 3330 or CJ 3331.



# CRIMINOLOGY

St. Mary's University  
BA in Criminology (CR) Degree Plan - 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric (grade of <b>"C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Criminology Major Courses (45 hours)**

__ CR 1311 – Introductory Sociology	3
__ CR 3320 – Social Stratification	3
__ CR 3323 – Victimology	3
__ CR 3324 – Juvenile Delinquency	3
__ CR 3325 – Criminology	3
__ CR 3330 – Research Methods in Criminal Justice	3
__ CR 3331 – Computer Tech in Criminal Justice	3
__ CR Electives – CR elective can be any non required Criminology course.	24

## **Electives (15 hours)**

__ Electives – An elective can be any courses taken from any discipline but we recommend CJ 2300 or courses from SC, CR, PO, EC, & IR or any minor.	15
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing CR 3330 or CR 3331.

# CRIMINOLOGY

## Department Courses and Descriptions

### **Introductory Sociology (3)**

CR 1311

An introduction to the scope and methods of sociology, emphasizing the concepts of social structure, organization, institution, culture and socialization, and including analyses of primary and secondary groups, sex roles, social control, stratification, minorities, collective behavior, and population dynamics. Prerequisite for all courses in the Criminology program.

### **Police Role in Crime&Delinquen (3)**

CR 2308

Study of police strategies and practices in the prevention and control of crime among juveniles.

### **Topics in Criminal Justice (3)**

CR 2399

Topics in Criminal Justice (for elective credit only)

### **International Justice system (3)**

CR 3303

A cross-national study of crime and crime control.

### **Law and Society (3)**

CR 3305

Study of the interaction between the U.S. legal and social cultures.

### **Qualitative Research Methods (3)**

CR 3306

An introduction to the methods used to conduct qualitative research in natural social settings. An examination of the methods of ethnography, participant observation/non-participant observation, focus group, interview, and use of documentary sources included. Students may have the opportunity to engage in hands-on research. Additional topics include data coding, data analysis, and research ethics.

Prerequisites: Junior standing

### **Corrections in the Community (3)**

CR 3310

Study of probation, parole, and other community-reintegration procedures.

### **Correctional Counsel&Treatment (3)**

CR 3312

Study of the scope and purposes of correctional treatment and techniques of correctional counseling.

### **Correctional Institutions (3)**

CR 3313

Study of the philosophy, organizational structure and practices of correctional institutions.

### **Substance Abuse (3)**

# CRIMINOLOGY

CR 3314

Introduction to chemical dependency and the factors associated with the abusive use of chemicals; factors associated with helping the chemically dependent person.

## **Social Stratification (3)**

CR 3320

An analysis of social stratification utilizing social class as the unit of study. The course will focus on the structure of social classes in the U.S. as a major factor influencing individual and group life chances with regards to education, crime, health, and disease, world views and life styles.

## **Victimology (3)**

CR 3323

Study of crime victims and their interaction with offenders, criminal justice officials, and the public.

## **Juvenile Delinquency (3)**

CR 3324

An examination of juvenile delinquency in the U.S.: its nature, extent, causes, effects, prevention and rehabilitation. Sociological approaches to delinquency are emphasized, but psychological and legal approaches are also considered.

## **Criminology (3)**

CR 3325

An overview of the study of crime and the development of criminology. The nature, extent, causes, effects, rehabilitation and prevention of crime are examined from a sociological perspective. Psychological, legal, and philosophical approaches to crime are also considered.

## **Interviewing Techniques (3)**

CR 3326

An introduction to principles, strategies, techniques and practical skills involved in interviewing. Major types of interviews are considered, including information-gathering, information-providing, and counseling. Personal involvement and experience in conducting and evaluating actual interviews.

## **Mediation Techniques (3)**

CR 3327

Study of methods and techniques of conflict resolution, communications, mediation, and diversity awareness. Upon completion of CJ 3327, students wishing to receive a Certificate of Training as a mediator must complete either CJ 4303 (Internship) or 100 hours of volunteer service as a mediator in an appropriate setting approved by supervising faculty.

## **Research Methods Crim Justice (3)**

CR 3330

Study of methods and techniques of social research with an emphasis on criminology and criminal justice.

## **Computer Tech in Criminal Just (3)**

CR 3331

Inegrating computer application and research methods. Prerequisite: CJ 3330 or concurrently enrolled in

# CRIMINOLOGY

CJ 3330.

## **Statistics in Criminology (3)**

CR 3332

An introduction to inferential and descriptive statistics in the field of criminology. The course provides students with first-hand experience in the use of statistics and statistical packages.

## **Survey of Forensic Science (3)**

CR 3335

Course is designed to present an overview of the different areas of the Forensic Sciences. These areas include but are not limited to Pathology, Crime Scene Investigation, Ethics, Criminalistics, and Technology.

## **Crime Scene Investigation (3)**

CR 3336

Introduction to techniques of crime scene investigation. Emphasis will be on scene diagramming, search techniques, and presentation of different categories of evidence.

## **Forensic Criminology (3)**

CR 3337

This course blends the physical sciences with the science of criminology in the understanding, investigation, and the deterrence of crime.

## **Forensic Lab Techniques (3)**

CR 3338

Laboratory and field exercises pertaining to the forensic sciences.

## **Forensic Victimology (3)**

CR 3339

This course provides an understanding of the field of victimology as it is used to address investigative and forensic issues and problems.

## **The Family (3)**

CR 3343

A study of the family as an institution and social system, including discussions of dating and mate selection, premarital and extramarital sex, birth control, abortion, illegitimacy, family planning, spousal relationships, interracial and interfaith marriages, socialization, social control, and change.

## **Social Psychology (3)**

CR 3351

Theories and research on social factors in behavior, including such topics as attitudes, perception, leadership, and attraction.

## **Sex Crimes & Violent Crimes (3)**

CR 3360

The application of the forensic sciences to the investigation of sex crimes.

# CRIMINOLOGY

## **Urban Sociology (3)**

CR 3361

An analysis of cities, their historical development and social organization. Topics include urbanization in developed and developing societies, urban stratification and lifestyles, and urban, metropolitan and regional planning.

## **Demography and Ecology (3)**

CR 3362

The demographic study of human populations, including fertility, mortality, migration, age, sex, class composition. The ecological study of relations between human societies and their environments. Analysis of environmental problems and proposed solutions.

## **Minority Relations (3)**

CR 3371

A study of ethnic, religious and racial relations in the U.S. and other countries. Topics include power relationships, prejudice, discrimination, ethnic stratification, migration, assimilation and pluralism. Minorities to be considered include Blacks, Mexican-Americans and Native Americans.

## **Senior Seminar in Criminal Jus (3)**

CR 4302

Capstone course designed to evaluate knowledge and skills acquired by criminal justice and criminology students about their discipline. Students will design, analyze, write, and present a research project. The student must demonstrate knowledge of computer applications to research methodologies. In addition, the student must demonstrate critical thinking, problem-solving, oral and written communication skills, and the ability to effectively work within groups.

## **Internship in Crimi Just&Crimi (3)**

CR 4303

The student must acquire a minimum of 160 hours of practical experience in an approved criminal justice or social service agency. Unless an exception is made, this course is to be taken between the junior and senior years.

## **Indept Study in Criminology (3)**

CR 4304

Based on the student's professional and academic interest, the instructor will design an individualized reading course for the student.

## **Special Topics in Criminal Jus (3)**

CR 4305

Selected topics in criminal justice or criminology.

## **Internship in Forensic Science (3)**

CR 4308

Fieldwork experience in a criminal justice or related agency. A minimum of 160 hours of work experience is required.

# CRIMINOLOGY

# DRAMA

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Drama

## Department Chair

Bernadette Hamilton-Brady [bbrady@stmarytx.edu](mailto:bbrady@stmarytx.edu)

## Department Courses and Descriptions

### From Page to Stage in Theatre History (3)

DM 1302

An examination of the historical evolution of theatre from the Greeks to Contemporary Theatre. Emphasis is placed on experiencing first hand the performance style of selected historical periods through language, manners and movement, costuming, and interaction with ornamentation.

### Voice and Diction (3)

DM 1311

This course deals with the training of the speaking voice as it is explored through breath control and execution, integration of facial and body posture, and the synergism of consonant and vowel action into a resonating voice. In mastering the basic applications in this course, one may engage in vital vocal communication and expression of one's personal culture.

### Acting (3)

DM 2321

This course engages the student in the basic techniques of Acting via sensory exploration and tactical interplay. One will learn to communicate a character's relationship with others and his environment through exercises, games, improvisations, and critical analysis. As a result of this exploratory process, one will be able to justify and connect character actions that differ from one's own habit patterns, tempo-rhythms, or standard energy levels into an Acting score and performance.

### Introduction to Stagecraft (3)

DM 2352

A hands-on course in which the basic knowledge of tools, techniques, and procedures is used to create

# DRAMA

and build the end results of the divisions of theatre production; namely, set design and construction, lighting design, costume design, sound and property design, and stage management. Participation in departmental productions through DM 3161 is required.

## **Drama Rehearsal & Performance (1)**

DM 3161

Practicum in actual production. May be repeated up to 3 hours credit. This course may be taken by Free Audit. This means it will appear on transcript as "AU", but does not count toward graduation.

## **Directing (3)**

DM 3331

This course is an application of staging techniques and directorial principles onto selected scenes and short plays in a laboratory setting. Emphasis is placed upon the fundamentals of blocking, script analysis, achievement of emphasis as it relates to a visionary concept, and the development of aesthetic values.

## **History of the Theatre (3)**

DM 3381

Development of the theatre from primitive times to 1940.

## **Special Studies in Drama (1)**

DM 4191

Independent study or seminar. Consent of the department required. May be repeated up to six hours of credit.

## **Directing Drama Activities (3)**

DM 4331

High school drama activities studied in terms of conducting and recruitment.

## **Creative Drama for Children (3)**

DM 4361

Independent study or seminar. Consent of the department required. May be repeated up to six hours of credit.

## **Children's Theatre (3)**

DM 4362

Independent study or seminar. Consent of the department required. May be repeated up to six hours of credit.

## **Playwriting (3)**

DM 4371

Principles and practice in dramatic writing for the stage.

## **Special Studies in Drama (3)**

DM 4391

Independent study or seminar. Consent of the department required. May be repeated up to six hours of credit.



# DRAMA

## **Special Studies in Drama (6)**

DM 4691

Independent study or seminar. Consent of the department required. May be repeated up to six hours of credit.

# ECONOMICS

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Economics

## Department Chair

Roy E. Robbins [rrobbins@stmarytx.edu](mailto:rrobbins@stmarytx.edu)

## Description of Program/Major

Economics majors are students interested in diverse topics, including business opportunities analysis, economic development of third-world nations, environmental protection, policy evaluation, urban and regional planning, international trade and entrepreneurship.

Students majoring in economics at St. Mary's University learn how people make economic decisions and how institutions affect those decisions, both in theory and in practice. The Department of Economics offers a degree program for students interested in entering graduate or law school as well as students pursuing a career answering questions about international trade, policies in education and environmental protection, and equitable tax systems.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3

# ECONOMICS

SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# ECONOMICS

St. Mary's University  
BA in Economics (EC) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 1313 Foundations of Reflection: Others	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Speech <sup>1</sup>	3
—	SSC Req Mathematics <sup>8</sup> (MT 1305 or MT 1411)	3/4	—	MT 1306 Calculus for Business or MT 2412 Univariate Calculus I	3/4
—	EC 2303 Introductory Microeconomic Theory	3	—	EC 2301 Introductory Macroeconomic Theory	3
—	ND 0101 Personal & Academic Development	0	—		
Total		15/16	Total		15/16
Second Year Courses					
—	SMC 1314 Foundations of Reflection: God	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 2304 Foundation of Practice: Literature	3	—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	SSC Req Science <sup>9</sup>	3	—	EC 4335 Econometrics	3
—	PS 3381 Intro Statistics Psych (or equivalent)	3	—	EC Elective 33XX *	3
Total		15	Total		15
Third Year Courses					
—	SSC Req History <sup>3</sup>	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SSC Req Theology <sup>7</sup>	3	—	SSC Req Fine Arts <sup>4</sup>	3
—	EC 3347 Intermediate Microeconomic Theory	3	—	SSC Req Literature <sup>5</sup>	3
—	EC Elective 33XX *	3	—	EC 3346 Intermediate Macroeconomic Theory	3
—	Elective **	3	—	Elective **	3
Total		15	Total		15
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	EC 4385 Internship Economics (recommended)	3
—	EC 3310 International Economics	3	—	EC Elective 33XX *	3
—	Elective **	3	—	Elective**	3
—	Elective **	3	—	Elective**	3
—	Elective **	3	—	Elective**	3
Total		15	Total		15

Total Hours 120/122

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1305 or MT 1411

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

\*EC elective can be any non required advanced Economics course

\*\*An elective can be any course taken from any discipline.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing Statistics and EC 4335 Econometrics.

# ECONOMICS

St. Mary's University  
BA in Economics (CR) Degree Plan - 2010  
120/122 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30/31 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1305 or MT 1411	3/4
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3303	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Economics Major Courses (36/37 hours)**

__ EC 2301 – Introductory Macroeconomic Theory	3
__ EC 2303 – Introductory Microeconomic Theory	3
__ EC 3310 – International Economics	3
__ EC 3346 – Intermediate Macroeconomic Theory	3
__ EC 3347 – Intermediate Microeconomic Theory	3
__ EC 4335 – Econometrics	3
__ EC 4385 – Internship in Economics (Recommended)	3
__ MT 1306 – Calculus for Business or MT 2412 Univariate Calculus	3/4
__ PS 3381 – Introductory Statistics in Psychology (or equivalent)	3
__ EC Electives - EC elective can be any non required Economics course	9

## **Electives (24 hours)**

__ Electives - An elective can be any course taken from any discipline.	24
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing Statistics and EC 4335 Econometrics.

# ECONOMICS

## Department Courses and Descriptions

### **Intro Macroeconomic Theory (3)**

EC 2301

The content of this course includes an introduction to supply and demand, production possibilities, Gross Domestic Product, consumption, savings, investment, government expenditures, taxes, money and banking, fiscal and monetary theory, classical, Keynesian, rational expectation theories, international trade and finance.

### **Intro Microeconomic Theory (3)**

EC 2303

The content of this course includes an introduction to supply and demand, production possibilities, product markets (perfect competition, monopoly, monopolistic competition, oligopoly) and factor markets (perfect competition, monopsony) efficiency in production and consumption, general discussion of markets.

### **World Economic Geography (3)**

EC 3302

This course examines the spatial relationships of economic activities including production and trade. The importance of transportation, location of natural resources, and urban and regional development in the United States and other nations is examined.

### **International Economics (3)**

EC 3310

This course is a survey of international trade and international finance topics. The international trade portion will study major theories of international trade, tariff analysis, economic integration, and factor mobility. The international finance portion will examine balance of payments, foreign exchange markets, international investment, and macroeconomic stabilization. The use of the Internet as a tool of research and international business will be stressed. Social and ethical issues will also be studied and analyzed.

### **Economic Growth & Development (3)**

EC 3311

This course introduces students to the major theories of economic growth and development. Issues considered include rural-urban migration, capital formation, education, international trade and finance, and import substitution as factors affecting economic growth. Institutional factors and cultural values are examined.

### **Inter-American Econ Problems (3)**

EC 3315

Examines major aspects of Latin American production, income distribution, labor force, foreign investment, and trade. Surveys major contemporary issues including the Debt Crisis and Maquiladoras.

### **Economic Thought (3)**

EC 3325

This course considers the foundations of contemporary economic theory. Economic methodology is addressed as well as issues concerning economics and ethics. Some attention is given to ancient and

# ECONOMICS

medieval thought, but the major portion of the course begins with an examination of Adam Smith. The contributions of classical, neo-classical, and modern writers are considered. Issues in socio-economic teachings of the Catholic Church and economic theory are considered.

## **Money and Banking (3)**

EC 3330

Principles of money and credit; historical development and the status of the American banking system; Federal Reserve Bank operations and policy; credit controls, debt management, and monetary policy. Theory of international monetary cooperation

## **Financial Institutions (3)**

EC 3332

Review of operations of financial intermediaries including banks, saving institutions, and insurance companies. Principles of money and credit; review of central banking and monetary policies, both national and international. Prerequisite: AC 2320.

## **Public Sector Economics (3)**

EC 3340

This course applies economic theory to issues concerning the public sector. Issues such as income distribution, taxation and subsidies, poverty, education, and public goods are considered.

## **Intermediate Macroeconomic Theory (3)**

EC 3346

This course examines classical, Keynesian, and post-Keynesian fiscal and monetary economic theory, including rational expectations. Monetarist perspectives and theories underlying money and banking are included.

## **Intermediate Microeconomic Theory (3)**

EC 3347

The content of this course includes supply and demand, indifference curve analysis, perfect and imperfect product and factor analysis, complementary factors of production, elementary game theory, and Coase theorem. Efficiency is considered in production and consumption in the context of constraints.

## **Labor Economics (3)**

EC 3350

Examination of the history of the labor movement in the United States and various models of labor markets. Considers functions and types of unions, public and private employment, effects of legislation and regulation such as minimum wage, equal employment legislation, safety rules, etc., upon labor markets.

## **Economics of Natural Resources & Environment (3)**

EC 3355

Consideration of the use of resources including water, minerals, fish and animal life, forests and air from the perspective of markets, property rights, and social benefits and costs. Considers the effects of time on economic analysis of resource use.

# ECONOMICS

## **Econometrics (3)**

EC 4335

Application of statistical methods and economic theory for empirical research in economics. Prerequisite: PS 3381 or equivalent or permission of the instructor.

## **Selected Topics in Economics (3)**

EC 4340

Consideration of selected topics in economics. Prerequisites vary with topic. May be taken more than once if topics vary.

## **Internship in Economics (3)**

EC 4385

Experience-based education in an approved employment activity in the public or private sector. Under the supervision of an elected, administrative, or planning official, the student will do research, analysis, evaluation, or report writing. Credit is based upon material submitted to the Internship Coordinator, evaluations by the supervisor and other measures as determined by the Coordinator.

## **Senior Project in Economics (3)**

EC 4386

Under the direction of Economics faculty, the student will do research in a theoretical area of personal interest. Students will apply theoretical, mathematical, statistical, and computer science skills acquired in this degree program in developing the research project. The student will present the project and defend it, including the methodology used and its conclusions, before a panel of three faculty members, two of whom must be from the Economics department.



# EDUCATION

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Education

## Department Chair

Daniel J. Higgins, Ph.D. [dhiggins@stmarytx.edu](mailto:dhiggins@stmarytx.edu)

## Description of Program/Major

The state of the American educational system is one of the most debated topics on our national agenda. Everyone seems to have a proposal on how to best educate the young people of this country. Despite their different approaches to the problem, all proponents of educational reform agree on one thing: to keep our schools globally competitive, we need competent, dedicated teachers.

At St. Mary's University of San Antonio, we have long been committed to preparing teachers for the important role they play in our society's future. Our elementary and secondary teacher certification programs integrate rigorous academic training and supervised field experience with a well-rounded education, providing our students with the tools they need to be effective educators.

More importantly, the programs attempt to instill in our students an appreciation for the enjoyment and fulfillment derived from the teaching profession. This requires that St. Mary's teacher certification candidates be committed to a profession wherein they can make a difference in the lives of young people. If you share this passion and commitment, we invite you to consider becoming a part of our educational community.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

# EDUCATION

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# EDUCATION

St. Mary's University

BA in Interdisciplinary English Language Arts and Reading (IENR) Degree Plan - 2011

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses is recommended to be completed before registering for SMC23## "Practice" courses.

"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 1314 Foundations of Reflection: God	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Foreign Language <sup>4</sup>	3
—	SSC Req Foreign Language <sup>4</sup>	3	—	SSC History/Social Science <sup>8</sup>	3
—	SSC Req Mathematics <sup>6</sup>	3	—	SSC Req Literature <sup>3</sup>	3
—	SSC History/Social Science <sup>8</sup>	3	—	SSC Req Science (with lab) <sup>7</sup>	3/4
—	ND 0101 Personal & Academic Development	0			
Total		15	Total		15/16
Second Year Courses					
—	SSC History/Social Science <sup>8</sup>	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SSC Req Literature <sup>3</sup>	3	—	SSC History/Social Science <sup>8</sup>	3
—	SSC Req Science (with Lab) <sup>7</sup>	3/4	—	SSC Req Science (with lab) <sup>7</sup>	3/4
—	SSC Req Speech <sup>1</sup>	3	—	EN 3300 Advanced Composition	3
—	ED 3301 American Elementary School	3	—	EX 2381 Essential Elements in Human Performance, Health, & Safety for Children	3
Total		15/16	Total		15/16
Third Year Courses					
—	SSC Req Theology <sup>5</sup>	3	—	ED 3321 Instructional Planning, Assessment & Evaluation	3
—	SSC Req Fine Arts: DM 4191 Special Studies: Theatre Arts	1	—	ED 3330 Teaching Diverse Populations	3
—	SSC Req Fine Arts: MU 3242 History of Music	2	—	ED 3341: Reading: Diagnosis, Remediation & Prevention of Reading Difficulties	3
—	ED 3316 Child Development and Learning in the School Setting	3	—	EN 3315 <b>Children's Literature</b>	3
—	ED 3340 Reading: Methods of Teaching Reading	3	—	MT 3306 Essential Elements of Mathematics III	3
—	ED 3351 Reading: Content Area Reading in the Elementary School	3	—	ES 3301 Essential Elements of Life/Earth Science	3
—	MT 3304 Essential Elements of Mathematics I	3			
Total		18	Total		18
Fourth Year Courses					
—	AR 3381 History of Art Applied	3	—	ED 4338 Professional Development Seminar-Elementary	3
—	ED 4351 Reading: Skills Development for Interdisciplinary ELA & Reading Majors	3	—	ED4639 Student Teaching in Elementary School (requires Dept Chair Permission)	6
—	EN 3313 Linguistics	3			
—	MT 3305 Essential Elements of Mathematics II	3			
—	SS 3300 Essential Elements of Social Sciences	3			
Total		15	Total		9

Total Hours 121/123

<sup>1</sup>Students select from the following courses for Speech: SE 1341

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311

<sup>3</sup>Students select from the following courses for Literature: EN 2323, 2357

<sup>4</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>5</sup>Students select from the following courses for Theology: TH 33XX

<sup>6</sup>Students select from the following courses for Mathematics: MT 1303, MT 1411

<sup>7</sup>Students select from the following courses for Science (lab is required for each course unless the Education Department Chair provides a written exception): (12 hours) ES 1300, 1305; BL 1301 or BL 1401

<sup>8</sup>Students select from the following courses for Social Science/History: (12 hours) HS 1301, 1302, 1351, PO 1312

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCritical Thinking Test with 250 or higher, or a grade of "B-" or better in ED 3301.

# EDUCATION

St. Mary's University  
BA in Interdisciplinary English Language Arts and Reading (IENR) Degree Plan - 2011  
121/123 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## St. Mary's University Core (9 Hours)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.

__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3

## School of Humanities and Social Sciences School Specific Core (52/54 Hours)

__ Speech – SE 1341 (SE 1321 for international students)	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311	3
__ Mathematics – MT 1303 or MT 1411	3/4
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History/Social Science (12 hours) – HS 1301, 1302, 1351; PO 1312	12
__ Science (lab is required unless a written exception is provided by Education Chair) – ES 1300, 1305; BL 1301/1401	10/12
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR 3381, DM 4191, MU 3242	6
__ Literature – EN 2323, 2357	6

## Area of Specialization: English Language Arts and Reading (21 hours)

__ EN 3313 – Reading: Linguistics	3
__ EN 3315 – <b>Children's Literature</b>	3
__ ED 3340 – Reading: Methods of Teaching Reading	3
__ ED 3341 – Reading Diagnosis, Remediation and Prevention of Reading Difficulties	3
__ ED 3351 – Reading: Content Area Reading in the Elementary School	3
__ ED 4351 – Reading: Skills Development for Interdisciplinary ELA & Reading Majors	3
__ EN 3300 – Advanced Composition	3

## Professional Development Courses (21 hours)

__ ED 3301 – The American Elementary School	3
__ ED 3316 – Child Development and Learning in the School Setting	3
__ ED 3321 – Instructional Planning, Assessment and Evaluation	3
__ ED 3330 – Teaching Diverse Populations	3
__ ED 4338 – Professional Development Seminar-Elementary	3
__ ED 4639 – Student Teaching in the Elementary School (requires Department Chair Permission)	6

## Combination of Subjects Courses (18 hours)

__ ES 3301 – Essential Elements of Life/Earth Science	3
__ EX 2381 – Essential Elements in Human Performance, Health, & Safety for Children	3
__ MT 3304 – Essential Elements of Math I	3
__ MT 3305 – Essential Elements of Math II	3
__ MT 3306 – Essential Elements of Math III	3
__ SS 3300 – Essential Elements of the Social Sciences	3

## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be fulfilled by passing the iCritical Thinking Test with 250 or higher, or a grade of "B-" or better in ED 3301.

# EDUCATION

St. Mary's University

BA in English Language Arts and Reading with Teacher Certification (Secondary) Degree Plan - 2010

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

**All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.**

***"Reflection" courses can be taken in any order followed by "Practice" courses in any order.***

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 1313 Foundations of Reflection: Others	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SMC 2304 Foundation of Practice: Literature	3
—	SSC Req History <sup>3</sup>	3	—	SSC Req Mathematics <sup>8</sup>	3
—	SSC Req Speech <sup>1</sup>	3	—	SSC Req Literature <sup>5</sup>	3
—	ND 0101 Personal & Academic Development	0			
Total		15		Total	15
Second Year Courses					
—	SMC 1314 Foundations of Reflection: God	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	SSC Req Fine Arts <sup>4</sup>	3	—	SSC Req Theology <sup>7</sup>	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	EN 3310 Creative Process OR	3
—	EN 3300 Advanced Composition	3	—	EN 3311 Poetry Writing OR	
			—	EN 3312 Fiction Writing	
			—	EN 3313 Linguistics OR	3
			—	EN 3351 History of the English Language	
Total		15		Total	15
Third Year Courses					
—	SSC Req Science <sup>9</sup>	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	EN 3341 Teaching of Composition	3	—	ED 3340 Methods of Teaching Reading	3
—	EN 3350 Introduction to Literary Study	3	—	ED 3361 Adolescent Development & Learning	3
—	ED 3302 The American Secondary School	3	—	ED 3341 Reading: Diagnosis, Remediation & Prevention of Reading Difficulties	3
—	Broad Thematic Course in American Literature*	3	—	Multicultural or World Literature**	3
Total		15		Total	15
Fourth Year Courses					
—	ED 4360 Skill Development for Secondary English Majors	3	—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
—	ED 3350 Teaching Reading in Content Area	3	—	ED 4388 Professional Development Seminar - Secondary	3
—	ED 3362 Secondary Teaching Methods	3	—	ED 4689 Student Teaching in Secondary School	6
—	EN 5395 Senior Capstone	3			
—	EN or EA Advanced Writing	3			
—	SE 33XX Advanced Speech	3			
Total		18		Total	12

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition **with a "C" or better**: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302.

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*, DM \*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2352

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit (Spanish preferred)

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1303 or MT 1411.

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

\* Broad Thematic course in American Literature (3 hours): EN 4310, 4390 through 4397

\*\* Multicultural or World Literature (3 hours): EN 5300 through 5349

\*\*\* Advanced Speech (3 hours): SE 3321, 3331, 4321

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCritical Thinking Test with 250 or higher, or CS 1300.

# EDUCATION

St. Mary's University

BA in English Language Arts and Reading with Teacher Certification (Secondary) Degree Plan – 2010 (120 Hours)

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ <b>Composition and Rhetoric (grade of "C" or better)</b> – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1303, MT 1411	3
__ Foreign Languages (Spanish preferred) - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year: Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 2352	3

## **Professional Development Courses (21 hours)**

__ ED 3302 – The American Secondary School	3
__ ED 3361 – Adolescent Development and Learning in School Setting	3
__ ED 3362 – Secondary Teaching Methods	3
__ ED 3350 – Teaching Reading in the Content Areas	3
__ ED 4388 – Professional Development Seminar - Secondary	3
__ ED 4689 – Student Teaching in Secondary School	6

## **Reading Courses (9 hours)**

__ ED 3340 – Methods of Teaching Reading	3
__ ED 3341 – Diagnosis, Remediation and Prevention of Reading Difficulties	3
__ ED 4360 – Skill Development for Secondary English Majors	3

## **English Major Courses (30 hours)**

__ EN 3300 – Advanced Composition	3
__ EN 3310 – Creative Process OR EN 3311 Poetry Writing OR EN 3312 Fiction Writing	3
__ EN 3313 – Linguistics OR EN 3351 History of the English Language	3
__ EN 3341 – Teaching of Composition	3
__ EN 3350 – Introduction to Literary Study	3
__ EN 5395 – Senior Capstone	3
__ Broad Thematic course in American Literature – EN 4310, 4390 through 4397	3
__ Multicultural or World Literature – EN 5300 through 5349	3
__ EN or EA Elective – Advanced English or Advanced Writing	3
__ Advanced Speech – SE 3321, 3331, 4321	3

## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by passing the iCritical Thinking Test with 250 or higher, or CS 1300.

# EDUCATION

# EDUCATION

## Department Courses and Descriptions

### **Observation Practicum (3)**

ED 2300

Observation experience in a school setting observing whole group instruction, assisting in small group and individual settings under the direct supervision of an experienced teacher at two or more grade levels. Introduction to individual pupil learning styles, cultural, ethnic language, and social differences.

### **The American Elementary School (3)**

ED 3301

The structure, organization, and management of the American School System with emphasis on the state and local structures in Texas; legal and ethical aspects of teaching; essential components of effective learning environments; and classroom management techniques designed to address the needs of diverse elementary school populations. Structured observations and field experience required.

### **The American Secondary School (3)**

ED 3302

The structure, organization, and management of the American School System with emphasis on the state and local structures in Texas; legal and ethical aspects of teaching; classroom management techniques designed to address the needs of diverse secondary school populations, and essential components of effective learning environments. Structured observations and field experience required.

### **Children's Literature (3)**

ED 3315

ED 3315 Children's Literature will be replaced with EN 3315 Children's Literature

### **Child Development and Learning in the School Setting (3)**

ED 3316

Introduction to the development of interrelationships among the cognitive, social, emotional, and physical stages of children and adolescents; the analysis and uses of theories of learning to determine instructional strategies to meet the education needs of this population. Structured observations and field experience required.

### **Instructional Planning, Assessment and Evaluation (3)**

ED 3321

Course content explores the nature and design of educational activities with an emphasis on instructional planning, formal and informal assessments, and the utilization of assessment outcomes to inform instruction. Structured observations and field experience required. Prerequisites: ED 3301

### **Teaching Diverse Populations (3)**

ED 3330

This course examines current research, policies and professional practices pertaining to cultural diversity and the educational needs of special populations. Emphasis will be on teaching strategies and learning environments that improve teacher effectiveness within an increasingly diverse school setting. Structured observations and field experience required.



# EDUCATION

## **Reading: Methods of Teaching Reading (3)**

ED 3340

This course examines principles of literacy learning in young children and provides an introduction to theories and effective practices for teaching reading and writing in the elementary school. Teaching phonemic awareness, phonics, decoding skills, vocabulary, word attack skills, and comprehension strategies to English Language Learners and struggling readers is emphasized. Structured observations and field experience required.

## **Reading: Diagnosis, Remediation, and Prevention of Reading Difficulties (3)**

ED 3341

Study and use of standardized and informal testing materials and methods for diagnosing individual and group reading strengths and weaknesses in each of the five components of Scientific Based Reading Research (Phonemic Awareness, Phonics, Comprehension, Vocabulary, and Fluency). Individual diagnosis and prescriptive techniques for struggling readers will be emphasized. Field experience is required with lesson planning and reflective evaluation of each session.

## **Reading-Psycholinguistic Found (3)**

ED 3342

Inquiry into the basic psychological and linguistic aspects of reading and the relationship of language and thought. Emphasis on research related to psycholinguistics, language acquisition, and language development as well as the instructional implications gathered from research. Field experience required. Prerequisite: ED 3340.

## **Reading-Language Arts (3)**

ED 3345

Integrated language arts instruction with emphasis placed on separate subject instruction and the effects of each upon the total reading program. A review of the language arts curriculum, objectives and skills, scope and sequence of skills. Prerequisite: ED 3301.

## **Reading-Teaching Reading in Se (3)**

ED 3350

Introduction to reading in content areas for instruction in secondary schools. The study of instructional strategies to develop technical vocabulary; frames of reference; pupil use of visual and organizational aids; of prediction and verification skills; of notetaking, research, and study skills. Overview of methods used in reading programs. Field experience required. Formerly ED 3306.

## **Reading: Content Area Reading in the Elementary School (3)**

ED 3351

The study of instructional strategies to develop vocabulary, frames of reference for content area material; visual and organizational aids and verification skills, comprehension, and study skills necessary to improve learning in various academic subjects. The development of fluency, spelling, and grammatical conventions of academic language for English Language Learners and special populations will be emphasized.

## **Adolescent Development in Sch (3)**

ED 3361

# EDUCATION

Introduction to adolescent development and theories of learning with emphasis on physical, intellectual, social, and emotional growth; Instructional planning; motivation of adolescents; pupil measurement and evaluation; multicultural implications in adolescent development. Field experience required.

## **Teaching-Learning & Secondary (3)**

ED 3362

Teaching-learning processes and curriculum organization as they relate to classroom applications with emphasis on instructional planning and evaluation (unit and lesson plans including media, individualized and self-paced techniques, teacher-planned evaluation); study of curriculum materials; microteaching practicum. Field experience required.

## **Understand Education in Multic (3)**

ED 4314

Identification of cultural backgrounds in a diverse society, with emphasis on learning style and cultural enrichment.

## **The Exceptional Child (3)**

ED 4320

Psychology of the physically, mentally, and socially exceptional child, with necessary and appropriate variations in educational procedure.

## **Professional Development Seminar - Elementary (3)**

ED 4338

Course content will relate the experiences of current professionals and student teachers to best practices. Emphasis will be placed on knowledge, application, and evaluation of principles, procedures, and techniques of effective classroom teaching. Courses will, additionally, emphasize the application of TExES competencies as a foundation for effective teaching and learning in elementary classes. Prerequisite: currently registered in ED 4639

## **Reading: Skills Development for Interdisciplinary ELA & Reading Majors (3)**

ED 4351

Acquisition and development of basic reading skills from pre-kindergarten through the intermediate grades with a focus on the scope and sequence of skills needed for effective comprehension and independent reading. Instructional strategies for teaching English language learners, special populations, and struggling readers will be emphasized. Structured observations and field experience required. Prerequisites: ED 3340, 3341

## **Read-Skills Devel for Secon (3)**

ED 4360

Acquisition and development of basic reading skills for intermediate grades through high school. Emphasis on functional reading skills, on scope and sequence of skills needed for basic independent reading and on skills needed for reading to learn. Preparation of materials, activities, and teaching strategies for a developmental reading program for students in the intermediate grades through high school. Prerequisites: ED 3340, 3341, 3351.

## **Understanding Edu in a Multi S (3)**

# EDUCATION

ED 4372

Identification of cultural backgrounds in a diverse society, with emphasis on learning style and cultural enrichment.

## **Professional Development Seminar-Secondary (3)**

ED 4388

Knowledge, application, and evaluation of principles, procedures and techniques for effective classroom teaching with emphasis on the application of TExES competencies for effective teaching and learning in secondary classrooms. Course content will relate to the current teaching experiences of student teachers and teachers. Prerequisite: currently registered in ED 4639 or 5398 or 5399 or currently teaching.

## **Student Teaching-Elementary (6)**

ED 4639

Observation and supervised teaching in the elementary school. Formerly ED 4680.

## **Student Teaching-Secondary (6)**

ED 4689

Observation and supervised teaching in the secondary school. Formerly ED 3680.

## **Special Topics in Education (1)**

ED 5190

A thorough study of critical issues, cogent problems, or current needs in Education such as in instructional use of computers, analysis of teaching behavior, or formal evaluation of teachers. Specific subject indicated each time the course is offered. May be repeated for credit when specific subject changes. Prerequisite: Permission of Chairperson of Department of Education.

## **Special Topics in Education (2)**

ED 5290

A thorough study of critical issues, cogent problems, or current needs in Education such as in instructional use of computers, analysis of teaching behavior, or formal evaluation of teachers. Specific subject indicated each time the course is offered. May be repeated for credit when specific subject changes. Prerequisite: Permission of Chairperson of Department of Education.

## **Special Topics in Education (3)**

ED 5390

A thorough study of critical issues, cogent problems, or current needs in Education such as in instructional use of computers, analysis of teaching behavior, or formal evaluation of teachers. Specific subject indicated each time the course is offered. May be repeated for credit when specific subject changes. Prerequisite: Permission of Chairperson of Department of Education.

## **Teaching Internship I (3)**

ED 5398

For persons employed as a teacher-of-record in a public or accredited private school. The teaching intern performs all duties of a first-year teacher. Evaluation based on performance as a full-time, first-year teacher. Three semester hours for one semester. Teacher certification requirements specify two consecutive semesters of teaching internship for a total of six semester hours. Prerequisites: Bachelor Degree;

# EDUCATION

completion of all teaching field courses and all Professional Development courses except ED 4338 or 4388, and 4639 or 4689. Enrollment is restricted to persons who meet the requirements for the State of Texas Post Baccalaureate Teaching Internship and who have life experiences to support a teaching internship. Recommendation of the Education Department and approval by the Faculty Committee on Teacher Education are required.

## **Teaching Internship II (3)**

ED 5399

Continuation of Teaching Internship I Prerequisite: ED 5398 Teaching Internship

# ENGLISH

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

English & Communication Studies

## Department Chair

Kathleen Maloney, Ph.D. [kmaloney@stmarytx.edu](mailto:kmaloney@stmarytx.edu)

## Description of Program/Major

English majors at St. Mary's University explore the power of language through a wide range of critical methods and a diversity of texts, from *Beowulf* and *Hamlet* to *Leaves of Grass* and *The House on Mango Street*.

Through courses in international, American, and British literature, students learn about themselves, social issues and cultural concerns, as well as language's potential to transform society. The Department of English has incorporated multiethnic and international writers in literature courses to help English students better understand the globalized society in which they live.

The English major offers a comprehensive degree that integrates research processes, rhetoric, composition, and even professional writing. The study of English includes courses in the history of the language, linguistics, usage, and grammar.

The English program provides a well-rounded education in literature, in analytical and creative thinking, and in written and oral communication. Through exploring literature, the faculty aims to broaden the scope of student knowledge in world culture, religion, philosophy, economics, history, and ethics.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any

# ENGLISH

*order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# ENGLISH

St. Mary's University  
BA in English (EN) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1313 Foundations of Reflection: Others	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 1314 Foundations of Reflection: God	3
—	SMC 1312 Foundations of Reflection: Nature	3	—	SSC Req Literature <sup>5</sup>	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	SSC Req Speech <sup>1</sup>	3
—	ND 0101 Personal & Academic Development	0			
Total		15	Total		15
Second Year Courses					
—	SMC 2301 Foundations of Practice: Ethics	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SMC 2304 Foundation of Practice: Literature	3	—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
—	SSC Req Fine Arts <sup>4</sup>	3	—	SSC Req History <sup>3</sup>	3
—	SSC Req Mathematics <sup>8</sup>	3	—	EN 3350 Intro to Literary Study	3
—	EN 3300 Advanced Composition	3	—	EN 33XX Advanced Literature	3
Total		15	Total		15
Third Year Courses					
—	SSC Req Theology <sup>7</sup>	3	—	SSC Req Science <sup>9</sup>	3
—	EN 33XX Advanced Literature	3	—	EN 33XX Advanced Literature	3
—	EN 33XX Advanced Literature	3	—	EN 33XX Advanced Literature	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
Total		15	Total		15
Fourth Year Courses					
—	EN 5395 Senior Capstone	3	—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
—	EN 33XX Advanced Literature	3	—	EN 33XX Advanced Literature	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
Total		15	Total		15

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year: Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied: Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# ENGLISH

St. Mary's University  
BA in English (EN) Degree Plan - 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric (grade of <b>"C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3303	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **English Major Courses (30 hours)**

__ EN 3300 – Advanced Composition	3
__ EN 3350 – Introduction to Literary Study	3
__ EN 5395 – Senior Capstone	3
__ EN Electives – EN elective can be any non required advanced English literature course	21

## **Electives (30 hours)**

__ Electives - An elective can be any course taken from any discipline.	30
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.



# ENGLISH

## Department Courses and Descriptions

### **Rhetoric and Composition (3)**

EN 1311

Emphasis on the composing process, including development and control of authorial voice through pre-writing, shaping, and editing of product. Emphasis on revision for clarification, organization, and refinement of product for audience. Required of all students, regardless of major, and should be taken in the first semester.

### **Rhetoric and Composition II (3)**

EN 1312

This number is used only to record transfer credit for those students who have taken two semesters of English elsewhere. It is credited as EN 3300, Advanced Composition.

### **Rhetoric and Composition for International Students (3)**

EN 1313

Freshman composition course enriched for non-native speakers of English. Instruction in the composing process by studying theory, analyzing model compositions by famous writers, and writing one formal composition a week, in addition to in-class writing exercises. Covers the creating, shaping, and completing stage of writing. A personal tutor is assigned to aid students with specific writing needs.

### **Rhetoric and Composition for International Students (3)**

EN 1314

This writing and composition course is intended for international students whose first language is not English. The emphasis in the course is on improving the students' writing and composition skills above and beyond what is offered in EN 1313. Related ESL skills will also be taught. Prerequisite: EN 1313.

### **International Literature (3)**

EN 2323

Critical reading of representative works. Critical writing and research based on readings. Prerequisite: EN 1311 or EN 1313.

### **Survey of International Literature (3)**

EN 2323

Critical readings of representative works in translation of fiction, essay, poetry, and drama. Critical writing and research based on readings. Prerequisite: EN 1311 or EN 1313.

### **Survey of British Literature (3)**

EN 2352

This course will feature selections from the whole range of British Literature, from Beowulf to the present. Prerequisite: EN 1311 or EN 1313.

### **Survey of American Literature (3)**

EN 2357

Critical readings from the beginnings to the twenty-first century. Critical writing and research based on the readings. Prerequisite: EN 1311 or EN 1313.

# ENGLISH

## **Special Topics in English (3)**

EN 2399

Special Topics in English (Elective transfer credit only.)

## **Advanced Composition (3)**

EN 3300

Exercises in the expository essay: the review, critical essay, essay of definition, essay of persuasion, position paper, etc. Focus on writing across majors. Prerequisites: EN 1311 or 1313, plus SMC 2304 and, if it is a school-specific requirement, 3 hours of EN 2323, 2352, or 2357.

## **Introduction to the Creative Process (3)**

EN 3310

Designed for aspiring teachers and other students who wish to gain insight into the creative imagination, this course offers strategies for developing the right brain's potential for verbal expression and for evaluating our own and others' literary efforts. From their work in the class, students will produce a literary magazine of short stories and poetry.

## **Poetry Writing Workshop (3)**

EN 3311

Through analysis of a wide range of poetry and study of the creative process, students will increase their understanding and enjoyment of the art form as they develop their skills as poets. Performance required.

## **Fiction Writing Workshop (3)**

EN 3312

Students will write short stories, experimenting with a variety of structures and forms, as exemplified in the works of American, British, and International authors. Prerequisites: All English Core requirements, including SMC 2304.

## **Linguistics: Grammar as Communication (3)**

EN 3313

Grammatical structures and syntax examined as materials of written communication. Required for all EN-ED Majors. Recommended for all EN and EA Majors and Minors.

## **Children's Literature (3)**

EN 3315

This course includes a critical reading survey of selections of children's literature, identification and perception of literary conventions, types and genres of literature, and an appreciation of the role of children's literature in the transmission of cultural heritage. Models of extension reading activities will be demonstrated and used in school settings. Field experience required.

## **Persuasive Writing (3)**

EN 3321

By examining both classical and more recent approaches to persuasive prose, students will learn to write effective claims and convincing arguments. Research and intensive writing required.

# ENGLISH

## **Teaching of Composition (3)**

EN 3341

Focuses on rhetoric as both theory and practice, studying the history of rhetorical theory from Aristotle to the present, researching recent composing processes and methods for facilitating and developing student writing in today's culturally diverse classroom. Required for all EN-ED majors.

## **Introduction to Literary Criticism (3)**

EN 3350

This course provides a historical approach to literary analysis, a knowledge of literary terms and their application, and several analytical approaches to literature, including formal, historical, psychological, and feminist. Required for all English Majors and Minors, and should be taken as early in the program as possible. Recommended for all EA Majors and Minors.

## **The History of the English language (3)**

EN 3351

English examined as a language continually constructed through a dialectic of culture and mind. The place of English in the family of languages, with the growth of vocabulary and syntax related to demographic, political, economic, and cultural development.

## **Poetry Analysis (3)**

EN 3361

Study of diction, imagery, tone, theme in poetry. Analysis of types, versification, and the critical language used in the study of poetry.

## **Fiction Analysis (3)**

EN 3362

Intensive study of the structures of fiction: narrative voice, characterization, setting, symbol, tone, and theme. Includes a study of novels and short stories by writers such as Henry James, Edith Wharton, Toni Bambara, Jorge Luis Borges, Albert Camus, Nadine Gordimer, Doris Lessing, Yukio Mishima.

## **Drama Analysis (3)**

EN 3363

Study of drama from many countries. Discussion about dramatic structure, character, plot, setting, dialogue, and theme.

## **Contemporary Literary Criticism (3)**

EN 3371

Practice in applying a variety of American and European critical approaches, including reader-response, psychoanalytical, mythic, socio-historical, and feminist approaches to works of literature.

## **Modern Short Story (3)**

EN 3381

Cross-cultural reading of the modern short story, historical development of the genre, theory and practice of short story criticism.

## **Twentieth Century Novel (3)**

# ENGLISH

EN 3383

A study of English-language novels written throughout the Twentieth Century, focusing on genres, themes, and stylistic concerns particular to the Twentieth Century Novel. Authors who might be included are Samuel Beckett, James Joyce, Virginia Woolf, Lawrence Durrell, Zora Neale Hurston, Margaret Atwood, and Joyce Carol Oates.

## **Masterpieces of Drama (3)**

EN 3386

Study of the greatest plays of the western world. Emphasis on the genre, and the dramatization of issues and values in cultural contexts. Aeschylus, Sophocles, Euripides, Aristophanes, Shakespeare, Jonson, Moliere, Wycherley, Racine, Ibsen, Strindberg, Chekhov, and modern dramatists.

## **Author and Work (3)**

EN 3391

Focus on the body of work by one or two major authors, such as Eliot and Pound, James and Wharton, Hawthorne and Melville, or Hopkins, Hemingway, Lawrence, Lessing, Morrison, O'Brien, O'Connor, Twain, Whitman. Emphasis on specific genres developed by writer/s. Students may also take EN 3392.

## **Author and Work (3)**

EN 3392

Focus on the body of work by one or two major authors, such as Eliot and Pound, James and Wharton, Hawthorne and Melville, or Hopkins, Hemingway, Lawrence, Lessing, Morrison, O'Brien, O'Connor, Twain, Whitman. Emphasis on specific genres developed by writers. Students may also take EN 3391.

## **Bible as Literature (3)**

EN 3395

This course will examine the historical process which culminated in the canonical books of the Bible and study the different genres which constitute those books. The course will also cover the process through which the basic English translations, the King James and Douay-Rheims versions, were made, and trace the influence of Biblical allusion and style in the works of several major writers.

## **American Romanticism: Origins & Development (3)**

EN 4310

A consideration of the origins and development of American Romanticism in literature. The study begins with romantic origins in American Puritanism, considers its flowering during the rise of American Transcendentalism, and might examine its on-going influence in modern and contemporary American writers. It considers the writings of authors such as Poe, Emerson, Thoreau, Dickinson, Whitman, Hawthorne, Cather, Frost, Stevens, Walker Percy.

## **American Realism and Naturalism (3)**

EN 4312

The course will probe how the novel as genre in the Age of Realism and Naturalism (Civil War to First World War) expresses the class, racial, and gender tensions of the times. Typical authors read include Twain, James, Howells, Wharton, Jewett, Dreiser.

## **Southern Experience in Fiction (3)**

# ENGLISH

EN 4321

A consideration of the rise of U.S. Southern fiction, examining the historical, cultural, and philosophical forces which gave rise to this literature through the study of the South's fiction and criticism. Authors include Cable, Chopin, Faulkner, O'Connor, Warren, Welty, Gordon, Petry, Wright, Gaines, Porter.

## **American Literature Since 1950 (3)**

EN 4331

As America as a nation came to maturity and American writers developed into significant literary figures after the Second World War, so, too, this period embraces a new chorus of feminine and minority voices. It coincides with America's assumption of the role of world power and adds significantly to an understanding of ourselves as a diverse people with a distinct culture within the world community.

## **Medieval English Literature (3)**

EN 4351

The correlation of cultural meaning and literary excellence in the medieval worldview manifested in the English mystery cycles, the Pearl Poet, Chaucer, and the alliterative *Morte d'Arthur*.

## **Renaissance Literature (3)**

EN 4361

Critical study of selected readings in British prose, poetry, and drama from 1500 to 1660.

## **Shakespeare Studies I (3)**

EN 4365

A survey of a range of Shakespeare's work, including *Taming of the Shrew*, *Richard II*, *Henry IV*, *Much Ado About Nothing*, *Twelfth Night*, *Julius Caesar*, *Troilus and Cressida*, *Othello*, *King Lear*, *The Tempest*.

## **Shakespeare Studies II (3)**

EN 4366

A further sampling of Shakespeare's work, including *Richard III*, *Romeo and Juliet*, *Midsummer Night's Dream*, *Merchant of Venice*, *As You Like It*, *Measure for Measure*, *Hamlet*, *Macbeth*, *Anthony and Cleopatra*. EN 4365 is not a prerequisite.

## **Eighteenth-Century British Literature (3)**

EN 4371

A critical study of selected readings in prose and poetry from 1660 to 1780, including Rochester, Dryden, Pope, Swift, and Johnson.

## **The Beginnings of the British Novel (3)**

EN 4375

Correlation of story, narrative voice, and cultural moment from Daniel Defoe to Maria Edgeworth. Interaction between theme and narrative voice with the economic and political events of the 18th Century. Evolution of narrative voice to ideological stance and literary self-consciousness.

## **Nineteenth-Century British Literature (3)**

EN 4381

# ENGLISH

This course covers the poetry and prose of the Romantic and Victorian periods. The course considers the influence of historical, social, political, and philosophical thought on the literature of the time, and the effect of ideas developed during this time on contemporary thinking.

## **Nineteenth-Century British Novel (3)**

EN 4385

This course studies the different forms of the novel in the Nineteenth Century and the social and cultural reasons for their emergence. Authors whose works may be included are Jane Austen, Mary Shelley, Emily and Charlotte Bronte, Charles Dickens, Arthur Conan Doyle.

## **American Love in Literature and Life (3)**

EN 4390

Romantic love imaged in literature as a means of self-transcendence in and through the life cycle, gender differences, and personal quest. This free-form advanced survey course might be taken by EN majors who took EN 2352.

## **British Love in Literature and Life (3)**

EN 4391

Romantic love imaged in literature as a means of self-transcendence in and through the life cycle, gender differences, and personal quest. This course might be taken by EN majors who took EN 2357.

## **American: The Self in Fiction (3)**

EN 4392

Psychological constructs of self as paradigms to examine fictional selves who project an imaginative world that mirrors and structures daily life. This free-form survey course might be taken by EN majors who took EN 2352.

## **British: The Self in Fiction (3)**

EN 4393

Psychological constructs of self as paradigms to examine fictional selves who project an imaginative world that mirrors and structures daily life. This free-form survey course might be taken by EN majors who took EN 2357.

## **American Hero and Anti-Hero (3)**

EN 4394

From the epic hero to the anti-hero and post modern hero in literature. This course might be taken, in particular, by EN majors who took the Survey of British Literature.

## **British Hero and Anti-Hero (3)**

EN 4395

From the epic hero to the anti-hero and post modern hero in literature. This free-form survey course might be taken by EN majors who took EN 2357.

## **American Literature and Modernism (3)**

EN 4396

Modernism as a concept; its beginnings as a major aesthetic and philosophical revolt, and its evolution as

# ENGLISH

it is reflected in the literary works of British, of American, or of International Literature.

## **British Literature and Modernism (3)**

EN 4397

Modernism as a concept; its beginnings as a major aesthetic and philosophical revolt, and its evolution as it is reflected in the literary works of British, of American, or of International Literature.

## **International Love in Literature and Life (3)**

EN 5300

Romantic love imaged in literature as a means of self-transcendence in and through the life cycle, gender differences, and personal quest.

## **International: The Self in Fiction (3)**

EN 5301

Psychological constructs of self as paradigms to examine fictional selves who project an imaginative world that mirrors and structures daily life.

## **International Hero and Anti-Hero (3)**

EN 5302

From the epic hero to the anti-hero and postmodern hero in literature.

## **International Literature and Modernism (3)**

EN 5303

Modernism as a concept; its beginnings as a major aesthetic and philosophical revolt, and its evolution as it is reflected in the literary works of British, of American, or of International Literature.

## **Classic Literature of Western World (3)**

EN 5325

Designed to familiarize the student with the classic works of the Western World from Dante and Moliere to more recent authors such as Sartre and Simone de Beauvoir. Works selected represent the various literary movements of the Western World.

## **Literature of American Minority Groups (3)**

EN 5326

A consideration of significant poetry and fiction by authors from three of these American Minority groups: African-American, Asian-American, Mexican-American, Native American Indian. It examines the historical, cultural, and philosophical aspects of these groups through a study of their literature and criticism. It includes works by writers such as Langston Hughes, Alice Walker, Ernest Gaines, Rudolfo Anaya, Roberta Fernandez, Leslie Silko, N. Scott Momaday, Maxine Hong Kingston, Amy Tan, Frank Chin.

## **Mexican & Other Latin American Literature (3)**

EN 5328

20th Century Latin American Literature focusing mainly on Mexican literature from the revolution to the present (Fuentes to Paz). It also incorporates Nobel and other award-winning authors of other Latin American cultures, such as Neruda, Bombal, Valenzuela.

# ENGLISH

## **Women Authors (3)**

EN 5330

Cross-cultural reading of the works of women authors. Study of the development of a woman's tradition in literature, with emphasis on the themes, genre, and writing styles created by 20th Century female authors.

## **U. S. Latino Literature (3)**

EN 5333

The course explores contemporary Hispanic-American authors of Mexican-American background particularly, as well as of Cuban-American and Puerto Rican-American backgrounds. A variety of literature, including novels, short stories, and poetry, will be read and analyzed. Through the works, issues of culture, ethnicity, assimilation, and heritage will be discussed. Among authors to be read are Sandra Cisneros, Rudolfo Anaya, Rosario FerrÃ©, Oscar Hijuelos, Rolando Hinojosa-Smith, and Ana Castillo.

## **Catholic Authors (3)**

EN 5335

The focus of this course is on the cultural, philosophical, historical, and religious vision of a selection of major Catholic authors from early writers, such as Dante and Sor Juana Ines to writers of the present time, such as Shusaku Endo, Flannery O'Connor, and Walker Percy.

## **Literature of Peace and War (3)**

EN 5340

A consideration of selected International Literature, from ancient Greece to the present, which expresses the concepts of war and peace, violence and non-violence. Emphasis is given to the philosophical and psychological concepts of conflict resolution (personal, historical and cultural) as they are expressed in literature. It includes poetry, fiction, and film from ancient Greece, Germany, England, Japan, the United States, and other nations.

## **The Romance throughout History (3)**

EN 5342

The lover as created in the dialogue of the subjective and social. From the foundations of the tradition in the Late Greek pastoral tradition and the medieval French and German romances from the English Renaissance to postmodernism.

## **Topics in International Literature (3)**

EN 5348

This course may develop a cross-cultural theme common to various nations, such as various world struggles, marriage and the family, religion and politics, philosophy and culture. Or the course may concentrate on one nation or region to study its culture, history, philosophy, and religion as portrayed through its literature.

## **Topics in International Lit (3)**

EN 5349

This course may develop a cross-cultural theme common to various nations, such as various world



# ENGLISH

struggles, marriage and the family, religion and politics, philosophy and culture. Or the course may concentrate on one nation or region to study its culture, history, philosophy, and religion as portrayed through its literature. The course may be taken a second time under EN 5348.

## **Special Studies (3)**

EN 5360

Innovative approach to selected topics in literature: literary genre, history, and criticism. Stress on relationship of literature to other disciplines. It also may include courses within other of the department's designated areas. Samples of such courses include these: Authorial Voice in Literature Science Fiction and Fantasy Detective Fiction Stages of Human Growth Film, Fiction, and Drama American Civil War Period Irish Literature Early American Literature Students may take a second version of this course, listed as EN 5391.

## **Special Studies (3)**

EN 5361

Innovative approach to selected topics in literature: literary genre, history, and criticism. Stress on relationship of literature to other disciplines. It also may include courses within other of the department's designated areas. Samples of such courses include these: Authorial Voice in Literature Science Fiction and Fantasy Detective Fiction Stages of Human Growth Film, Fiction, and Drama American Civil War Period Irish Literature Early American Literature Students may take a second version of the course, listed as EN 5360.

## **Internship in English (3)**

EN 5390

This second Internship may be taken as an Elective to further develop skills acquired in the first internship or to acquire different skills.

## **Internship in English (3)**

EN 5391

This course reinforces academic work by providing students with a range of opportunities for pre-professional work place experience. Open to juniors and seniors. Internships must follow general University guidelines and be approved by the Internship Coordinator. A second Internship may be taken as an Elective to further develop skills acquired in the first internship or to acquire different skills.

## **Senior English Capstone (3)**

EN 5395

Required of English majors and those with a concentration in English. The seminar focuses on developing the student's understandings and skills acquired through the study of Language, Literature, and Writing. The course is normally given only in the fall semester, so it should be taken in the fall of the senior year.

# ENGLISH AND COMMUNICATION ARTS

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

English & Communication Studies

## Department Chair

Dr. Kathleen Maloney [kmaloney@stmarytx.edu](mailto:kmaloney@stmarytx.edu)

## Description of Program/Major

Designed to meet the growing need for communication professionals skilled in a variety of writing styles, the English-Communication Arts major (EA) is a unique interdisciplinary degree plan which has been the choice for many successful alumni. The program offers students the opportunity to hone their critical thinking and writing abilities, integrating these with media-production skills, in preparation for rewarding careers and enriched lives in a rapidly changing world. Because the degree is rooted in the Humanities, students explore various areas in literature and theory to develop their metaphorical thinking and creative abilities.

The EA degree examines how the power of both language and image are used to promote the common good, as students wrestle with how their own communication practices enhance, not only their personal and professional pursuits, but also their engagement in the civic realm. Recent research by the National Association of Colleges and Employers and the National Commission on Writing indicates that communication skills, particularly written ones, are the skills employers most value in college graduates. Aware of this demand, EA majors graduate having trained in several writing styles in areas such as the following: journalism, public relations, technical writing, publication writing, and corporate communications. In their junior or senior year, students have the opportunity to apply their growing knowledge in a professionally based internship. Recent students have interned in the White House, Bromley Communications, the San Antonio Express-News, the Dallas Cowboys, the San Antonio Spurs, WOAI-TV, the Texas Department of Family and Protective Services, and the San Antonio Youth Organization, as well as many others.

## Degree Requirements

### Core Curriculum (SMC)

# ENGLISH AND COMMUNICATION ARTS

## St. Mary's University Core (30 Hours)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# ENGLISH AND COMMUNICATION ARTS

St. Mary's University

BA in English-Communication Arts (EA) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 2304 Foundation of Practice: Literature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 1313 Foundations of Reflection: Others	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	SSC Req History <sup>3</sup>	3	—	SSC Req Mathematics <sup>8</sup>	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	SSC Req Speech <sup>1</sup>	3
—	ND 0101 Personal & Academic Development	0			
Total		15	Total		15
Second Year Courses					
—	SMC 1314 Foundations of Reflection: God	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 2301 Foundations of Practice: Ethics	3	—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
—	SSC Req Literature <sup>5</sup>	3	—	EN 3300 Advanced Composition	3
—	EA 3353 Survey of Mass Communication	3	—	EA 3321 Print Journalism	3
—	Group B or C Elective **	3	—	EN 33XX Advanced Literature Elective	3
Total		15	Total		15
Third Year Courses					
—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	—	EA 4350 Career Seminar	3
—	Group A Elective *	3	—	EN 33XX Advanced Literature Elective	3
—	EA 3351 Communication Theory	3	—	Group A Elective *	3
—	EN or EA 33XX Advanced Writing Elective	3	—	Group A Elective *	3
—	EN 33XX Advanced Literature Elective	3	—	EN or EA 33XX Advanced Writing Elective	3
Total		15	Total		15
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	SSC Req Fine Arts <sup>4</sup>	3
—	SSC Req Science <sup>9</sup>	3	—	SSC Req Theology <sup>7</sup>	3
—	EA 5390 Internship	3	—	EN 33XX Advanced Literature Elective	3
—	Group B or C Elective **	3	—	Elective (PS 1301 or SC 1311 recommended)	3
—	EN 33XX Advanced Literature Elective	3	—	Group B or C Elective **	3
Total		15	Total		15

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1341, 2333 (recommended), or SE 1321 (international students),

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

\*Group A courses: EA 3321, EA 3322, EA 3323, EA 3331, EA 3333, EA 3341, EA 3342, EA 4321, EA 4330, EA 4360, EA 4366, EA 4361, EA 4362, EA 4363, EA 4364, EA 4367, EA 4368

\*\*Group B/C courses: AR 1311; BA 3325; EC 2301; MK 3310, MK 3330, MK 3340; SE 2321, SE 3341, SE 3391, SE 4341, SE 4351, SE 4365

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully passing the iCrit exam with a score of 250 or higher.

# ENGLISH AND COMMUNICATION ARTS

St. Mary's University  
BA in English-Communication Arts (EA) Degree Plan - 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1341, SE 2333 (recommended) or SE 1321 (for international students),	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **English-Communication Arts Major Courses (57 hours)**

__ EA 3321 – Print Journalism	3
__ EA 3351 – Topics in Communication Theory	3
__ EA 3353 – Survey of Mass Communication	3
__ EA 4350 – Career Seminar	3
__ EA 5390 – Internship in English Communication Arts	3
__ EN 3300 – Advanced Composition	3
__ EN 33XX – Advanced Literature	15
__ EA 33XX or EN 33XX – Advanced Writing	6
__ Group A Elective – EA 3321, EA 3322, EA 3323, EA 3331, EA 3333, EA 3341, EA 3342, EA 4321, EA 4330, EA 4360, EA 4366, EA 4361, EA 4362, EA 4363, EA 4364, EA 4367, EA 4368	9
__ Group B or C Elective – AR 1311; BA 3325; EC 2301; MK 3310, MK 3330, MK 3340; SE 2321, SE 3341, SE 3391, SE 4341, SE 4351, SE 4365	9

## **Electives (3 hours)**

__ Electives - An elective can be any course taken from any discipline but PS 1301 or SC 1311 recommended)	3
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## **Proficiency in Information Technology and Information Literacy**

__ For this major, this requirement will be fulfilled by successfully passing the iCrit exam with a score of 250 or higher.	
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# ENGLISH AND COMMUNICATION ARTS

## Department Courses and Descriptions

### **Media Writing and Reporting I (3)**

EA 3321

General introduction to reporting, interviewing, and writing for the media, from print news publications to the convergent settings of journalism. Required of all EA majors and should be taken as early in the program as possible. Lab fee: \$50.00. Writing intensive course.

### **Media Writing and Reporting II (3)**

EA 3322

Writing, reporting, interviewing, and editing for students of news, public affairs, and public relations through convergent media. Includes computer-assisted reporting, and articulating issues for public debate. Prerequisite: EA 3321. Lab fee: \$50.00.

### **Media Writing and Reporting III (3)**

EA 3323

For advanced students of media, covers news writing and reporting, editing, public affairs, public relations, the future of news. Includes framing and construction for investigative, enterprise, and interpretive news stories; argumentation and editorials; and organizational and entrepreneurial opportunities in converging media. Prerequisites: E3321 and EA 3322. Writing intensive course.

### **Free-Lance Writing (3)**

EA 3331

Focus on three areas: (1) developing writing skills required in business, (2) writing non-fiction articles for commercial publication, (3) preparing manuscripts for publication.

### **Corporate Communications (3)**

EA 3333

Practice in recognizing audience and being sensitive to a variety of readers—including those who are resistant or even hostile—through a range of communication problems designed to approximate the real work world.

### **Publication Writing (3)**

EA 3341

Development of skills and procedures required in preparing materials for publication. Includes feature writing, proof-reading, layout.

### **Technical Writing (3)**

EA 3342

Advanced writing in technical, scientific, and business fields. Designed to provide students with broad experience in technical report-writing formats, such as abstracts, proposals, operation manuals, progress reports, and other correspondence.

### **Topics in Communication Theory (3)**

EA 3351

Approach to selected topics in communication field, such as mass media, media ethics and

# ENGLISH AND COMMUNICATION ARTS

communication law, business and speech communication. Specific topic announced in course schedule. May be repeated one time under different topics.

## **Survey of Communication Theory (3)**

EA 3352

Foundational concepts, processes, and contexts of communication, including a discussion of human communication at the intrapersonal, interpersonal, group, and mass-communication levels.

## **Survey of Mass Communication (3)**

EA 3353

An overview of mass communication theory. Includes a study of the historical development of mass media, global implications of mass communication, and the relationship between mass media and the modern society.

## **Media Production I (3)**

EA 3360

Lab-based production course which introduces students to the basic principles of visual communication and design through photography, graphics, and video production with hands-on experience of each. It is a required prerequisite for all upper-division EA production courses. Lab fee: \$50.00

## **American Cinema-Drama (3)**

EA 4321

An in-depth study of American films, with emphasis on the characteristics of cinema-drama (as opposed to stage-drama). Short papers will be required throughout the course, as well as a final, longer paper.

## **New Technologies in Communication (3)**

EA 4330

Introduction to methods of forecasting and articulating an array of alternative futures and an exploration of the impact of emerging telecommunication technologies on potential futures.

## **Career Seminar (3)**

EA 4350

Focus on three areas of career development: (1) life-planning, an exploration of talents, skills, education, career interests; (2) intensive careers research, study and practice of procedures used in career search, including (3) resumes, interviews, letters of application. Course is writing intensive with strong emphasis on oral communication skills. Required of all EA majors, this course should be taken in the first semester senior year.

## **Media Production II (3)**

EA 4360

Lab-based production course focused on using digital technology to create online multimedia content. Development of basic skills in recording, editing, and producing audio and visual materials designed to communicate an effective message for a target audience. Students will establish and maintain a website, publishing their own multimedia projects online. Prerequisites: EA 3321 and EA 3360. Lab fee: \$50.00.

## **Media Production II (3)**

# ENGLISH AND COMMUNICATION ARTS

EA 4360

Lab-based production course focused on using digital technology to create online multimedia content. Development of basic skills in recording, editing, and producing audio and visual materials designed to communicate an effective message for a target audience. Students will establish and maintain a website, publishing their own multimedia projection online. Prerequisites: EA 3321 and EA 3360.

## **Audio Production (3)**

EA 4361

Lab-based production course that covers the fundamentals of audio theory through hands-on interaction with hardware and software tools commonly used in the industry. Prerequisites: EA 3360 (required) and EA 3321 (recommended). Lab fee: \$50.00

## **Graphic Design (3)**

EA 4362

Lab-based production course which emphasizes the visual aspects of communication by focusing on the creative process of using art and technology through computer-assisted page design and layout. Equal devotion is given to the theories of information design and visual journalism as well as the basic techniques used in page design and layout. Students produce a series of computer-generated print media and upon completion, a portfolio showcasing their best work. Prerequisites: EA3360 (required) and EA3321 (recommended).

## **Video Production (3)**

EA 4363

Theoretical background and practical experience in video production as applied to commercial and educational fields. Includes lectures and student productions utilizing studio equipment as well as portable cameras and editing decks. Prerequisite: EA 3360. Lab fee: \$50.00.

## **Basic Photography (3)**

EA 4364

Review of the basics and emphasis on printing and enlarging techniques of black and white and colored slide film. Prerequisite: EA 3360.

## **General Topics in Communication (3)**

EA 4365

Approaches to selected topics in the communication field.

## **Public Relations (3)**

EA 4367

Principles and concepts that guide the practice of public relations for both profit and non-profit organizations. Includes an overview of the historical development of public relations.

## **Issues in International Communication (3)**

EA 4368

A study of global communication in an interdependent, multicultural society. Topics include comparative media, information flow, and cultural imperialism.



# ENGLISH AND COMMUNICATION ARTS

## **Media Law and Ethics (3)**

EA 4369

A study of the conflict between press freedom and citizens' rights, and attempts to reconcile the two. Topics include libel, copyright, privacy, and a discussion of relevant ethical imperatives.

## **Internship in English-Communication Arts (3)**

EA 5390

This second Internship may be taken as an Elective to further develop skills acquired in the first Internship or to acquire different skills.

## **Internship in English-Communication Arts (3)**

EA 5391

This course reinforces academic work by providing students with a range of opportunities for pre-professional workplace experience. Open to juniors and seniors only. Internships must follow general University guidelines and be approved by the Internship Coordinator. Required of all majors. A second Internship (EA 5392) may be taken as an elective to further develop skills acquired in the first internship or to acquire different skills.

# EXERCISE AND SPORT SCIENCE

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Exercise and Sport Science

## Department Chair

Terri Boggess, Ph.D. [tboggess@stmarytx.edu](mailto:tboggess@stmarytx.edu)

## Description of Program/Major

Students interested in working in an active environment such as athletics, physical education, athletic training, fitness and personal training often choose the exercise and sport science major.

The exercise and sport science program at St. Mary's University prepares students for a broad array of careers and equips them with the academic knowledge and practical experience necessary to work in a recreational and fitness setting.

Students interested in teaching physical education and/or coaching in secondary schools often choose this major as a first or second teaching field.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3

# EXERCISE AND SPORT SCIENCE

SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# EXERCISE AND SPORT SCIENCE

St. Mary's University

BA in Exercise and Sports Science (EX) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall			Spring		
		Hr			Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SSC Req Speech <sup>1</sup>	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Fine Arts <sup>4</sup>	3
—	SSC Req Mathematics <sup>8</sup>	3	—	SSC Req Science <sup>9</sup>	3
—	EX 1302 Foundations of EXSS	3	—	EX 1304 Spring Sports	3
—	ND 0101 Personal & Academic Development	0			
	Total	15		Total	15
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 1314 Foundations of Reflection: God	3	—	SMC 2304 Foundation of Practice: Literature	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	EX 2302 Fall Sports	3	—	EX 3376 Human Anatomy & Physiology	3
—	Elective**	3	—	Elective**	3
	Total	15		Total	15
Third Year Courses					
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SSC Req Literature <sup>5</sup>	3	—	SSC Req Theology <sup>7</sup>	3
—	EX 3304 Biomech of Human Movement	3	—	EX 3308 Tests and Measurements	3
—	EX 3302 Prevention & Care of Ath Injuries	3	—	Elective**	3
—	Elective**	3	—	Elective**	3
	Total	15		Total	15
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	SSC History <sup>3</sup>	3
—	EX 4304 Adv Principles of EXSS	3	—	EX 4301 Wellness	3
—	Elective**	3	—	EX 3306 Current Issues in EXSS	3
—	Elective**	3	—	Elective**	3
—	Elective**	3	—	Elective**	3
	Total	15		Total	15

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

\*\*An elective can be any course taken from any discipline

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully passing the iCrit exam with a score of 250 or higher.

# EXERCISE AND SPORT SCIENCE

St. Mary's University  
BA in Exercise and Sports Science (EX) Degree Plan – 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3303	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Exercise and Sport Science Major Courses (30 hours)**

__ EX 1302 – Foundations of Exercise and Sport Science	3
__ EX 1304 – Spring Sports	3
__ EX 2302 – Fall Sports	3
__ EX 3302 – Prevention and Care of Athletic Injuries	3
__ EX 3304 – Biomechanics of Human Movement	3
__ EX 3306 – Current Issues in Exercise and Sport Science	3
__ EX 3308 – Tests and Measurements	3
__ EX 3376 – Human Anatomy and Physiology	3
__ EX 4301 – Wellness	3
__ EX 4304 – Advanced Principles in Exercise and Sport Science	3

## **Electives (30 hours)**

__ Electives - An elective can be any course taken from any discipline.	30
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully passing the iCrit exam with a score of 250 or higher.

# EXERCISE AND SPORT SCIENCE

## Department Courses and Descriptions

### **Foundation of Exercise&Sport S (3)**

EX 1302

Historical and philosophical background of Exercise and Sport Science exam - ined as well as current career options within the discipline.

### **Spring Sports & Activities (3)**

EX 1304

The following sports/activi ties are covered: softball, track & field, soccer, golf, tennis, outdoor education & orienteering, racquetball, weight lifting, badminton, dance.

### **Fall Sports & Activities (3)**

EX 2302

The following sports/activities are covered: flag football, volleyball, basketball, field hockey, wrestling, archery, swimming, bowling, gymnastics.

### **Essential Elem of Human Perfor (3)**

EX 2381

Background knowledge and practice in the basic elements of human perform - ance, health, and safety for children.

### **Topics in Exercise&Sports Scie (3)**

EX 2399

Topics in Exercise & Sport Science (Elective credit only)

### **Selected Topics (1)**

EX 3112

Courses under this number will address a variety of topics such as Sport Sociol - ogy, Dance, etc.

### **Selected Topics (2)**

EX 3212

Courses under this number will address a variety of topics such as Sport Sociol - ogy, Dance, etc.

### **Preven&Care of Acti-Relat Inju (3)**

EX 3302

The relationship of proper conditioning and protective equipment to injury pre - vention is stressed. Basic First-aid instruction and taping techniques are covered.

### **Biomechanics of Human Movement (3)**

EX 3304

Study of the inter-relationships of structure and function in the living being. Study of the physics of motion of the human being with emphasis placed on the forces produced by the acting upon the human body. Prerequisite: BL 3420 Anat - omy.

### **Current Issues in Exercise&Spo (3)**

# EXERCISE AND SPORT SCIENCE

EX 3306

Addresses topics such as working with special populations, legal issues, ethical decision-making (e.g., use of steroids, drug-testing of athletes, women in sports).

## **Tests and Measurements (3)**

EX 3308

Study of performance tests in exercise and sport science including history, statistics, practice in making and giving tests, scoring and interpreting, grading and evaluation.

## **Selected Topics (3)**

EX 3312

Courses under this number will address a variety of topics such as Sport Sociology, Dance, etc.

## **Human Anatomy & Physio of Exer (3)**

EX 3376

Basic concepts of the structure and function of the human body, as related to exercise.

## **Coaching Practicum (2)**

EX 4208

Students desiring a more intensive study of coaching may register for an internship from the following: football, basketball, volleyball, baseball, softball, soccer and track & field.

## **Wellness (3)**

EX 4301

Study of lifetime fitness and wellness. Topics covered include nutrition, cardiovascular health and wellness, stress management, body composition, substance abuse, lifestyle management, and other pertinent topics. Students will design curriculum materials which incorporate these areas as well as practice teaching lessons in the topical areas.

## **Advanced Principles of Exercise (3)**

EX 4304

Organization and administration of effective programs. Assessment of individual needs and planning for instruction to meet those needs; program evaluation.

## **Internship in Recreation & Fitness (3)**

EX 4310

(Open to seniors only) This course supplements academic work by providing students with practical career experience in the areas of Recreation and Fitness Management.

# FORENSIC SCIENCE

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Criminal Justice and Criminology

## Department Chair

Armando J. Abney, Ph.D. [aabney@stmarytx.edu](mailto:aabney@stmarytx.edu)

## Description of Program/Major

St. Mary's newest major, forensic science is an exciting field and one of the country's fastest growing job markets. Solving crime requires knowledge of biological, physiological, social and individual factors. St. Mary's program integrates biological science, social science and professional preparation so students are uniquely prepared for this cutting edge career path.

Forensic science is the application of science to the law. It relies on the physical and behavioral sciences for investigating and solving crimes and examining physical trace evidence. The School's forensic science degree with a criminology option emphasizes the integration of academic preparation and real world problem solving with a focus on ethical and professional commitment.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3



# FORENSIC SCIENCE

SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# FORENSIC SCIENCE

St. Mary's University  
 BA in Forensic Science (Criminology Option) Degree Plan  
 (This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
 "Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
	Fall	Hr		Spring	Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	SMC 1311 Foundations of Reflection: Self	3	___	SSC Req Foreign Language <sup>6</sup>	3
___	SSC Req Foreign Language <sup>6</sup>	3	___	BL 1402 General Biology	4
___	BL 1401 General Biology	4	___	CH 1402 (pre-req for CH req in major)	4
___	CH 1401 (pre-req for CH req in major)	4	___	CR 1311 Introductory Sociology	3
___	ND 0101 Personal & Academic Development	0			
	Total	17		Total	17
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	SMC 1314 Foundations of Reflection: God	3	___	SMC 2304 Foundation of Practice: Literature	3
___	SSC Req Math - MT 1303 College Algebra	3	___	SSC Req Composition & Rhetoric <sup>2</sup>	3
___	CH 3411 Organic Chemistry I	4	___	SSC Req History <sup>3</sup>	3
___	CR 3335 Survey of Forensic Science	3	___	BL 3141 Medical Terminology	1
			___	CR 3336 Crime Scene Investigation	3
	Total	16		Total	16
Third Year Courses					
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
___	SSC Req Fine Arts <sup>4</sup>	3	___	SSC Req Theology <sup>7</sup>	3
___	BL 3442 Forensic Osteology	4	___	BL 3430 General Physiology	4
___	CR 3325 Criminology	3	___	CR 3320 Social Stratification	3
___	CR 3332 Statistics in Criminology	3	___	CR 3338 Forensic Lab Techniques	3
	Total	16		Total	16
Fourth Year Courses					
___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	___	SSC Req Literature <sup>5</sup>	3
___	CR 3330 Research Methods in Criminology	3	___	SSC Req Speech <sup>1</sup>	3
___	CR 3337 Forensic Criminology	3	___	BL 3440 Toxicology	4
___	CR 3360 Sex Crimes & Violent Crimes	3	___	CR 3339 Forensic Victimology	3
___	CR 33XX Elective (CR 3314 preferred)	3	___	CR 4308 Internship in Forensic Science	3
	Total	15		Total	16

Total Hours 129

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*, DM \*\*\*, MU \*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year: Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied: Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing CJ 3330 or CJ 3331.

# FORENSIC SCIENCE

St. Mary's University  
BA in Forensic Science (Criminology Option) Degree Plan  
129 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (31 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1303	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1401	4
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Forensic Science (Criminology Option) Major Courses (68 hours)**

__ BL 1402 – General Biology	4
__ BL 3141 – Medical Terminology	1
__ BL 3430 – General Physiology	4
__ BL 3440 – Toxicology	4
__ BL 3442 – Forensic Osteology	4
__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry I	4
__ CH 3411 – Organic Chemistry I	4
__ CR 1311– Introductory Sociology	3
__ CR 3320 – Social Stratification	3
__ CR 3325 – Criminology	3
__ CR 3330 – Research Methods in Criminology	3
__ CR 3332 – Statistics in Criminology (or SC 3381 Intro to Statistics – please see advisor)	3
__ CR 3335 – Survey of Forensic Science	3
__ CR 3336 – Crime Scene Investigation	3
__ CR 3337 – Forensic Criminology	3
__ CR 3338 – Forensic Lab Techniques	3
__ CR 3339 – Forensic Victimology	3
__ CR 3360 – Sex Crimes and Violent Crimes	3
__ CR 4308 – Internship in Forensic Science	3
__ CR 33XX – Criminology Elective (CR 3314 Substance Abuse recommended)	3

## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing CJ 3330 or CJ 3331.

# FORENSIC SCIENCE

## Department Courses and Descriptions

### **Introductory Sociology (3)**

CR 1311

An introduction to the scope and methods of sociology, emphasizing the concepts of social structure, organization, institution, culture and socialization, and including analyses of primary and secondary groups, sex roles, social control, stratification, minorities, collective behavior, and population dynamics. Prerequisite for all courses in the Criminology program.

### **Police Role in Crime&Delinquen (3)**

CR 2308

Study of police strategies and practices in the prevention and control of crime among juveniles.

### **Topics in Criminal Justice (3)**

CR 2399

Topics in Criminal Justice (for elective credit only)

### **International Justice system (3)**

CR 3303

A cross-national study of crime and crime control.

### **Law and Society (3)**

CR 3305

Study of the interaction between the U.S. legal and social cultures.

### **Qualitative Research Methods (3)**

CR 3306

An introduction to the methods used to conduct qualitative research in natural social settings. An examination of the methods of ethnography, participant observation/non-participant observation, focus group, interview, and use of documentary sources included. Students may have the opportunity to engage in hands-on research. Additional topics include data coding, data analysis, and research ethics.

Prerequisites: Junior standing

### **Corrections in the Community (3)**

CR 3310

Study of probation, parole, and other community-reintegration procedures.

### **Correctional Counsel&Treatment (3)**

CR 3312

Study of the scope and purposes of correctional treatment and techniques of correctional counseling.

### **Correctional Institutions (3)**

CR 3313

Study of the philosophy, organizational structure and practices of correctional institutions.

### **Substance Abuse (3)**

# FORENSIC SCIENCE

CR 3314

Introduction to chemical dependency and the factors associated with the abusive use of chemicals; factors associated with helping the chemically dependent person.

## **Social Stratification (3)**

CR 3320

An analysis of social stratification utilizing social class as the unit of study. The course will focus on the structure of social classes in the U.S. as a major factor influencing individual and group life chances with regards to education, crime, health, and disease, world views and life styles.

## **Victimology (3)**

CR 3323

Study of crime victims and their interaction with offenders, criminal justice officials, and the public.

## **Juvenile Delinquency (3)**

CR 3324

An examination of juvenile delinquency in the U.S.: its nature, extent, causes, effects, prevention and rehabilitation. Sociological approaches to delinquency are emphasized, but psychological and legal approaches are also considered.

## **Criminology (3)**

CR 3325

An overview of the study of crime and the development of criminology. The nature, extent, causes, effects, rehabilitation and prevention of crime are examined from a sociological perspective. Psychological, legal, and philosophical approaches to crime are also considered.

## **Interviewing Techniques (3)**

CR 3326

An introduction to principles, strategies, techniques and practical skills involved in interviewing. Major types of interviews are considered, including information-gathering, information-providing, and counseling. Personal involvement and experience in conducting and evaluating actual interviews.

## **Mediation Techniques (3)**

CR 3327

Study of methods and techniques of conflict resolution, communications, mediation, and diversity awareness. Upon completion of CJ 3327, students wishing to receive a Certificate of Training as a mediator must complete either CJ 4303 (Internship) or 100 hours of volunteer service as a mediator in an appropriate setting approved by supervising faculty.

## **Research Methods Crim Justice (3)**

CR 3330

Study of methods and techniques of social research with an emphasis on criminology and criminal justice.

## **Computer Tech in Criminal Just (3)**

CR 3331

Inegrating computer application and research methods. Prerequisite: CJ 3330 or concurrently enrolled in

# FORENSIC SCIENCE

CJ 3330.

## **Statistics in Criminology (3)**

CR 3332

An introduction to inferential and descriptive statistics in the field of criminology. The course provides students with first-hand experience in the use of statistics and statistical packages.

## **Survey of Forensic Science (3)**

CR 3335

Course is designed to present an overview of the different areas of the Forensic Sciences. These areas include but are not limited to Pathology, Crime Scene Investigation, Ethics, Criminalistics, and Technology.

## **Crime Scene Investigation (3)**

CR 3336

Introduction to techniques of crime scene investigation. Emphasis will be on scene diagramming, search techniques, and presentation of different categories of evidence.

## **Forensic Criminology (3)**

CR 3337

This course blends the physical sciences with the science of criminology in the understanding, investigation, and the deterrence of crime.

## **Forensic Lab Techniques (3)**

CR 3338

Laboratory and field exercises pertaining to the forensic sciences.

## **Forensic Victimology (3)**

CR 3339

This course provides an understanding of the field of victimology as it is used to address investigative and forensic issues and problems.

## **The Family (3)**

CR 3343

A study of the family as an institution and social system, including discussions of dating and mate selection, premarital and extramarital sex, birth control, abortion, illegitimacy, family planning, spousal relationships, interracial and interfaith marriages, socialization, social control, and change.

## **Social Psychology (3)**

CR 3351

Theories and research on social factors in behavior, including such topics as attitudes, perception, leadership, and attraction.

## **Sex Crimes & Violent Crimes (3)**

CR 3360

The application of the forensic sciences to the investigation of sex crimes.

# FORENSIC SCIENCE

## **Urban Sociology (3)**

CR 3361

An analysis of cities, their historical development and social organization. Topics include urbanization in developed and developing societies, urban stratification and lifestyles, and urban, metropolitan and regional planning.

## **Demography and Ecology (3)**

CR 3362

The demographic study of human populations, including fertility, mortality, migration, age, sex, class composition. The ecological study of relations between human societies and their environments. Analysis of environmental problems and proposed solutions.

## **Minority Relations (3)**

CR 3371

A study of ethnic, religious and racial relations in the U.S. and other countries. Topics include power relationships, prejudice, discrimination, ethnic stratification, migration, assimilation and pluralism. Minorities to be considered include Blacks, Mexican-Americans and Native Americans.

## **Senior Seminar in Criminal Jus (3)**

CR 4302

Capstone course designed to evaluate knowledge and skills acquired by criminal justice and criminology students about their discipline. Students will design, analyze, write, and present a research project. The student must demonstrate knowledge of computer applications to research methodologies. In addition, the student must demonstrate critical thinking, problem-solving, oral and written communication skills, and the ability to effectively work within groups.

## **Internship in Crimi Just&Crimi (3)**

CR 4303

The student must acquire a minimum of 160 hours of practical experience in an approved criminal justice or social service agency. Unless an exception is made, this course is to be taken between the junior and senior years.

## **Indept Study in Criminology (3)**

CR 4304

Based on the student's professional and academic interest, the instructor will design an individualized reading course for the student.

## **Special Topics in Criminal Jus (3)**

CR 4305

Selected topics in criminal justice or criminology.

## **Internship in Forensic Science (3)**

CR 4308

Fieldwork experience in a criminal justice or related agency. A minimum of 160 hours of work experience is required.

# FORENSIC SCIENCE



# FRENCH

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Languages

## Department Chair

Eva P. Bueno, Ph.D. [ebueno@stmarytx.edu](mailto:ebueno@stmarytx.edu)

## Department Courses and Descriptions

### Introduction to French I (3)

FR 1311

Essentials of French. An introduction to the four phases of language learning: understanding, reading, speaking, and writing French, and an introduction to French culture. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Enrollment restricted to students with no prior experience in French. Students who have been introduced to French at home or in high school should take FR 2311 and 2312. FR 1311 is a prerequisite for FR 1312. Permission of Department Chair required.

### Introduction to French II (3)

FR 1312

Essentials of French. An introduction to the four phases of language learning: understanding, reading, speaking, and writing French, and an introduction to French culture. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Enrollment restricted to students with no prior experience in French. Students who have been introduced to French at home or in high school should take FR 2311 and 2312. FR 1311 is a prerequisite for FR 1312. Permission of Department Chair required.

### Second Year French I (3)

FR 2311

French language reviewed and applied to practice in composition. Course includes practice in comprehension of spoken French and guided speaking, reading, and writing activities leading to self-expression in the French language. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. French 2311 or

# FRENCH

equivalent obtained through experience, CLEP, or Advanced Placement Exams is a prerequisite for FR 2312.

## **Second Year French II (3)**

FR 2312

French language reviewed and applied to practice in composition. Course includes practice in comprehension of spoken French and guided speaking, reading, and writing activities leading to self-expression in the French language. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. French 2311 or equivalent obtained through experience, CLEP, or Advanced Placement Exams is a prerequisite for FR 2312.

## **Culture & Civilization of France (3)**

FR 3311

A survey of the social, political, artistic, and cultural institutions of the French people, designed to provide a better understanding of their way of life. Taught principally in French. Prerequisite: FR 2312.

## **Contemporary Culture of France (3)**

FR 3312

A study of the contemporary cultural climate, issues and concerns of France, French-speaking Africa, Quebec, and other Francophone areas of the world. Taught principally in French. Prerequisite: FR 2312

## **Introduction of French Lit (3)**

FR 3330

An introduction to the literary techniques and vocabulary needed to analyze, discuss and write about French works of prose, poetry, and drama. Taught principally in French. Prerequisite: FR 2312

## **Survey of French Literature (3)**

FR 3332

An introduction to the representative selections of French literature from the Middle Ages to the Twentieth century. Taught principally in French. Prerequisite: FR 2312

## **Advanced Communication Skill I (3)**

FR 3361

A systematic review of French grammar with principles applied to written discourse. The course will also include the analysis and discussion of written texts. Taught principally in French. Prerequisite: FR 2312

## **Advanced Communication Skills II (3)**

FR 3362

Students will focus on developing oral proficiency through the discussion of selected readings and audio-visual materials related to current events, topics of interest, and key problems and issues. Vocabulary building and writing exercises will also be a component of this course. Taught principally in French. Prerequisite: FR 2312

## **French Phonetics & Oral Discou (3)**

# FRENCH

FR 3370

The principles of French phonetics and pronunciation will be studied and applied to a wide variety of oral discourse such as speeches, poetry recitation, and news briefs. Taught principally in French. Prerequisite: FR 2312

## **French Language for the Profes (3)**

FR 3381

Review of Grammar. Incorporates the language and vocabulary relating to a variety of professions such as medicine, business, law, education, and sociology so as to enable the student anticipating a career in these professions to convey his/her skills in French. Includes the principles of writing business letters, summaries, and reports. Prerequisite: FR 2312

## **Topics in French (3)**

FR 3382

Study of any one of the broad range of topics in contemporary French language, culture and civilization to include issues of the day. May be taken twice if the topic is different. Prerequisite: FR 2312.

## **19th&20th Century French Prose (3)**

FR 4321

Reading and analysis of representative authors of the period. Taught in French. Prerequisite: FR 3330 or 3332.

## **Major Works of Contem Fran Lit (3)**

FR 4332

A survey of contemporary francophone writers from Africa, the French West Indies, Quebec, Belgium, and Switzerland. Taught in French. Prerequisite: FR 3331 or 3332.

## **Main Current of French Poetry (3)**

FR 4341

A study of the prominent movements in French Poetry; reading and analysis of masterpieces of French poetry. Taught in French. Prerequisite: FR 3330 or 3332.

## **Seminar in French Lit (3)**

FR 4351

An in-depth study of the works of one author or of a theme that is treated by various authors. Taught in French. Prerequisite: FR 3330 or 3332

## **Special Topics in French Drama (3)**

FR 4362

A study of one of various periods of French drama. May be taken twice if the topic is different. Taught in French. Prerequisite: FR 3331 or 3332.

## **Principles&Issues of 2nd Langu (3)**

FR 4382

The course will include a study of the nature of language, theories of 1st and 2nd language acquisition and learning, communicative strategies, language teaching methodologies, and issues related to teaching

# FRENCH

foreign languages. This course should be taken just prior to doing student teaching.

# GERMAN

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Languages

## Department Chair

Eva P. Bueno, Ph.D. [ebueno@stmarytx.edu](mailto:ebueno@stmarytx.edu)

## Department Courses and Descriptions

### Intro to German I (3)

GR 1311

Essentials of German. An introduction to the four phases of language learning: understanding, reading, speaking, and writing German, and an introduction to German culture. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Enrollment restricted to students with no prior experience in German. Students who have been introduced to German at home, or in high school, should take GR 2311 and 2312. GR 1311 is a prerequisite for GR 1312. Permission of the Department Chair is required.

### Introduction to German II (3)

GR 1312

Essentials of German. An introduction to the four phases of language learning: understanding, reading, speaking, and writing German, and an introduction to German culture. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Enrollment restricted to students with no prior experience in German. Students who have been introduced to German at home, or in high school, should take GR 2311 and 2312. GR 1311 is a prerequisite for GR 1312. Permission of the Department Chair is required.

### Second Year German I (3)

GR 2311

German grammar reviewed and applied to practice in composition. Course includes practice in comprehension of spoken and guided speaking, reading, and writing activities leading to self-expression in the German language. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. GR 2311 or

# GERMAN

equivalent obtained through CLEP or Advanced Placement Exams is a prerequisite for GR 2312.

## **Second Year German II (3)**

GR 2312

German grammar reviewed and applied to practice in composition. Course includes practice in comprehension of spoken and guided speaking, reading, and writing activities leading to self-expression in the German language. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. GR 2311 or equivalent obtained through CLEP or Advanced Placement Exams is a prerequisite for GR 2312.

# HISTORY

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

History

## Department Chair

Gerald Poyo, Ph.D. [gpoyo@stmarytx.edu](mailto:gpoyo@stmarytx.edu)

## Description of Program/Major

The undergraduate history program at St. Mary's University is committed to developing historically literate students who identify with a present profoundly linked to the past, from which they can better shape an ethically responsible community.

The Department of History strives to increase students' awareness of the complexity and diversity of human societies and prepare them to encounter a world different than the one they imagined. The skills students learn, such as research, writing, critical thinking, interpretation, and oral and written presentation, prepare them for the world of work, including the private sector and government, or for advanced graduate study and law school.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3

# HISTORY

SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan



# HISTORY

St. Mary's University  
BA in History (HS) Degree Plan - 2011

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SSC Req Composition & Rhetoric <sup>2</sup>	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	SSC Req Speech <sup>1</sup>	3	—	HS 1302 US Since 1877	3
—	HS 1301 US to 1877	3	—	SMC 1314 Foundations of Reflection: God	3
—	ND 0101 Personal & Academic Development	0			
	Total	15		Total	15
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SSC Req Mathematics <sup>8</sup>	3	—	SMC 2304 Foundation of Practice: Literature	3
—	HS 1303 Intro to Latin America	3	—	SSC Req Social Science <sup>3</sup>	3
—	HS 1351 World Civilization to 1650	3	—	HS 135 World Civilization since 1650	3
—	HS 33XX	3	—	HS 43XX	3
	Total	15		Total	15
Third Year Courses					
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SSC Req Literature <sup>5</sup>	3	—	SSC Req Fine Arts <sup>4</sup>	3
—	SSC Req Science <sup>9</sup>	3	—	SSC Req Theology <sup>7</sup>	3
—	HS 53XX	3	—	HS 5390 Historiography, Method & Research	3
—	Elective	3	—	Elective	3
	Total	15		Total	15
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	HS 33XX/43XX/53XX	3
—	HS 5391 History Thesis II: Historical Writing	3	—	HS 5392 History Thesis III: Manuscript Preparation	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
	Total	15		Total	15

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: Any EN 23XX literature course

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing HS 5396, HS 5397, and HS 5398 or passing the iCrit exam with 250.

# HISTORY

St. Mary's University  
BA in History (HS) Degree Plan – 2011  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU	3
__ Literature – Any EN 23XX literature course	3

## **History Major Courses (36 hours)**

__ HS 1301 – United States to 1877	3
__ HS 1302 – United States since 1877	3
__ HS 1303 – Introduction to Latin America	3
__ HS 1351 – World Civilization to 1650	3
__ HS 1352 – World Civilization since 1650	3
__ HS 5390 – History Thesis I: Historiography, Method and Research	3
__ HS 5391 – History Thesis II: Historical Writing	3
__ HS 5392 – History Thesis III: Manuscript Preparation	3
__ HS Electives – HS 33XX	3
__ HS Electives – HS 43XX	3
__ HS Electives – HS 53XX	3
__ HS Electives – HS 33XX, 43XX, 53XX	3

## **Electives (24 hours)**

__ Electives - An elective can be any course taken from any discipline.	24
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## **Proficiency in Information Technology and Information Literacy**

__ For this major, this requirement will be fulfilled by successfully completing HS 5396, HS 5397, and HS 5398 or passing the iCrit exam with 250.
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# HISTORY

## Department Courses and Descriptions

### **Hist Analysis:US Hist to 1877 (3)**

HS 1301

Emphasis on selection of evidence and management of perspective in examining colonial societies, conflicting cultures and the rise, collapse, and reconstruction of the nation.

### **Hist Analysis:US Hist since 1877 (3)**

HS 1302

Emphasis on selection of evidence and management of perspective in examining the rise of an urban-industrial society and effects on minorities and gender. The rise of a world power and domestic and international consequences.

### **Historical Analysis: Intro Latin American History (3)**

HS 1303

Emphasizing analytical approaches to the study of Latin American history, the course will explore critical political, economic, social, and cultural developments over five centuries that give the region a shared identity.

### **World Civilization to 1650 (3)**

HS 1351

Political, economic, social, and cultural developments from prehistoric times through the age of exploration, colonization, and the commercial revolution. Analysis of the development of important ideas and problems.

### **World Civilization since 1650 (3)**

HS 1352

A study of the political, economic, social, and cultural formation of the modern world from the age of absolutism to present times.

### **Creation of the American Republic (3)**

HS 3302

European exploration and British colonization, conflict with Native Americans, the origin of American politics and the building of a nation.

### **Jacksonian America (3)**

HS 3306

The transportation revolution, the emergence of democratic politics, cultures at odds, utopian communities and the rise of sectional ism.

### **Civil War and Reconstruction (3)**

HS 3308

The failure of sectional compromise, ante-bellum slavery, two societies at war, national reunion and the plight of the ex-slave.

### **Lincoln, Slavery and the Civil War (3)**

# HISTORY

HS 3309

Examines the life of Lincoln with particular emphasis on his changing views of slavery before and during the Civil War, and his role as Commander and Chief including his relationships with generals and cabinet. The broad focus of the course explores North American slavery and the travail of Civil War intersected by what has been called "The Age of Lincoln."

## **U.S. Immigration and Ethnic History (3)**

HS 3310

Traces the history of immigration to the United States and the formation and evolution of ethnic communities from the eighteenth through the twentieth centuries. Examines the ways in which diverse immigrant communities interacted with the dominant society and how the dominant society in turn adapted to varying and distinct waves of immigrants. Focus is on the effect of racial-ethnic diversity in United States history and on the implications of diversity for the nation's future.

## **Twentieth Century America (3)**

HS 3312

Intentional conflict and domestic transformation: the World Wars, the Cold War, Korea, Vietnam, Progressivism, consumerism, the Great Depression and the New Deal, ethnic and gender conflict and empowerment.

## **U.S. Expansionism: The 19th Century West (3)**

HS 3322

U.S. Expansionism from the Atlantic to the Pacific. A study of the economic, political, and cultural developments as the United States expanded its national territory on the basis of domestic and international wars, treaty, and purchase of land.

## **History of Texas (3)**

HS 3324

Survey from the end of the Hispanic period to the early 20th Century; Anglo- American colonization; the Republic, annexation and statehood; Civil War, Post-Civil War.

## **Chicana/o History (3)**

HS 3340

Examines the history and culture of the Mexican origin population in the United States from the Treaty of Guadalupe Hidalgo in 1848 to the post-Chicana/o Movement of the late 20th century.

## **U.S. Latino History (3)**

HS 3341

Explores issues of identity, diversity and commonality in immigration and community building processes of Latin American background people in the United States. Special emphasis on historiography that treats Latinos within a single conceptual context.

## **History of American Foreign Policy (3)**

HS 3347

The historical development of the U.S. foreign policy from the Revolution to the present, with emphasis on the rise of the United States as a world power.

# HISTORY

## **History of World War II (3)**

HS 3348

Rise of the dictators and appeasement in Europe. Lapses in U.S. neutrality; Pearl Harbor and war on two fronts; build up to D-Day; Naval war in the Pacific; atomic conclusion with Japan.

## **American Biography (3)**

HS 3350

Examination of diverse biographical genres with emphasis on figures who shaped or represented larger facets of American life.

## **U.S. Women's History (3)**

HS 3352

Study of women and gender in the history, politics, and culture of the United States, with an emphasis on the 19th and 20th centuries.

## **U.S. Military History (3)**

HS 3355

American military institutions, policies, experiences, and traditions in peace and war from colonial times to the present. Emphasis will be on the relationship between the military and other institutions of American society. Analysis of basic military tactics, weapons systems, and equipment is conducted.

## **Directed Studies (3)**

HS 3372

Participants engage in research and study based upon an enriching experience not available in formal classroom presentations. Advanced standing and department approval required.

## **Topics in US History (3)**

HS 3375

A study of a specific topic in American History. May be repeated when the topic changes.

## **Colonial Latin America (3)**

HS 4302

Latin America's colonial heritage from the time of European-Indian contact to independence from Spain and Portugal (late 15th through early 19th centuries). Central themes include the rise and fall of Spanish and Portuguese colonial empires in the Americas, including their political, social and economic components. Time to be spent on tracing the emergence of Latin American culture as an expression of Spanish, Indian, and African interactions over three centuries.

## **Modern Latin America (3)**

HS 4306

Latin America during the nineteenth and twentieth centuries, from the emergence of undefined political entities in the 1820s to the consolidation of national identities after the 1930s. Identify identity and examine central political, economic, social, and cultural themes that provide an understanding of the region as a whole.

# HISTORY

## **The Spanish/Mexican/U.S. Borderlands in North America (3)**

HS 4322

A study of the peoples and cultures in the geographical region of the contemporary U.S./Mexican Borderlands from the 14th century to the present, with emphasis on the colonization and evolution of the Southeastern and Southwestern Borderland states of Arizona, California, Florida, Louisiana, New Mexico, and Texas.

## **Modern Mexico (3)**

HS 4324

Development of Mexico from independence to the present. Emphasizing issues of regionalism and tenuous nationality in the nineteenth century and the emergence of an integrated political, cultural, and socioeconomic system in the twentieth century.

## **Topics in Latin American History (3)**

HS 4375

Topics will range from national histories to critical themes in the Latin American history. Topics may vary and course may be repeated.

## **Medieval Europe (3)**

HS 5304

European political, economic, social and cultural development from the end of the Roman period to the emergence of the dynastic states.

## **Renaissance and Reformation (3)**

HS 5306

Analysis of political, social, religious and intellectual evolution of Europe in "middle period": late 13th century to wars of religion.

## **Main Currents of 19th Century Europe (3)**

HS 5312

Political, economic, social, and cultural developments during the period from the end of the Napoleonic Wars to World War I.

## **Contemporary Europe (3)**

HS 5314

Developments from the beginning of World War I through the end of the Cold War, including the road to war in 1914, the peace settlements, democracies in crisis, the rise of totalitarianism, World War II, postwar developments, and the collapse of communism.

## **Imperial Russia:1672-1917 (3)**

HS 5320

Study of Russia under the Romanov Dynasty (1613-1917). The course will focus on political, diplomatic, economic, social, cultural, and religious developments from the time of Peter the Great through the reign of Nicholas II.

## **Russia:The Soviet Period and After (3)**

# HISTORY

HS 5324

Rise, development, and fall of the Soviet Union; including revolutionary movements in the 19th century, the Russian Revolution, achievements and failures of Lenin and Stalin, Soviet postwar domestic and foreign policy, the Cold War, and the collapse of Communism.

## **The Balkans and Eastern Europe (3)**

HS 5325

A study of the political, economic, social and cultural development of Poland, Czechoslovakia, former East Germany, Hungary, Romania, Bulgaria, Yugoslavia, and Albania from earliest beginnings to contemporary events.

## **The History of Spain (3)**

HS 5326

From Ancient and Medieval Spain to the modern period, with special emphasis on foundation and development of imperial institutions.

## **History of Modern Germany (3)**

HS 5334

Political, economic, social, and cultural developments in Germany from the period of the Napoleonic Wars through the time of reunification.

## **History of Western Art I (3)**

HS 5361

Principal periods in the history of western art from the paleolithic period to the Gothic.

## **History of Western Art II (3)**

HS 5362

Principal periods in the history of western art from the Renaissance to the present.

## **Topics in European History (3)**

HS 5375

A study of a specified topic in European history. May be repeated when the topic changes.

## **History of Christianity (3)**

HS 5376

The history of Christianity, its branches, institutions and influence in world history. The major themes will focus on the processes of change, adaptation and reform, and inculturation.

## **History of Africa (3)**

HS 5380

A survey of the history of sub-Saharan Africa. A review of the ancient and medieval periods, with emphasis on the modern period: pre-colonial kingdoms, the slave trade, European colonialization, and independence.

## **History of the Far East (3)**

HS 5385

# HISTORY

A survey of Asian history from earliest times to the present, with emphasis upon China, India and Japan.

## **A Global History of Warfare (3)**

HS 5386

An exploration into the development of warfare in several cultures from the earliest civilizations to the present day. Students will investigate significant advances in military technology, strategy, and tactics by studying many of the most important wars, battles, and military figures. The course will also examine the ways in which approaches to and ideas about warfare have evolved. In addition, students will learn how war has shaped the course of human history.

## **Topics in World History (3)**

HS 5388

A study of a specified topic in World history. May be repeated when the topic changes.

## **History Thesis I: Historiography, Method and Research (3)**

HS 5390

First of the three seminars of the Senior Thesis Project. It is required of all history majors, including Teacher Certification students. The seminar includes three major components: 1) learning historiography and historical method; 2) defining a research topic for the Senior Thesis and writing a prospectus of project; 3) beginning the research. The first objective of the course is to acquaint students with historical method and historiography, including learning about the role of evidence, interpretation and secondary literature in the field of history. The second objective of the course is for students to read the secondary literature pertaining to a topic of interest and explore primary sources, in both archival and digitized collections, from which they will choose their main source material. Students will also be instructed in research and interpretive strategies so that they are well trained as they grapple with primary sources they have identified. The last objective of the course requires students to draft a "lit crit" (critique of the literature) of their secondary sources and begin primary source research, which will culminate in a "prospectus".

## **History Thesis II: Historical Writing (3)**

HS 5391

Second of the three seminars of the Senior Thesis. The course is designed to guide students through the process of finalizing the research and drafting the essay. Professors tutor students through each stage of the process of drafting a research manuscript. Activities include hands on archival research in digital or paper format, travel to research depositories especially in San Antonio and Austin, determining the proper structure and organization of written project, developing narratives and interpretations based on primary and secondary source data, and creating an integrated and readable text. The course assignment is to complete a full draft of the Thesis.

## **History Thesis III: Manuscript Preparation (3)**

HS 5392

Final seminar of the Senior Thesis. It is the culmination of the student's training in historical research and writing. Students polish their manuscripts and produce a final product, including editing text for effective argumentation and interpretation, thoroughness of primary documentation and bibliography, logical structure and organization, clarity of writing, and overall coherence and style. The goal is to create a Thesis that is sufficiently proficient for presentation to faculty, the University research symposium,



# HISTORY

conferences, and for publication in undergraduate journals.

## **History Internship (3)**

HS 5399

Experience-based learning in an applied setting using historical skills, such as archives, History. Not recommended for students in Education. Meets the capstone requirement for majors in History.

# INTERNATIONAL RELATIONS

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

International Relations

## Department Chair

Amber Aubone [aaubone@stmarytx.edu](mailto:aaubone@stmarytx.edu)

## Description of Program/Major

The undergraduate international relations program at St. Mary's University is an interdisciplinary degree that combines economics, international business, political science and history. The degree provides a broad understanding of world affairs and competence for entry-level positions in the field. It also is suitable for entrance into law school and graduate school.

The international relations major prepares students for careers in foreign service as well as international, legal, public service, non-governmental or military careers. Students who want a broad understanding of world affairs would enjoy this major. The program is also a common choice for students seeking military careers or experience in the Foreign Service, or those interested in international business or non-profit developmental work.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3

# INTERNATIONAL RELATIONS

SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# INTERNATIONAL RELATIONS

St. Mary's University

BA in International Relations (IR) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Science <sup>9</sup>	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	SSC Req Speech <sup>1</sup>	3
—	PO 1314 Understanding Global Politics	3	—	EC 2301 Introductory Macroeconomic Theory	3
—	ND 0101 Personal & Academic Development	0			
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 1314 Foundations of Reflection: God	3	—	SMC 2304 Foundation of Practice: Literature	3
—	SSC Req Mathematics <sup>8</sup>	3	—	SSC Req History <sup>3</sup>	3
—	PO 3361 International Relations	3	—	EC 3310 International Economics or	3
—	Elective (or 2311 in Foreign language)	3	—	PO 4368 International Political Economy	3
			—	Elective (or 2312 in Foreign language)	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Third Year Courses					
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SSC Req Literature <sup>5</sup>	3	—	SSC Req Fine Arts <sup>4</sup>	3
—	Upper Level PO, HS, IR, EC, or IB*	3	—	Upper Level PO, HS, IR, EC, or IB*	3
—	Upper Level PO, HS, IR, EC, or IB*	3	—	Upper Level PO, HS, IR, EC, or IB*	3
—	Elective	3	—	Elective	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Fourth Year Courses					
—	SSC Req Theology <sup>7</sup>	3	—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
—	Upper Level PO, HS, IR, EC, or IB*	3	—	Elective	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>This degree requires 2311 and 2312 or sophomore level in a Foreign Language whether or not it was previously studied. In the first year, six hours of Second Year level (2311, 2312) in a language previously studied for a minimum of one year or the first 6 hours of Introductory level (1311, 1312) in a Foreign Language not previously studied. Then, in the second year, counting under electives, the sophomore level in the new language must be acquired. Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

\*Upper level courses – 15 hours from the following with at least 3 hours from each area:

- At least 3 hours from PO 3360, PO 3362, PO 3363, PO 3364, PO 3365, PO 3366, PO 3367
- At least 3 hours from EC 3310, EC 3302, EC 3311, EC 3315, EC 3340, IB 3321, IB 4361, IB 4362, IB 4363, PO 4368
- At least 3 hours from HS 3312, HS 3347, HS 3348, HS 3355, HS 43XX-5XXX)

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing: PO 2310 or 2311.

# INTERNATIONAL RELATIONS

St. Mary's University  
BA in International Relations (IR) Degree Plan - 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

___ SMC 1301 – Foundations of Civilization	3
___ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
___ SMC 1312 – Foundations of Reflection: Nature	3
___ SMC 1313 – Foundations of Reflection: Others	3
___ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
___ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
___ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
___ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
___ SMC 2304 – Foundations of Practice: Literature	3
___ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

___ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
___ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
___ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
___ This degree requires 2311 and 2312 or sophomore level in a Foreign Language whether or not it was previously studied. In the first year, six hours of Second Year level (2311, 2312) in a language previously studied for a minimum of one year; Or, the first 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied. Then, in the second year, counting under electives, the sophomore level in the new language must be acquired; Or, 12 hours of CLEP credit.	6
___ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312	3
___ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
___ Theology – Advanced Theology 33XX, HU 3300	3
___ Fine Arts – AR, DM, MU	3
___ Literature – EN 23XX	3

## **International Relations Major Courses (27 hours)**

___ EC 2301 – Introductory Macroeconomic Theory	3
___ EC 3310 – International Economics or PO 4368 – International Political Economy	3
___ PO 1314 – Understanding Global Politics	3
___ PO 3361 – International Relations	3
___ PO 3360, PO 3362, PO 3363, PO 3364, PO 3365, PO 3366, or PO 3367	3
___ EC 3310, EC 3302, EC 3311, EC 3315, EC 3340, IB 3321, IB 4361, IB 4362, IB 4363, or PO 4368	3
___ HS 3312, HS 3347, HS 3348, HS 3355, or HS 43XX-5XXX	3
___ PO, HS, IR, EC, or IB Electives	6
PO 3360, PO 3362, PO 3363, PO 3364, PO 3365, PO 3366, PO 3367, EC 3310, EC 3302, EC 3311, EC 3315, EC 3340, IB 3321, IB 4361, IB 4362, IB 4363, PO 4368, HS 3312, HS 3347, HS 3348, HS 3355, HS 43XX-5XXX	

## **Electives (33 hours)**

___ Electives - An elective can be any course taken from any discipline.	33
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## **Proficiency in Information Technology and Information Literacy**

\_\_\_ For this major, this requirement will be fulfilled by successfully completing PO 2310 or 2311.

# INTERNATIONAL RELATIONS

## Department Courses and Descriptions

### **Current Problems in Int'l Rela (1)**

IR 3110

A lecture and seminar program analyzing current issues in international affairs, with topics changing every semester.

### **Current Problems in Int'l Rela (2)**

IR 3210

A lecture and seminar program analyzing current issues in international affairs, with topics changing every semester.

### **Ethical Issues in IR (3)**

IR 3310

A lecture and seminar program analyzing current issues in international affairs, with topics changing every semester.

### **World Religions (3)**

IR 3351

A study of the major world religions, their belief systems and their impact on social, economic, political and cultural development. Emphasis will be placed on Christianity (Western and Eastern), Islam, Buddhism, Hinduism and primal religions.

### **Special Topics in Int'l Relati (3)**

IR 4301

Perspectives on cultural aspects of international relations; area studies; or special topics in international relations. May be taken twice with a different topic. The specific topic will be recorded on the transcript.

### **Directed Reading & Research (1)**

IR 5198

Special studies designed for selected undergraduate students with permission of instructor and chairperson. Prerequisite: Senior standing.

### **Directed Reading & Research (2)**

IR 5298

Special studies designed for selected undergraduate students with permission of instructor and chairperson. Prerequisite: Senior standing.

### **Int'l Relations Internship (3)**

IR 5301

Experience-based learning in an applied setting with a government or private agency involved substantially in international affairs.

### **Directed Reading & Research (3)**

IR 5398

Special studies designed for selected undergraduate students with permission of instructor and

# INTERNATIONAL RELATIONS

chairperson. Prerequisite: Senior standing.

## **Senior Colloquium (3)**

IR 5399

A capstone course for IR majors, bringing together theory, research and ethical issues in International Relations. A series of major themes from Economics, History and Political Science will be reviewed, and will constitute a comprehensive examination for the degree.

## **Int'l Relations Internship (6)**

IR 5601

Experience-based learning in an applied setting with a government or private agency involved substantially in international affairs.

# JAPANESE

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Languages

## Department Chair

Eva P. Bueno, Ph.D. [ebueno@stmarytx.edu](mailto:ebueno@stmarytx.edu)

## Department Courses and Descriptions

### Intro to Japanese I (3)

JP 1311

Essentials of Japanese. An introduction to the four phases of language learning: understanding, reading, speaking, and writing Japanese, and an introduction to Japanese culture. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Enrollment restricted to students with no prior experience in Japanese. Students who have been introduced to Japanese at home, or in high school, should take JP 2311 and 2312. JP 1311 is a prerequisite for JP 1312. Permission of the Department Chair is required for entry into the course.

### Intro to Japanese II (3)

JP 1312

Essentials of Japanese. An introduction to the four phases of language learning: understanding, reading, speaking, and writing Japanese, and an introduction to Japanese culture. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Enrollment restricted to students with no prior experience in Japanese. Students who have been introduced to Japanese at home, or in high school, should take JP 2311 and 2312. JP 1311 is a prerequisite for JP 1312. Permission of the Department Chair is required for entry into the course.

### Second Year Japanese I (3)

JP 2311

Japanese language review applied to practice in composition. Course includes practice in comprehension of spoken Japanese and guided speaking, reading, and writing activities leading to self-expression in the Japanese language. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. JP 2311 or equivalent is a



# JAPANESE

prerequisite for JP 2312.

## **Second Year Japanese II (3)**

JP 2312

Japanese language review applied to practice in composition. Course includes practice in comprehension of spoken Japanese and guided speaking, reading, and writing activities leading to self-expression in the Japanese language. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. JP 2311 or equivalent is a prerequisite for JP 2312.

# LANGUAGES

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Languages

## Department Chair

Eva P. Bueno, Ph.D. [ebueno@stmarytx.edu](mailto:ebueno@stmarytx.edu)

## Department Courses and Descriptions

### French in TX & Around the Worl (1)

LN 1101

The course is designed to allow students to explore the different cultures around the world with an emphasis on the historical beginnings of French culture and language in Texas, Africa, and Canada. Representative works from each of the subcultures is used to create an enjoyment on the part of the student and an awareness of the rich heritage of the French Language outside the European arena.

### French Philosophers (1)

LN 1103

This course is designed to explore the writings of French philosophers in their original language. Selected texts from the best known philosophers from Descartes to Sartre and Camus will be read and discussed in class.

### French Romantic Poetry in Song (1)

LN 1104

This course is designed to aid students in learning to translate and interpret French romantic poetry. Emphasis is placed on diction in singing French. Students will explore the works of great French masters such as Berlioz, Fauré, Duparc, Debussy, Ravel, and Poulenc, along with great French poets such as Gautier, Hugo, deMusset, Verlaine, Baudelaire, and Eluard.

### The History of Math in French (1)

LN 1105

The course is designed to explore the history of modern mathematics as traced to its beginnings in the French enlightenment. Representative texts of great French mathematicians and philosophers such as

# LANGUAGES

Descartes, Fermat, Pascal, and Vieté are examined from the standpoint of language and its humanistic development. It is not a technical mathematics course.

## **Directed Readings in French (1)**

LN 1109

Directed Readings in French

## **Directed Readings in German (1)**

LN 1129

Directed Readings in German

## **Actor's Studio in Spanish (1)**

LN 1131

This course provides an opportunity for students to expand their oral skills and vocabulary in Spanish through acting and producing a one-act play written in the language.

## **Engineering Management in Span (1)**

LN 1132

Industrial Engineering management vocabulary and practice are learned through the use of several actual case studies written in Spanish. The common lexicon employed by engineers in both the English and Spanish-speaking world is compared and contrasted.

## **Computer Terminology in Spanis (1)**

LN 1133

The lexicon employed in computer applications in the Spanish-speaking world is systematically employed as an extension of Introduction to Computers.

## **The Post-Modern City (1)**

LN 1134

This is a political course which is intended to introduce upper division students to the use of postmodernism as a methodological and philosophical approach in understanding modern politics. The course will begin with a survey of what constitutes the postmodern condition and then will survey a variety of political problems.

## **The Mexi-Amer/Chic Short Story (1)**

LN 1135

Short stories written in Spanish by Chicano authors such as Rolando Hinojosa and others are read and discussed in class in Spanish. Students will enjoy the rich experience of the Mexican-American/Chicano people through the eyes of writers who, in many cases, are witnesses to the Chicano odyssey in the United States.

## **Classic Lit of the Western Wor (1)**

LN 1136

Designed to familiarize the student with the classic works of the Western World from Cervantes to more recent authors such as Kafka and Borges. Works selected represent the various literary movements of the Western World.

# LANGUAGES

## **Directed Readings in Spanish (1)**

LN 1139

Directed Readings in Spanish

## **Directed Readings in Latin (1)**

LN 1149

Directed Readings in Latin

## **Topics in Langu-Intro to Lan I (3)**

LN 1311

This course is designed to introduce the student to another language not listed in the current University catalog. The course will be offered only if qualified faculty can be found to teach the course on a part-time or individual study basis. The course consists of two semesters. Each semester consists of two hours of lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Enrollment restricted to students with no prior experience in the language. Students who have been introduced to the language at home, or in high school, should take course 2311 and 2312. Course 1311 is a prerequisite for course 1312. Permission of the Department Chair is required for the course.

## **Topics in Lang-Intro to Lan II (3)**

LN 1312

This course is designed to introduce the student to another language not listed in the current University catalog. The course will be offered only if qualified faculty can be found to teach the course on a part-time or individual study basis. The course consists of two semesters. Each semester consists of two hours of lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Enrollment restricted to students with no prior experience in the language. Students who have been introduced to the language at home, or in high school, should take course 2311 and 2312. Course 1311 is a prerequisite for course 1312. Permission of the Department Chair is required for the course.

## **Topics in Lan-Second Y Langu I (3)**

LN 2311

This course is designed to further the study of other languages not listed in the current University catalog and for which the prospective student has some experience in the study or application of the language. The course will be offered only if qualified faculty can be found to teach the course on a part-time or individual study basis. The course consists of two semesters. Each semester consists of two hours of lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Course 2311 is a prerequisite for Course 2312. Permission of the Department Chair is required for entry into the course.

## **Topics in Lang-Intro to Lan II (3)**

LN 2312

This course is designed to further the study of other languages not listed in the current University catalog and for which the prospective student has some experience in the study or application of the language. The course will be offered only if qualified faculty can be found to teach the course on a part-time or individual study basis. The course consists of two semesters. Each semester consists of two hours of lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Course 2311 is a prerequisite for Course 2312. Permission of the Department Chair is required for entry into the course.

# LANGUAGES

## **Topics in Language-Advanced I (3)**

LN 3311

This course is designed to capitalize on previously acquired language skills to conduct advanced study of a language not offered by the University. The course will consist of advanced communications skills, literature, culture, and civilization. The course will be only offered if qualified faculty can be found to teach the course on a part-time or individual study basis.

## **Topics in Language-Advanced II (3)**

LN 3312

This course is designed to capitalize on previously acquired language skills to conduct advanced study of a language not offered by the University. The course will consist of advanced communications skills, literature, culture, and civilization. The course will be only offered if qualified faculty can be found to teach the course on a part-time or individual study basis.

# LATIN AMERICAN AND U.S. LATINO STUDIES (MINOR)

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Latin American and U.S. Latino Studies

## Department Chair

Sonia Garcia, Ph.D. [sgarcia@stmarytx.edu](mailto:sgarcia@stmarytx.edu)

## Description of Program/Major

The Latin American and U.S. Latino Studies (LALS) Minor is an interdisciplinary course of study, offering students the intellectual base for understanding the dynamic historical and contemporary developments of Hispanic peoples and cultures in the Americas. In joining Latin America and Latinos in the U.S. in one course of study, LALS advances the internationalist mission of the University by studying Latino worlds in the larger universe of the Western Hemisphere.

The Minor provides knowledge and analytic skills vital to professions and careers in the 21st century global economies and societies that link North, Central, and South America in ever changing hemispheric and global relations. LALS prepares students to understand the diverse intersecting histories, cultures, and societies of North America, including Mexico, as well Latinos in the United States, Central America, the Caribbean, South America and Brazil. Latino groups in the U.S. include historical populations - Chicanos/Mexican Americans, Mexicans, Puerto Ricans, and Cubans as well as more contemporary, late 20th century populations of Latino decent, including, but not limited to, Brazilians, Dominicans, Guatemalans, Haitians, Hondurans, Nicaraguans, and Salvadorians.

The LALS minor is comprised of 18 semester hours. Beyond the 9 credits required of all LALS minors, students may concentrate 9 credits of course work on Latin America or U.S. Latinos. The U.S. Latino concentration requires an internship (3 of the 18 credit hours). Study abroad in a Spanish or Portuguese speaking country may take the place of the internship.

## Degree Requirements

### Core Curriculum (SMC)

# LATIN AMERICAN AND U.S. LATINO STUDIES (MINOR)

## St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

# MULTINATIONAL ORGANIZATION STUDIES

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Multinational Organization Studies

## Department Chair

Dr. Mark Lokensgard, Coordinator [mlokensgard@stmarytx.edu](mailto:mlokensgard@stmarytx.edu)

## Description of Program/Major

This program is housed in the Department of Languages, and it leads to the Bachelor of Arts degree in Multinational Organization Studies (MOS). The MOS is designed to enable the combination of advanced language skills with careers in the public and private sectors. Of particular interest is the requirement of one summer semester (5 weeks) internship with an American or foreign organization abroad or in the U.S. in which foreign language skills are a part of the day-to-day operation. The program has a strong liberal arts core and a good inter-disciplinary foundation in economics, business and administration, history, and political science. All courses are taught by the corresponding departments/schools within the University. Two seminars and the summer internship are administered by the Department of Languages.

B.A. degree in Multinational Organization Studies with a concentration in Portuguese or Spanish. (Offering in a particular language concentration will depend upon student enrollment.) the program consists of 120 semester hours, divided in the following manner:

- 30 hours of the St. Mary's Core
- 48 hours of the School Specific Core
- 30 hours of the Major (Spanish or Portuguese, mandatory)
- 12 hours of MOS- specific courses

## Degree Requirements

### Core Curriculum (SMC)

**St. Mary's University Core (30 Hours)**



# MULTINATIONAL ORGANIZATION STUDIES

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# MULTINATIONAL ORGANIZATION STUDIES

St. Mary's University

BA in Multinational Organizational Studies (MOS) Portuguese Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

**All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.**

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SSC Req Foreign Language <sup>6</sup> (PR 2312 or 2318)	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Mathematics <sup>8</sup>	3
—	SSC Req Foreign Language <sup>6</sup> (PR 2311 or 2317)	3	—	MOS Specific Social Science	3
—	SSC Req Speech <sup>1</sup>	3	—	MOS Specific Business	3
—	ND 0101 Personal & Academic Development	0			
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 1314 Foundations of Reflection: God	3	—	SMC 2304 Foundation of Practice: Literature	3
—	PR 3311 Brazilian Culture and Civilization	3	—	SSC Req Science <sup>9</sup>	3
—	MOS Specific Social Science	3	—	PR 3341 Survey of Luso Brazilian Literature	3
—	Elective	3	—	MOS Specific Business	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Third Year Courses					
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SSC Req Fine Arts <sup>4</sup>	3	—	SSC Req Theology <sup>7</sup>	3
—	SSC Req History <sup>3</sup>	3	—	MO 5341 Seminar: Preparation for Internship	3
—	PR 3361 Advanced Comm Skills Portuguese	3	—	PR 3381 Portuguese Language for Professions	3
—	MOS Specific Social Science	3	—	MOS Specific Business	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Third or Fourth Year Summer Courses					
—	MO 5361 MOS Internship	3	—	MO 5362 MOS Internship	3
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	MO 5342 Career Seminar MOS	3
—	SSC Req Literature <sup>5</sup>	3	—	PR 3382 Topics in Portuguese	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
	<b>Total</b>	<b>12</b>		<b>Total</b>	<b>12</b>

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition **with a "C" or better**: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours of Second Year level: PR 2311 and PR 2312 or PR 2317 and PR 2318.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

MOS Specific Social Science – EC 2303, EC 2301, and PO 1311 or PO 1314

MOS Specific Business – BA 1310, EC 3310, IB 3310, IB 3321

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# MULTINATIONAL ORGANIZATION STUDIES

St. Mary's University  
BA in Multinational Organizational Studies (MOS) Portuguese Degree Plan - 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

<input type="checkbox"/> SMC 1301 – Foundations of Civilization 3	
<input type="checkbox"/> SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
<input type="checkbox"/> SMC 1312 – Foundations of Reflection: Nature	3
<input type="checkbox"/> SMC 1313 – Foundations of Reflection: Others	3
<input type="checkbox"/> SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
<input type="checkbox"/> SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
<input type="checkbox"/> SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
<input type="checkbox"/> SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
<input type="checkbox"/> SMC 2304 – Foundations of Practice: Literature	3
<input type="checkbox"/> SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

<input type="checkbox"/> Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
<input type="checkbox"/> Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
<input type="checkbox"/> Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
<input type="checkbox"/> Foreign Languages – PR 2311 and PR 2312 or PR 2317 and PR 2318	6
<input type="checkbox"/> History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
<input type="checkbox"/> Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
<input type="checkbox"/> Theology – Advanced Theology 33XX, HU 3300	3
<input type="checkbox"/> Fine Arts – AR, DM, MU	3
<input type="checkbox"/> Literature – EN 23XX	3

## **Multinational Organizational Studies Portuguese Major Courses (45 hours)**

<input type="checkbox"/> MO 5341 – Seminar: Preparation for Internship	3
<input type="checkbox"/> MO 5342 – Career Seminar MOS	3
<input type="checkbox"/> MO 5361 –Internship	3
<input type="checkbox"/> MO 5362 –Internship	3
<input type="checkbox"/> PR 3311 – Brazilian Culture and Civilization	3
<input type="checkbox"/> PR 3341 – Survey of Luso Brazilian Literature	3
<input type="checkbox"/> PR 3361 – Advanced Communication Skills Portuguese	3
<input type="checkbox"/> PR 3381 – Portuguese Language for Professions	3
<input type="checkbox"/> PR 3382 – Topics in Portuguese	3
<input type="checkbox"/> MOS Specific Social Science – EC 2303, EC 2301, and PO 1311 or PO 1314	9
<input type="checkbox"/> MOS Specific Business – BA 1310, EC 3310, IB 3310, IB 3321	9

## **Electives (15 hours)**

<input type="checkbox"/> Electives - An elective can be any course taken from any discipline.	15
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## **Proficiency in Information Technology and Information Literacy**

For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# MULTINATIONAL ORGANIZATION STUDIES

St. Mary's University

BA in Multinational Organizational Studies (MOS) Spanish Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

**All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.**

First Year Courses					
	Fall	Hr		Spring	Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	SMC 1311 Foundations of Reflection: Self	3	___	SSC Req Foreign Language <sup>6</sup> (SP 2312)	3
___	SSC Req Composition & Rhetoric <sup>2</sup>	3	___	SSC Req Mathematics <sup>8</sup>	3
___	SSC Req Foreign Language <sup>6</sup> (SP 2311)	3	___	MOS Specific Social Science	3
___	SSC Req Speech <sup>1</sup>	3	___	MOS Specific Business	3
___	ND 0101 Personal & Academic Development	0			
	Total	15		Total	15
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	SMC 1314 Foundations of Reflection: God	3	___	SMC 2304 Foundation of Practice: Literature	3
___	MOS Specific Social Science	3	___	SSC Req Science <sup>9</sup>	3
___	SP 3311/SP 3312/SP 3325	3	___	MOS Specific Business	3
___	SP 3331/SP 3332/SP 3382	3	___	SP 3341/SP 3342	3
	Total	15		Total	15
Third Year Courses					
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
___	SSC Req Fine Arts <sup>4</sup>	3	___	MO 5341 Seminar: Preparation for Internship	3
___	SSC Req History <sup>3</sup>	3	___	SP 3322/SP 3343/SP 4341	3
___	SP 3353/SP 3381/SP 3361	3	___	MOS Specific Business	3
___	MOS Specific Social Science	3	___	Elective	3
	Total	15		Total	15
Third or Fourth Year Summer Courses					
___	MO 5361 MOS Internship	3	___	MO 5362 MOS Internship	3
Fourth Year Courses					
___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	___	MO 5342 Career Seminar MOS	3
___	SSC Req Literature <sup>5</sup>	3	___	SP 4361/SP 5321	3
___	SSC Req Theology <sup>7</sup>	3	___	SP 3371 Spanish Phonetics & Oral Discourse	3
___	SP 4331/SP 4351	3	___	Elective	3
	Total	12		Total	12

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition **with a "C" or better**: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours of Second Year level: SP 2311 and SP 2312.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

MOS Specific Social Science – EC 2303, EC 2301, and PO 1311 or PO 1314

MOS Specific Business – BA 1310, EC 3310, IB 3310, IB 3321

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# MULTINATIONAL ORGANIZATION STUDIES

St. Mary's University  
BA in Multinational Organizational Studies (MOS) Spanish Degree Plan - 2010  
120 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## **St. Mary's University Core (30 Hours)**

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages – SP 2311 and SP 2312	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Multinational Organizational Studies Spanish Major Courses (54 hours)**

__ MO 5341 – Seminar: Preparation for Internship	3
__ MO 5342 – Career Seminar MOS	3
__ MO 5361 –Internship	3
__ MO 5362 –Internship	3
__ SP 3311 – Culture & Civilization of Spain; or SP 3312 – Culture & Civilization of Latin America; or SP 3325 – Mexican-American/Chicano Culture	3
__ SP 3331 – Survey of Spanish Literature I; or SP 3332 – Survey of Spanish Literature II; or SP 3382 – Topics in Spanish	3
__ SP 3341 – Survey of Spanish-American Literature I; or SP 3342 – Survey of Spanish-American Literature II	3
__ SP 3353 – Spanish for Business; or SP 3381 – Spanish Language for the Professions; or SP 3361 – Advanced Communication Skills in Spanish	3
__ SP 3322 – Culture and Civilization of Mexico; or SP 3343 – Mexican-American/Chicano Literature; or SP 3341 – Survey of Spanish-American Literature I	3
__ SP 4331 – Spanish Short Story; or SP 4351 – Spanish-American Prose Fiction	3
__ SP 4361 – Golden Age Drama; or SP 5321 – Golden Age Prose Fiction	3
__ SP 3371 – Spanish Phonetics and Oral Discourse	3
MOS Specific Social Science – EC 2303, EC 2301, and PO 1311 or PO 1314	9
MOS Specific Business – BA 1310, EC 3310, IB 3310, IB 3321	9

## **Electives (6 hours)**

__ Electives - An elective can be any course taken from any discipline.	6
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# MULTINATIONAL ORGANIZATION STUDIES

# MUSIC

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Music

## Department Chair

Michael Sullivan, S.M. [msullivan@stmarytx.edu](mailto:msullivan@stmarytx.edu)

## Description of Program/Major

St. Mary's University music majors learn to become trained musicians, teachers, and performers so they can excel in their careers or in graduate studies. The music program provides a solid foundation in music theory, music history, composition, conducting, and performance ensembles. All music majors take private lessons in voice or in their chosen instrument.

Music students possess both analytical skills and creativity and are highly motivated and self-disciplined. All music majors take four semesters of piano, and aspiring educators learn to teach young people how to play instruments through a series of methods courses. Music students have the opportunity to perform extensively, both in solo and ensemble situations. They also gain practical skills that help them excel both on stage and in the classroom.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3

# MUSIC

SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan



**BACHELOR OF ARTS DEGREE - MAJOR MUSIC (INSTRUMENTAL) - WITH TEACHER CERTIFICATION**

**I. CORE REQUIREMENTS (66 hours)**

English 1311, 3300 + 6 hours Sophomore Literature	12
Fine Arts 1101, 1102, 1103	3
Foreign Language*	6
Speech	3
Science (Biological/Physical- Student take 6 hours in one area & 3 in the other)	9
Math 1303 College Algebra	3
Theology 2301 + 3 adv hrs from: TH 3301, 3302, 3330, 3332, 3334, 3350, 3352, 3356, 3380, 3382	6
Philosophy 1310, 2332 + 3 advanced hours	9
History 1301 and 1302 - U S History	6
Political Science 1311 and 1312	6
Social Science	3
Basic Proficiency Requirement in Information Technology	0

(Students must achieve a passing score of 170 or higher on the iSkills test)

**II. MAJOR: MUSIC (Total Music Hours - 56)**

MU 1121, 1122 - Aural Skills	MU 3332 - Beethoven to 21 <sup>st</sup> Century
MU 1321, 1322 - Basic Musicianship	MU 3333 - World Music
MU 2230 - The Living Symphony	MU 3445 - All Level Music Methods
MU 2331 - Music History: Medieval - Classical	MU 4341 - Instrumental Conducting
MU 3323, 3324 - Harmony	MU 4125 - Improvisation
MU 3224 - Form and Analysis	MU 4110 - Applied Techniques I - 5 hours
MU 3125 - Arranging and Orchestration	MU 4111 - Applied Techniques II - 3 hours
MU 3245 - Accompanying	

**Ensembles**  
**Major Instrument** - 3 must be advanced - MU 1111, 1112, 2113, 2114, 3115, 3116, 4117 (7 hours)

**Piano** - MU 1111, 1112, 2113, 2114 (4 hours)

**Concert Music** 1001, 1002, 2001, 2001, 3001, 3002, 4001, 4002

**III. PROFESSIONAL DEVELOPMENT: EDUCATION COURSES – 21 hrs**

ED 3301 The American School	3
ED 3361 Adolescent Development & Learning in School Setting	3
ED 3362 Secondary Teaching Methods	3
ED 3350 Teaching Reading in the Content Areas	3
<i>Note: ED 3362 and 3350 constitute the secondary 'block' and are taken concurrently</i>	
<i>Tuesday and Thursday – 8:00 am to 12:00 noon</i>	
ED 4388 Professional Development Seminar - Secondary	3
ED 4689 Student Teaching in Secondary School	6

**Total** **143**

**BACHELOR OF ARTS DEGREE - MAJOR MUSIC ( INSTRUMENTAL)**

**CORE REQUIREMENTS (68 HOURS)**

English 1311, 3300 + 6 hours Sophomore Literature	12
Fine Arts 1101, 1102, 1103	3
Foreign Language*	6
Speech	3
Science (Biological/Physical - Students take 6 hours in one area & 3 in the other)	9
Math (3 hours from MT 1301, 1302, 1303, 1305, 1306, 1411, 2412)	3
Theology 2301 + 3 adv hrs from: TH 3301, 3302, 3330, 3332, 3334, 3350, 3352, 3356, 3380, 3382	6
Philosophy 1310, 2332 + 3 advanced hours	9
Social Sciences	15
Basic Proficiency Requirement in Information Technology	0

(Students must achieve a passing score of 170 or higher on the iSkills test)

Electives

2

**MAJOR: MUSIC (Total Music Hours – 59)**

MU 1121, 1122 - Aural Skills	MU 3332 - Beethoven to 21 <sup>st</sup> Century
MU 1321, 1322 - Basic Musicianship	MU 3333 - World Music
MU 2230 - The Living Symphony	MU 4125 - Improvisation
MU 2331 - Music History: Medieval - Classical	MU 4341 - Instrumental Conducting
MU 3323, 3324 - Harmony	MU 4110 - Applied Techniques I - 5 hours
MU 3224 - Form and Analysis	MU 4111 - Applied Techniques ii - 3 hours
MU 3125 - Arranging and Orchestration	

**Ensembles**  
**Major Instrument** - MU 1211, 1212, 2213, 2214, 3215, 3216, 4217, 4218 (16 hours)

**Piano** - MU 1111, 1112, 2113, 2114 (4 hours)

**Concert Music** 1001, 1002, 2001, 2002, 3001, 3002, 4001, 4002

**Total** **127**

\*6 hours of Second Year level (2311, 2312) in a foreign language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school. Or, 6 hours of Introductory level (1311, 1312) language in which he/she has no prior training or knowledge. Or, 12 hours of CLEP credit.

# MUSIC

ST. MARY'S UNIVERSITY      SAN ANTONIO, TEXAS 78228-8576      AUGUST 2009

**BACHELOR OF ARTS DEGREE - MAJOR MUSIC (VOCAL or PIANO) -WITH TEACHER CERTIFICATION**

**I. CORE REQUIREMENTS (66 hours)**

English 1311, 3300 + 6 hours Sophomore Literature	12
Fine Arts 1101, 1102, 1103	3
Foreign Language*	6
Speech	3
Science (Biological/Physical- Student take 6 hours in one area & 3 in the other) One must have a lab.)	9
Math 1303 College Algebra (or MT 1411)	3
Theology 2301 + 3 adv hrs from: TH 3301, 3302, 3330, 3332, 3334, 3350, 3351, 3356, 3380, 3382	6
Philosophy 1310, 2332 + 3 advanced hours	9
History 1301 and 1302 - U S History	6
Political Science 1311 and 1312	6
Social Science	3
Basic Proficiency Requirement in Information Technology (Students must achieve a passing score of 170 or higher on the iSkills test)	

**II. MAJOR: MUSIC (Total Music Hours – 57)**

MU 1121, 1122 - Aural Skills	
MU 1321, 1322 - Basic Musicianship	MU 3332 - Beethoven to 21 <sup>st</sup> Century
MU 2230 - The Living Symphony	MU 3333 - World Music
MU 2331 - Music History: Medieval - Classical	MU 3445 – All Level Music Methods
MU 3245 - Accompanying	MU 4110 - Applied Techniques of Teaching (Strings)
MU 3323, 3324 - Harmony	MU 4125 - Improvisation
MU 3224 - Form and Analysis	MU 4249 - Diction, Engl, German, Italian, Fr
MU 3125 - Arranging and Orchestration	MU 4340 - Choral Conducting
Ensembles	MU 4342 - Vocal Pedagogy
<b>Major Instrument</b> - 3 must be advanced - MU 1111, 1112, 2113, 2114, 3115, 3116, 4117 (7 hours)	
<b>Piano</b> - MU 1111, 1112, 2113, 2114 (4 hours)	
<b>Concert Music</b> 1001, 1002, 2001, 2002, 3001, 3002, 4001, 4002	-

**III. PROFESSIONAL DEVELOPMENT: EDUCATION COURSES – 21 hrs**

ED 3301 The American School	3
ED 3361 Adolescent Development & Learning in School Setting	3
ED 3362 Secondary Teaching Methods	3
ED 3350 Teaching Reading in the Content Areas	3
<i>Note: ED 3362 and 3350 constitute the secondary 'block' and are taken concurrently Tuesday and Thursday – 8:00 am to 12:00 noon</i>	
ED 4388 Classroom Management in the Secondary School	3
ED 4689 Student Teaching in Secondary School	6

**Total** **144**

**BACHELOR OF ARTS DEGREE - MAJOR MUSIC (VOCAL OR PIANO)**

**CORE REQUIREMENTS (68 HOURS)**

English 1311, 3300 + 6 hours Sophomore Literature	12
Fine Arts 1101, 1102, 1103	3
Foreign Language*	6
Speech	3
Science (Biological/Physical - Students take 6 hours in one area & 3 in the other)	9
Math (3 hours from MT 1301, 1302, 1303, 1305, 1306, 1411, 2412)	3
Theology 2301 + 3 adv hrs from: TH 3301, 3302, 3303, 3330, 3332, 3334, 3350, 3356, 3380, 3382	6
Philosophy 1310, 2332 + 3 advanced hours	9
Social Sciences	15
Basic Proficiency Requirement in Information Technology (Students must achieve a passing score of 170 or higher on the iSkills test)	
Electives	2

**MAJOR: MUSIC (Total Music Hours – 62)**

MU 1121, 1122 - Aural Skills	MU 3332 - Beethoven to 21 <sup>st</sup> Century
MU 1321, 1322 - Basic Musicianship	MU 3333 - World Music
MU 2230 - The Living Symphony	MU 4110 Applied Techniques of Teaching Strings
MU 2331 - Music History: Medieval - Classical	MU 4125 - Improvisation
MU 3245 - Accompanying	MU 4249 - Diction, Engl, German, Italian, Fr
MU 3323, 3324 - Harmony	MU 4340 - Choral Conducting
MU 3224 - Form and Analysis	MU 4342 - Vocal Pedagogy
MU 3125 - Arranging and Orchestration	
Ensembles	
<b>Major Instrument</b> - MU 1211, 1212, 2213, 2214, 3215, 3216, 4217, 4218 (16 hours)	
<b>Piano</b> - MU 1111, 1112, 2113, 2114 (4 hours)	
<b>Concert Music</b> 1001, 1002, 2001, 2002, 3001, 3002, 4001, 4002	-

**Total** **130**

**\*6 hours of Second Year level (2311, 2312) in a foreign language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school. Or, 6 hours of Introductory level (1311, 1312) language in which he/she has no prior training or knowledge. Or, 12 hours of CLEP credit.**

# MUSIC

## Department Courses and Descriptions

### **Concert Music (0)**

MU 1001

The study and practice of performance through required concert attendance, performance opportunities, forums, and discussions. This noncredit course is required of all music majors every semester.

### **Concert Music (0)**

MU 1002

The study and practice of performance through required concert attendance, performance opportunities, forums, and discussions. This noncredit course is required of all music majors every semester.

### **Applied Music (1)**

MU 1111

Applied Aural Skills

### **Applied Music: Piano Proficien (1)**

MU 1112

Applied Aural Skills

### **Aural Skills (1)**

MU 1121

Basic music theory lab to include ear-training, solfeggio, rhythm drill, keyboard harmony, transposition, and improvising accompaniments. This course is taken with Basic Musicianship (MU 1321, 1322).

### **Aural Skills (1)**

MU 1122

Basic music theory lab to include ear-training, solfeggio, rhythm drill, keyboard harmony, transposition, and improvising accompaniments. This course is taken with Basic Musicianship (MU 1321, 1322).

### **Concert Choir (1)**

MU 1151

Rehearses and performs sacred and secular choral literature from various periods and styles. Concerts and special Masses on and off campus. Open to all St. Mary's students with permission of director. Required each semester for voice majors. May be taken by Free Audit.

### **Concert Choir (1)**

MU 1152

Rehearses and performs sacred and secular choral literature from various periods and styles. Concerts and special Masses on and off campus. Open to all St. Mary's students with permission of director. Required each semester for voice majors. May be taken by Free Audit.

### **Concert Band (1)**

MU 1153

Band literature in music education. Rehearsal and performance of band music. Anyone may join, with permission of director. Required each semester for band instrument majors. May be taken by Free Audit.

# MUSIC

## **Concert Band (1)**

MU 1154

Band literature in music education. Rehearsal and performance of band music. Anyone may join, with permission of director. Required each semester for band instrument majors. May be taken by Free Audit.

## **Jazz Laboratory (1)**

MU 1155

Membership by audition. Jazz ensembles, big band, combos, improvisation. Rehearsal and performance of jazz music. May be taken by Free Audit.

## **Jazz Laboratory (1)**

MU 1156

Membership by audition. Jazz ensembles, big band, combos, improvisation. Rehearsal and performance of jazz music. May be taken by Free Audit.

## **Brass Ensembles (1)**

MU 1157

Brass Ensembles (Quintets, etc.)

## **Brass Ensemble (1)**

MU 1158

Brass Ensembles (Quintets, etc.)

## **Woodwind Ensembles (1)**

MU 1159

Woodwind Ensembles (Quintets, etc.)

## **Woodwind Ensemble (1)**

MU 1160

Woodwind Ensembles (Quintets, etc.)

## **Percussion Ensembles (1)**

MU 1161

Percussion Ensembles (Quintets, etc.)

## **Percussion Ensembles (1)**

MU 1162

Percussion Ensembles (Quintets, etc.)

## **Chamber Choir/Vocal Ensembles (1)**

MU 1163

Chamber Choir/Vocal Ensembles

## **Chamber Choir/Vocal Ensembles (1)**

MU 1164

# MUSIC

Chamber Choir/Vocal Ensembles

**Rattler Band(Pep Band) (1)**

MU 1165

Rattler Band (Pep Band)

**Guitar Ensembles (1)**

MU 1167

Guitar Ensembles

**Guitar Ensembles (1)**

MU 1168

Guitar Ensembles

**Jazz Combo (1)**

MU 1171

Jazz Combo

**Private Lessons(Applied Music) (2)**

MU 1211

Private Lessons (Applied Music)

**Private Lessons(Applied Music) (2)**

MU 1212

Private Lessons (Applied Music)

**Applied Classes (3)**

MU 1301

Class Piano

**Private Lessons(Applied Music) (3)**

MU 1311

Private Lessons (Applied Music)

**Private Lessons(Applied Music) (3)**

MU 1312

Applied Musicianship

**Basic Musicianship (3)**

MU 1321

Basic music theory. Clefs. Key signatures. Scales. Elementary forms. Basic music vocabulary. Melody-writing. Multi-voice writing (Common Practice Period). Analysis. Lab will include ear-training, solfeggio, rhythm drill, keyboard harmony, transposition, and improvising accompaniments. For music majors and minors only.

**Basic Musicianship (3)**

# MUSIC

MU 1322

Basic music theory. Clefs. Key signatures. Scales. Elementary forms. Basic music vocabulary. Melody-writing. Multi-voice writing (Common Practice Period). Analysis. Lab will include ear-training, solfeggio, rhythm drill, keyboard harmony, transposition, and improvising accompaniments. For music majors and minors only.

## **Concert Music (0)**

MU 2001

The study and practice of performance through required concert attendance, performance opportunities, forums, and discussions. This noncredit course is required of all music majors every semester.

## **Concert Music (0)**

MU 2002

The study and practice of performance through required concert attendance, performance opportunities, forums, and discussions. This noncredit course is required of all music majors every semester.

## **Applied Music (1)**

MU 2113

Preparatory and advanced work in technique and literature of piano, voice, guitar, strings, and band instruments. Individual and/or group instruction on major or secondary instrument 1/2 hour a week (practice 6 hours). Additional work for credit at any level may be requested by the Music faculty. Applied work may also be taken in conducting, composition, computer/synthesizer music, and other skill areas, with consent of the Music faculty. Unless student is a music major or music minor, applied music courses may be taken only on a P/NP basis. All piano and guitar majors must have lab experience in accompanying.

## **Private Lessons (1)**

MU 2114

Preparatory and advanced work in technique and literature of piano, voice, guitar, strings, and band instruments. Individual and/or group instruction on major or secondary instrument 1/2 hour a week (practice 6 hours). Additional work for credit at any level may be requested by the Music faculty. Applied work may also be taken in conducting, composition, computer/synthesizer music, and other skill areas, with consent of the Music faculty. Unless student is a music major or music minor, applied music courses may be taken only on a P/NP basis. All piano and guitar majors must have lab experience in accompanying.

## **LS Applied Living Symphony (2)**

MU 2210

Applied Arranging & Orchestration

## **Private Lessons (Applied Music) (2)**

MU 2213

Private Lessons (Applied Music)

## **Private Lessons (Applied Music) (2)**

MU 2214

# MUSIC

Private Lessons (Applied Music)

## **The Living Symphony (2)**

MU 2230

Students will study and explore a number of great musical works and encounter them as living art forms through concerts. Required attendance at five San Antonio Symphony performances.

## **Applied Music History (3)**

MU 2311

Applied Music History

## **Private Lessons(Applied Music) (3)**

MU 2313

Private Lessons (Applied Music)

## **Private Lessons(Applied Music) (3)**

MU 2314

Private Lessons (Applied Music)

## **Music History: Medieval through Classical (3)**

MU 2331

The study of music history and literature of the Medieval through the Classical periods. Includes listening and score study, with emphasis on the development of form. Examination of social setting and function, historical importance, aesthetics, and composers' biographies.

## **Concert Music (0)**

MU 3001

The study and practice of performance through required concert attendance, performance opportunities, forums, and discussions. This noncredit course is required of all music majors every semester.

## **Concert Music (0)**

MU 3002

The study and practice of performance through required concert attendance, performance opportunities, forums, and discussions. This noncredit course is required of all music majors every semester.

## **Applied Music Arranging&Orches (1)**

MU 3115

Applied Arranging & Orchestration

## **Private Lessons (1)**

MU 3116

Preparatory and advanced work in technique and literature of piano, voice, guitar, strings, and band instruments. Individual and/or group instruction on major or secondary instrument 1/2 hour a week (practice 6 hours). Additional work for credit at any level may be requested by the Music faculty. Applied work may also be taken in conducting, composition, computer/synthesizer music, and other skill areas, with consent of the Music faculty. Unless student is a music major or music minor, applied music courses

# MUSIC

may be taken only on a P/NP basis. All piano and guitar majors must have lab experience in accompanying.

## **Arranging & Orchestration (1)**

MU 3125

## **Music: Essential Elements (1)**

MU 3142

Examination of the position and value of music in society. Emphasis on understanding the basic elements of music; appropriate skills for singing, playing, moving to, and listening to music; understanding and appreciation of music, of both Western and of non-Western cultures.

## **FA Applied Form and Analysis (2)**

MU 3214

Applied Form and Analysis

## **Applied Music (2)**

MU 3215

Applied Accompanying

## **Private Lessons(Applied Music) (2)**

MU 3216

Private Lessons (Applied Music)

## **Form and Analysis (2)**

MU 3224

Melody writing. Motif and development. Song forms. Classical forms.

## **Counterpoint (2)**

MU 3227

Eighteenth century practice. Single melodic line. Two voice counterpoint. Motifdevelopment. Two-part invention.

## **History of Music Applied (2)**

MU 3242

Examination of the history, position, and value of music in society. Emphasis will be on the historical evolution of music; basic elements of music; appropriate skills for singing, playing, moving to, and listening to music; and an understanding and appreciation of music of both Western and of non-Western cultures.

## **Accompanying (2)**

MU 3245

Sight reading, transposition, reducing operatic and orchestral scores, improvising simple choral accompaniments, solo vocal and choral warmups, accompanying UIL vocal solo and choral literature. Prerequisite: four semesters of applied piano, passing the piano proficiency examination.



# MUSIC

## **Applied Music History (3)**

MU 3312

Applied Music History

## **Applied World Music (3)**

MU 3313

Applied World Music

## **Applied Music (3)**

MU 3315

Applied Harmony

## **Private Lessons(Applied Music) (3)**

MU 3316

Private Lessons (Applied Music)

## **Harmony (3)**

MU 3323

Traditional harmony and ear training. Analysis of harmonic idioms as used into the 20th century. Continuation of melody writing. Elementary counterpoint. Prerequisite: MU 1321, 1322 or equivalent and piano proficiency. For music majors and minors only.

## **Harmony (3)**

MU 3324

Traditional harmony and ear training. Analysis of harmonic idioms as used into the 20th century. Continuation of melody writing. Elementary counterpoint. Prerequisite: MU 1321, 1322 or equivalent and piano proficiency. For music majors and minors only.

## **Beethoven to the 21st Century (3)**

MU 3332

Traditional harmony and ear training. Analysis of harmonic idioms as used into the 20th century. Continuation of melody writing. Elementary counterpoint. Pre- requisite: MU 1321, 1322 or equivalent and piano proficiency. For music majors and minors only.

## **World Music (3)**

MU 3333

Survey of music of cultures across the world, with emphasis on Africa, Asia, the Americas, and Eastern Europe. Emphasis on the listening experience. Reading materials focus on the cultural significance of music.

## **App. all Levels Music Methods (4)**

MU 3415

## **All Level Music Methods (4)**

# MUSIC

MU 3445

Examination of the position and value of music in the EC-12 school curriculum. Emphasis on ability to organize; relations with administration; and effective methods of presenting material. Development of the ability to express a philosophy of music education, and knowledge of current methods and materials in all fields and levels of music education.

## **Concert Music (0)**

MU 4001

The study and practice of performance through required concert attendance, performance opportunities, forums, and discussions. This noncredit course is required of all music majors every semester.

## **Concert Music (0)**

MU 4002

The study and practice of performance through required concert attendance, performance opportunities, forums, and discussions. This noncredit course is required of all music majors every semester.

## **Applied Techniques of Teach I (1)**

MU 4110

MU 4110 will be taken in 5 different areas, earning 1 semester hour of credit in each: Percussion; Brass; Woodwinds; Strings; and Voice. In these 1-hour teaching technique courses, the lessons deal with meeting common problems found in music classrooms/ensembles. For the instruments: methods of teaching all instruments in each family, based on the similarities of the instruments in each. The student is expected to reach the intermediate level of playing ability on one instrument in each family. For voice: the fundamentals of vocal technique are covered: posture, breathing, phonation, resonance, articulation, diction, common vocal problems, pedagogy, physiology of the vocal mechanism, and vocal literature.

## **Applied Techniques of Teach II (1)**

MU 4111

This course is a continuation of MU 4110, to be taken in three areas, earning 1 semester hour of credit in each: Percussion, Woodwinds, and Brass.

## **Applied Music (1)**

MU 4115

Applied Improvisation

## **Applied Music (1)**

MU 4117

Applied Tech. Teach Voice

## **Applied Music (1)**

MU 4118

Applied Senior Recital

## **Applied Music (1)**

MU 4119

# MUSIC

## **Improvisation (1)**

MU 4125

Fundamental improvisation skills, style interpretation, theory, and common performance practices in the evolution of improvisation.

## **Advanced Conducting (1)**

MU 4130

Advanced Conducting

## **Special Topics (1)**

MU 4181

In-depth study of special topics in music history, music literature, music theory, composition, performance, etc. May be taken for a total of six hours as long as the topics are different.

## **SX Applied Tech-Teaching Saxop (2)**

MU 4210

Applied Techniques of Teaching Saxophone

## **PL Piano Literature (2)**

MU 4211

Piano Literature

## **AA Applied Advanc Accompanying (2)**

MU 4215

Applied Advanced Accompanying

## **Applied Music (2)**

MU 4217

Woodwinds

## **Applied Music (2)**

MU 4218

Private Lessons (Applied Music)

## **Applied Music (2)**

MU 4219

Applied Diction

## **Jazz Literature (2)**

MU 4225

Survey of jazz music from ragtime to modern jazz. Open to majors and non-majors.

## **Marching Band Techniques (2)**

MU 4245

# MUSIC

The study of basic marching routines. The parade band. The football band. The contest marching band.  
Materials

## **Concert Band Literature (2)**

MU 4246

Standard and contest literature. Programming. Rehearsal techniques. Instrumentation. Use of available instrumentation. The contest. Materials.

## **Choral Literature (2)**

MU 4248

Standard and contest literature. Programming. Rehearsal techniques. The balanced ensemble. Score study. Style analysis. Resource materials.

## **Diction: English, German, Italian, French (2)**

MU 4249

Diction and pronunciation for singers. A study of the International Phonetic Alphabet and its practical application through actual preparation and performance of music literature in the language being studied.

## **Special Topics (2)**

MU 4281

In-depth study of special topics in music history, music literature, music theory, composition, performance, etc. May be taken for a total of six hours as long as the topics are different.

## **Applied music (3)**

MU 4315

## **Applied Music (3)**

MU 4317

Applied Conducting

## **Applied Music (3)**

MU 4318

Applied Vocal Pedagogy

## **Applied Music (3)**

MU 4319

Applied Trumpet 9th semester

## **Choral Conducting (3)**

MU 4340

Basics of conducting technique, score reading, and interpretation. Rehearsal techniques, organization, and the study of appropriate literature. Problems and methods of conducting choral ensembles.

## **Instrumental Conducting (3)**

MU 4341

# MUSIC

Basics of conducting technique, score reading, and interpretation. Rehearsal techniques, organization, and the study of appropriate literature. Problems and methods of conducting instrumental ensembles.

## **Vocal Pedagogy (3)**

MU 4342

Fundamentals of vocal technique: posture, breathing, phonation, resonance, articulation, common vocal problems, pedagogy, physiology of the vocal mechanism, and vocal literature.

## **Special Topics (3)**

MU 4381

In-depth study of special topics in music history, music literature, music theory, composition, performance, etc. May be taken for a total of six hours as long as the topics are different.

# PHILOSOPHY

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Philosophy

## Department Chair

Megan Mustain, Ph.D. [mmustain@stmarytx.edu](mailto:mmustain@stmarytx.edu)

## Description of Program/Major

### MISSION STATEMENT

The St. Mary's University Department of Philosophy teaches and guides students in philosophical inquiry, helping them to integrate the study of philosophy as an academic discipline with the practice of philosophy as a way of life. To acquaint students with philosophy as an academic discipline, we begin their education in the twenty-five-century-long philosophical conversation about ultimate ideas and values; help them develop facility with philosophic methods of inquiry; and ready them for possible graduate studies in philosophy, law, and a wide range of academic and professional programs for which philosophy provides an excellent preparation. To introduce students to philosophy as a way of life, we help them engage in critical self-understanding and self-appropriation, while encouraging responsible participation in the various communities that form their social environment: the university, society, the world, and the community of faith. As integral to our mission, we as faculty attempt to embody the meaning of philosophy through our pursuit of critical inquiry in the classroom, and in our professional and social lives. Through teaching courses in the Core Curriculum, we also bring philosophical inquiry as a way of life to all students at St. Mary's University. Philosophy, so conceived, taught, practiced, and lived, belongs alongside theology at the authentic core of a Marianist education.

### THE PROGRAMS

The philosophy department invites students who are majoring in any other area to consider a second major in philosophy. A major in philosophy can deepen a student's appreciation of any subject and will prepare the student for graduate work in either field. Furthermore, while many students who major only in philosophy will go on to graduate school in philosophy, the department nevertheless encourages its majors to pursue a second major or a minor in a different field. Even those students who plan to apply to

# PHILOSOPHY

philosophy graduate school would benefit from exposure to other disciplines which could provide grist for reflection, analysis, and an exploration of conceptual foundations. It is not uncommon for students to pursue graduate studies in philosophy "of something," such as philosophy of science, philosophy of art, philosophy of mathematics, political philosophy, and so forth.

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## Degree Plans

For sample degree plans, see this URL: [http://www.stmarytx.edu/registrar/?go=deg\\_plans](http://www.stmarytx.edu/registrar/?go=deg_plans)

**MAJOR PROGRAM (30 hours):** (1) Seven required courses: PL 2310, PL 3360, PL 3361, PL 3362, PL 3363, PL 3364, and 4395; (2) Three upper-division (33XX or 43XX) PL electives.

**MINOR PROGRAM (18 hours):** (1) One required course: PL 2310; (2) Three historical courses from among the following: PL 3360, PL 3361, PL 3362, PL 3363, PL 3364; (3) Two upper-division (33XX or 43XX) PL electives, which may be either historical or topical.

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## St. Mary's Core

### SMC 1311 Foundations of Reflection: Self

This course explores foundational questions about human existence and a human being's relationship to reality. It starts with a focus on a person's natural inclination to wonder, and on how inquiry moves persons to find intelligible meaning in experiences. It proceeds by examining the basic structure of conscious activity, which allows students to discover what they are doing when they are experiencing, understanding, knowing, and deciding. The goal of this analysis is the student's critical self-appropriation of their own natures as knowers and doers. The course introduces the student to the origins of such systematic and critical self-appropriation in ancient Greece, in the philosophical activities of Socrates and Plato. It explores how the most basic and overarching questions about human existence that were asked by the first philosophers are still those that must be asked if people are to penetrate below the facts of everyday life to think deeply about what is real, true, valuable, just, and meaningful in human life. They include such questions as: Who am I? What is real? Can I know what is truly worthwhile? Does God exist? Does history have a meaning? What is justice? Thus the course examines how critical self-reflection illuminates human and humane living in a way crucial to personal development.

### SMC 2301 Foundations of Practice: Ethics

This course develops a unified set of concepts and skills that form the foundation of objective moral reasoning. Included among those concepts are freedom, responsibility, the particular good, the common good, and the transcendent good. It elucidates those moral structures and precepts that are not only implicit in the nature of consciousness but also necessary for the flourishing of civilization. Thus, it builds upon the central ideas from SMC 1311 and SMC 1301. Prerequisites: SMC 1301, 1311, 1312, 1313, and 1314.

### SMC 2301 EG Foundations of Practice: Ethics

Same as SMC 2301. For engineering students only. Must also include a one-hour lab for guided discussions of cases in engineering ethics.

# PHILOSOPHY

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## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

### School Specific Core (SSC)

#### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3



# PHILOSOPHY

Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## **Four Year Degree Plan**

# PHILOSOPHY

## St. Mary's University BA in Philosophy (PL) Degree Plan - 2011

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

**All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.**  
**"Reflection" courses can be taken in any order followed by "Practice" courses in any order.**

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Fine Arts <sup>4</sup>	3
—	SSC Req History <sup>3</sup>	3	—	SSC Req Science <sup>9</sup>	3
—	SSC Req Speech <sup>1</sup>	3	—	PL 2310 Symbolic Logic	3
—	ND 0101 Personal & Academic Development	0			
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2304 Foundation of Practice: Literature	3
—	SMC 1314 Foundations of Reflection: God	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	PL 3361 Medieval Philosophy	3
—	PL 3360 Ancient Philosophy	3	—	PL 3362 Early Modern Philosophy	3
—	Elective	3	—	Elective	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Third Year Courses					
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SSC Req Mathematics <sup>8</sup>	3	—	SSC Req Theology <sup>7</sup>	3
—	PL 3363 Late Modern Philosophy	3	—	PL 3364 Contemporary Philosophy	3
—	PL 33XX or 43XX Elective	3	—	PL 33XX or 43XX Elective	3
—	Elective	3	—	Elective	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	SSC Req Literature <sup>5</sup>	3
—	PL 33XX or 43XX Elective	3	—	PL 4395 W Senior Seminar	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition **with a "C" or better**: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

### PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# PHILOSOPHY

St. Mary's University  
BA in Philosophy (PL) Degree Plan - 2011  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric (grade of "C" or better) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Philosophy Major Courses (30 hours)**

__ PL 2310 – Symbolic Logic	3
__ PL 3360 – Ancient Philosophy	3
__ PL 3361 – Medieval Philosophy	3
__ PL 3362 – Early Modern Philosophy	3
__ PL 3363 – Late Modern Philosophy	3
__ PL 3364 – Contemporary Philosophy	3
__ PL 4395 – Senior Seminar	3
__ PL 33XX or 43XX Electives	6
__ PL 33XX or 43XX Electives	3
__ PL 33XX or 43XX Electives	3

## **Electives (30 hours)**

__ Electives - An elective can be any course taken from any discipline.	30
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# PHILOSOPHY

## Department Courses and Descriptions

### **Symbolic Logic (3)**

PL 2310

This course is required of all philosophy majors and minors. It introduces the student to modern symbolic logic, and generally includes truth tables, the propositional calculus, and the predicate calculus, as well as translating between natural language and logic. It is a prerequisite for all advanced logic courses, and covers some topics tested by the LSAT.

### **Applied Ethics (3)**

PL 3314

This course covers recent philosophical discussions within one or more broad areas of ethics. Possible topics include but are not limited to medical ethics, business ethics, professional ethics, research ethics, environmental ethics, international issues, media ethics, computer ethics, educational ethics, and human and animal rights. Emphasis will be on the application of theories to cases. Prerequisite is any one of the following: SMC 2301, PL 2332, or PL 2336.

### **Environmental Philosophy (3)**

PL 3320

This course examines the relationship between human beings and the rest of the natural world. It explores the implications of affirming and of denying that relationship. Possible implications include but are not limited to the physical, emotional, intellectual, social, moral, professional, and spiritual development of the person, as well as the progress of society and culture.

### **Philosophy of Human Nature (3)**

PL 3322

This course focuses on questions in philosophical anthropology. Authors from different historical periods are studied. Interpersonal, moral, and social issues take precedence. Emphasis falls on the tension between theories of self-interest and psychological egoism on the one hand, and theories espousing the natural social orientation of human existence on the other. Other topics include friendship, love, and the meaning of self-sacrifice, as well as methods of discerning authenticity and inauthenticity in human relationships. .

### **Social & Political Philosophy (3)**

PL 3332

This course examines some of the main problems of social and political philosophy through an analysis, comparison, and critical examination of various views concerning the natures of individuality and society and the relations between them. It will include study of some of the main works by several major philosophers such as Plato, Aristotle, Hobbes, Machiavelli, Locke, Rousseau, Mill, Marx, Rawls, and Voegelin.

### **Feminist Philosophy (3)**

PL 3336

The course explores the philosophical contributions of feminism through careful study and evaluation of both traditional and feminist insights into philosophical questions. Areas of inquiry include the metaphysical, epistemological, moral, and political aspects of philosophical approaches to sex and

# PHILOSOPHY

gender.

## **Philosophy of Religion (3)**

PL 3344

Introduction to a critical study of religions; appropriate methods for the study of religious phenomena; variety of manifestations of the sacred in religions, ancient and modern; religious language; ritual; religious communities; the problem of evil; the relation of religion and morality; the question of salvation.

## **Eastern Philosophy (3)**

PL 3358

An introduction to Eastern/Asian philosophy. Topics vary from a study of orthodox Indian thought and its development, classical Chinese thought and its development, and Buddhist philosophy. Specific themes may include the nature of existence, the nature of human being, enlightenment, the individual and society, stages of human development, yoga, nature, and the sage.

## **Ancient Philosophy (3)**

PL 3360

This course covers the writings and the cultural and historical context of various Western philosophers who lived before 300 C.E. The selection of figures and texts explored will vary from one semester to the next, but Plato and Aristotle will always be covered. Other possible figures could include the Pre-Socratics, the Stoics, the Cynics, and the Epicureans.

## **Medieval Philosophy (3)**

PL 3361

This course covers the writings of various Mediterranean philosophers from the time of early Christianity (300 C.E.) through late scholasticism (1500 C.E.). The figures and texts will vary from one semester to another, Saint Augustine and Saint Thomas Aquinas will always be covered. Other possible subjects include but are not limited to Boethius, St. Anselm, Peter Abelard, Hildegard von Bingen, William of Occam, Duns Scotus, Francis Suarez, as well as Jewish and Arabic philosophers from the period.

## **Early Modern Philosophy (3)**

PL 3362

This course introduces students to early Modern (17th and 18th century) philosophy as it arose out of Renaissance Humanism and early Modern Science and developed in the Continental Rationalism of Descartes, Spinoza, and Leibniz and the British Empiricism of Hobbes, Locke, and Hume. Emphasis will be placed on the characteristic problems, questions, and methods of the period and on the continuity of concerns, problems and unresolved issues.

## **Late Modern Philosophy (3)**

PL 3363

This course examines the development of philosophical inquiry in late modernity from the late 18th century to the early 20th century. It emphasizes an historical understanding of the philosophical questions of this era and a critical appraisal of the responses offered by late modern thinkers such as Kant, Hegel, Schopenhauer, Mill, Nietzsche, and Kierkegaard.

## **Contemporary Philosophy (3)**

# PHILOSOPHY

PL 3364

This course explores the multifaceted development of philosophical thought in the contemporary world. It does so through an examination of representative philosophers and philosophical movements from the mid-20th century to the present day, particularly those arising in Western Europe. The course emphasizes historical and critical understanding of the philosophical questions and modes of thinking that emerge in the contemporary philosophical conversation. Areas of study may include, but are not limited to: existentialism, phenomenology, critical theory, post-structuralism, feminism, pragmatism, and Anglo-analytic philosophy.

## **American Philosophy (3)**

PL 3366

The course traces the development of philosophy in the United States with an eye to uncovering the philosophical underpinnings of contemporary American culture. Through the use of primary texts, the course will investigate the major questions and approaches that emerged in the United States and explore the uniquely American ways of reckoning with the perennial philosophical questions.

## **Philosophy in Latin America (3)**

PL 3368

This course introduces students to philosophical reflection in the Latin American tradition, touching on the Pre-Columbian, colonial, 19th, and 20th century periods. Some relevant European authors are also studied. Topics range widely. However, all topics are studied within their Latin American historical and social context. Questions about culture and cultural identity surface. The course explores the conditions of the possibility of sustaining cultural identity and to what extent philosophical reflection can contribute to this. Students gain a better understanding of both the unique history of Latin America and of the universal philosophical questions that the Latin American experience brings to life.

## **Special Topics (3)**

PL 3370

These courses each consist of an advanced study of some philosophical topic not covered in other courses in the catalog. The specific subject is indicated whenever the course is offered.

## **Philosophy of Film (3)**

PL 3372

This course covers various philosophical questions in film theory. Possible topics include the nature of film, film aesthetics, the language of film, the psychology of film, biases in films (gender, economic, racial, and so forth), and the ethics of censorship. A basic familiarity on the part of the student with the history of film from early silent films through CGI is presumed. Viewing of certain films may be assigned as homework.

## **Advanced Logic (3)**

PL 3375

This course covers standard topics in metalogic, including syntax, semantics, proof theory, completeness, decidability, consistency, and the Skolem-Lowenheim theorem. Prerequisite: PL 2310 Symbolic Logic.

## **Philosophy of Literature (3)**

PL 3378

# PHILOSOPHY

This course examines the literary expression of philosophical concerns, such as authenticity, freedom and choice, good vs. evil, and justice vs. injustice. This typically involves the study of one or two philosophical works that investigate a philosophical issue (e.g., the ideal society; the tragic hero) to supplement the focus on various novels, plays, or poems exploring the issue in literature. Texts may include literary criticism, used to assist in explicating the themes and concepts involved in the philosophical issue under consideration. The course usually includes multicultural expressions and concerns.

## **Directed Study (3)**

PL 3380

Directed studies are an opportunity for students to pursue critical inquiries of their own choosing in consultation with a member of the department who knows the subject area and is sympathetic to working with the project. A Directed Study program must be arranged according to University policy and include permission of the chair and major adviser.

## **Philosophy of Law (3)**

PL 4310

Examination of various foundations of human legal order concentrating on a search for what can unite a people effectively under a rule of law; perspectives of natural law and legal positivism; the relation between law and justice; legal and moral obligations; the power of law to bind effectively and the use of sanctions; and problems arising from various theories of law.

## **Epistemology (3)**

PL 4312

This course considers the cognitive relationship between humans and the world, knowers, knowledge, and the known. It will examine a variety of problems and theories concerning human knowing, including, for example: innate ideas, rationalism, empiricism, constructivism, the pragmatic notion of truth, and the problem of intentionality.

## **Professional Ethics (3)**

PL 4318

This course explores the ethical obligations of professionals, how these obligations arise, and how (or whether) they differ significantly from the ethical obligations of non-professionals. Possible topics include but are not limited to medicine, law, engineering, journalism, business, teaching, and politics.

## **Philosophy of Economics (3)**

PL 4322

A critical study of the meaning of economy and economic relations within social living. Themes covered include the meaning of economy, work, labor, human vocation, justice, and poverty. This course begins with a survey of views of what constitutes an economy and the meaning of just economic relations. It includes a study of contemporary theories of justice, including Catholic Social Teaching, with specific application to selected issues of economic justice.

## **Philosophy of Science (3)**

PL 4324

This course investigates the basic concepts and methods of the natural, social, and formal sciences.

# PHILOSOPHY

Possible topics include but are not limited to quantification, pseudoscience, realism versus anti-realism, probabilistic versus classical science, the ethics of research and technology, determinism versus freedom, and scientific revolutions. Prerequisite: SMC 1312.

## **Philosophy of Culture (3)**

PL 4334

This course explores the most serious challenges facing the individual and societies in the 21st century: the presence and force of culture and its historical relationship to religion, civilization, and social order. It employs and relates perspectives from critical realist philosophy, world history, and culture studies.

## **Philosophy of Art & Aesthetics (3)**

PL 4340

A critical examination of art as a realm of meaning. Aesthetics is a critically important part of every human life and culture. As a unique realm of The Beautiful, as encountered in music, dance, literature, architecture, fashion landscape architecture, all the fine and performing as well as culinary and practical arts both transmit and inculcate cultural, social and moral values as well as fulfilling natural human desires for sensually intellectual enrichment.

## **Metaphysics (3)**

PL 4342

Metaphysics examines the most fundamental questions, inquiring into the origins or first principles of the ground of existence. The course will confront the need or impulse for metaphysical contemplation, the fundamental insights and structures of metaphysics, and the question of the legitimacy of metaphysics.

## **Philosophy of History (3)**

PL 4350

This course inquires into history, i.e., that which is written and that which is written about. It surveys the efforts to make the course of human history intelligible. Emphasis is placed on the 19th and 20th century questions concerning the conditions for the possibility of historical knowledge and truth.

## **Senior Seminar (3)**

PL 4395

A capstone seminar for philosophy majors. This course focuses on developing a student's consciousness of the understandings and skills acquired through careful study of the history, methods, and specializations of philosophy. Presentations will be made by members of the department on a variety of current topics and issues in philosophy. Emphasis will be placed on the student integrating the various areas of study and the variety of contemporary schools of philosophical activity. Each student will be required to complete a major paper in an area of the student's interest. (Prerequisite: philosophy major or permission of the chair).



# POLITICAL SCIENCE

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Political Science

## Department Chair

Steve Neiheisel, Ph.D. [sneiheisel@stmarytx.edu](mailto:sneiheisel@stmarytx.edu)

## Description of Program/Major

Aristotle states: "The end and purpose of a polis [a civic community] is the good life, and the institutions of social life are means to that end." Individuals who appreciate politics, who desire to influence society, who enjoy debating ideas, and who like to organize people or events, should consider the political science major.

The Department of Political Science at St. Mary's University is committed to education, to the scholarly life, and to an approach that urges students to serve society. St. Mary's Department of Political Science fosters the building of an engaged community characterized by social justice and civic conscience.

Our goal is for political science graduates to apply the answers they formulate to their private lives and to their careers.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3

# POLITICAL SCIENCE

SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# POLITICAL SCIENCE

St. Mary's University

BA in Political Science (PO) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	SMC 1311 Foundations of Reflection: Self	3	___	SSC Req Foreign Language <sup>6</sup>	3
___	SSC Req Composition & Rhetoric <sup>2</sup>	3	___	SSC Req Mathematics <sup>8</sup>	3
___	SSC Req Foreign Language <sup>6</sup>	3	___	SSC Req Speech <sup>1</sup>	3
___	PO 1311 American National Government	3	___	PO 1312 Texas Politics*	3
___	ND 0101 Personal & Academic Development	0			
Total		15	Total		15
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	SMC 1314 Foundations of Reflection: God	3	___	SMC 2304 Foundation of Practice: Literature	3
___	SSC Req Science <sup>9</sup>	3	___	SSC Req History <sup>3</sup>	3
___	PO 2310 Research Methods I	3	___	PO 2311 Research Methods II	3
___	Elective	3	___	Elective	3
Total		15	Total		15
Third Year Courses					
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
___	SSC Req Literature <sup>5</sup>	3	___	SSC Req Fine Arts <sup>4</sup>	3
___	Upper Level PO (Am/Admin/Theory/IR)**	3	___	Upper Level PO (Am/Admin/Theory/IR)**	3
___	Upper Level PO (Am/Admin/Theory/IR)**	3	___	Upper Level PO (Am/Admin/Theory/IR)**	3
___	Elective	3	___	Elective	3
Total		15	Total		15
Fourth Year Courses					
___	SSC Req Theology <sup>7</sup>	3	___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
___	PO 5301 Senior Seminar	3	___	Upper Level PO (Am/Admin/Theory/IR)**	3
___	Upper Level PO (Am/Admin/Theory/IR)**	3	___	Elective	3
___	Elective	3	___	Elective	3
___	Elective	3	___	Elective	3
Total		15	Total		15

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics (MT 1303 Recommended): MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

\*PO 1314 Understanding Global Politics may be substituted by permission of department chairperson

\*\* 18 advanced hours at least one course from the following four areas of Political Science is required:

*American Politics & Political Behavior:* PO3300, 3301, 3302, 3303, 3304, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317

*Public Administration and Public Law:* PO3320, 3321, 3322, 3323, 3324, 3325, 3330, 3331, 4325, 4332, 4333

*Political Theory:* PO3340, 3341, 3342, 3343, 3344

*Comparative/International Politics:* PO3360, 3361, 3362, 3363, 3364, 3365, 3366, 3367, 4368, 4369, 4370

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing PO 2310 and PO 2311.

# POLITICAL SCIENCE

St. Mary's University  
BA in Political Science (PO) Degree Plan - 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics (MT 1303 Recommended) – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Political Science Major Courses (33 hours)**

__ PO 1311 – American National Government	3
__ PO 1312 – Texas Politics (PO 1314 Understanding Global Politics may be substituted by permission of department chairperson)	3
__ PO 2310 – Research Methods I	3
__ PO 2311 – Research Methods II	3
__ PO 5301 – Senior Seminar	3
__ American Politics & Political Behavior: PO3300, 3301, 3302, 3303, 3304, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317	3
__ Public Administration and Public Law: PO3320, 3321, 3322, 3323, 3324, 3325, 3330, 3331, 4325, 4332, 4333	3
__ Political Theory: PO3340, 3341, 3342, 3343, 3344	3
__ Comparative/International Politics: PO3360, 3361, 3362, 3363, 3364, 3365, 3366, 3367, 4368, 4369, 4370	3
__ 6 advanced hours not previously taken of Political Science from the following: PO 3300, 3301, 3302, 3303, 3304, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3320, 3321, 3322, 3323, 3324, 3325, 3330, 3331, 3340, 3341, 3342, 3343, 3344, 3360, 3361, 3362, 3363, 3364, 3365, 3366, 3367, 4325, 4332, 4333, 4368, 4369, 4370	6

## **Electives (27 hours)**

__ Electives - An elective can be any course taken from any discipline.	27
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing PO 2310 and PO 2311.

# POLITICAL SCIENCE

## Department Courses and Descriptions

### **American National Government (3)**

PO 1311

A study of the formal and informal structures and functions of American National Government. Emphasis is placed on the processes by which public policy is made with pertinent examples of that policy. (GOVT 2305)

### **Texas State & Local Government (3)**

PO 1312

A study of the formal and informal structures of Texas State Government. Emphasis is placed on the processes by which public policy is made with pertinent examples of that policy. This course is required for Texas Teacher Certification. (GOVT 2306)

### **Understanding Global Politics (3)**

PO 1314

A study of basic political concepts, institutions, and behavior. Political organizations and influence are examined in the contexts of contemporary Western and Eastern political systems. Historical and contemporary political ideals are examined as influences on twentieth century political systems and movements.

### **High Technology & Society (3)**

PO 2300

This course will explore the social, economic, and political implications of modern science and technology. Among topics discussed will be the social, political, and ethical nature of scientific research and technological development. The domestic as well as international impacts of the new technologies will be discussed from a multi-disciplinary perspective. This course will also involve exploring a number of “hands on” demonstrations and exercises in super conductors, laser, fiber optics, etc.

### **Political Research Methodology (3)**

PO 2310

Introduction to the methods of political research. The focus is on designing research. Students will assess the state of scholarly literature, identify interesting questions, formulate strategies for collecting qualitative and quantitative data for answering those questions. They shall learn how to, and shall conduct a literature review on some substantive question. Successful completion of this course fulfills the information literacy proficiency requirements of the core curriculum.

### **Applied Research Methods (3)**

PO 2311

The second course of a two-course sequence on research methods in political science. The focus is on conducting and evaluating political science research. Students will assess the state of scholarly literature, identify interesting questions, formulate strategies for collecting qualitative and quantitative data for answering them, further hone methodological tools with which to conduct research, and learn how to write up publishable results. Substantive examples will be drawn from American politics, international relations, comparative politics, and public administration, which all rely on empirical evidence.

Prerequisites: PO 2310 or permission of the Instructor.

# POLITICAL SCIENCE

## **Topics in American/State/Local Politics (1)**

PO 3100

Study of one of the broad range of topics in federal, state, and local politics, including structures and functions of various institutions.

## **Topics in Political Behavior (1)**

PO 3110

Study of one of a broad range of topics in political behavior, including socialization, political participation, ethnic politics, and religion.

## **Topics in Public Policy (1)**

PO 3120

Study of one of a broad range of topics in public policy or public administration, including civil rights, immigration, school finance, social welfare, etc.

## **Topics in Political Thought (1)**

PO 3140

Problems, values, and uses of selected normative and empirical political thinkers. Topics vary.

## **Topics in International/Comparative Politics (1)**

PO 3160

Study of any one of the broad range of topics in International or Comparative Politics. To include such topics as peaceful resolution of international conflict, international human rights, and comparative institutions.

## **Topics in American/State/Local Politics (2)**

PO 3200

Study of one of the broad range of topics in federal, state, and local politics, including structures and functions of various institutions.

## **Topics in Political Behavior (2)**

PO 3210

Study of one of a broad range of topics in political behavior, including socialization, political participation, ethnic politics, and religion.

## **Topics in Public Policy (2)**

PO 3220

Study of one of a broad range of topics in public policy or public administration, including civil rights, immigration, school finance, social welfare, etc.

## **Topics in Political Thought (2)**

PO 3240

Problems, values, and uses of selected normative and empirical political thinkers. Topics vary.

## **Topics in International/Comparative Politics (2)**

# POLITICAL SCIENCE

PO 3260

Study of any one of the broad range of topics in International or Comparative Politics. To include such topics as peaceful resolution of international conflict, international human rights, and comparative institutions.

## **Topics in American/State/Local Politics (3)**

PO 3300

Study of one of the broad range of topics in federal, state, and local politics, including structures and functions of various institutions.

## **The National Executive (3)**

PO 3301

Office and powers of the presidency, individual back grounds, evolution of the office, elections are explored. The President's part in the formulation and implementation of domestic and foreign policy are highlighted.

## **The Legislative Process (3)**

PO 3302

Every aspect of how our national legislature functions and what external and internal variables affect that function is the focus of this class. Both institutional arrangements and interpersonal relationships endemic to the Congress are explored. Consequently, the committee, seniority, party, and leadership systems are thoroughly discussed, together with the role the Congress plays in the overall national governmental scheme.

## **American Political Parties & Interest Groups (3)**

PO 3303

Analysis of the development of American political parties; growth and influence of interest groups; voting, elections and presidential campaigns; research in governmental and political events.

## **State and Local Politics (3)**

PO 3304

Study of American states, including structures and functions of state government, problems in federalism, political processes, elections, and public policy.

## **Topics in Political Behavior (3)**

PO 3310

Study of one of a broad range of topics in political behavior, including socialization, political participation, ethnic politics, and religion.

## **Political Behavior (3)**

PO 3311

A survey of the bases of political behavior: psychology, socialization, and participation.

## **US Latino Politics (3)**

PO 3312

This course will offer a political history of the diverse Latino populations in the United States. Topics to

# POLITICAL SCIENCE

be covered will include racism, civil rights, political participation, and others.

## **Ethnicity, Race, and Class (3)**

PO 3313

The relationship between American society's class, race, and gender cleavage and public policies, at all governmental levels, is explored. Consequently, this course treats this relationship as a “two-way interaction”.

## **Religion and Politics (3)**

PO 3314

The study of the impact of religion on politics; in particular, the emphasis is on the influence of religious institutions, attitudes and behaviors.

## **Political Communication, Media & Elections (3)**

PO 3315

Study of trends in American voting behavior; relationship of political communication and media campaigns, elections and voters' choices; analysis of media in conveying political information; finance and elections; use of survey research in analysis of voting behavior and campaigns; election simulation.

## **Gender Politics (3)**

PO 3316

This course examines and assesses the role and participation of women in American political life. Topics include: women and men as voters, candidates and office holders, the Women's Movement, civil rights, grass roots participation, and key policy issues that have particular relevance to women.

## **American Thought and Culture (3)**

PO 3317

A study of American ideas and how those ideas are expressed in literature, art and architecture.

## **Topics in Public Policy (3)**

PO 3320

Study of one of a broad range of topics in public policy or public administration, including civil rights, immigration, school finance, social welfare, etc.

## **Public Administration (3)**

PO 3321

An examination of administration and politics, administrative legislative relationships, budgetary processes, personnel administration, administrative rule-making, organization, and policy development.

## **Public Policy Analysis (3)**

PO 3322

Exploration of various methods used by public agencies to evaluate the economy, efficiency, and/or effectiveness of their operations, with applications to contemporary public policies. PO 2310 preferred but not required as prerequisite.

## **Urban Politics (3)**



# POLITICAL SCIENCE

PO 3323

Concentration on the origins, evolutionary processes, and dynamics of cities and their attendant political institutions and processes. Investigation of the externalities resulting from the decisions and non-decisions of the political and bureaucratic processes of urban governments.

## **The Post Modern City (3)**

PO 3324

## **Intro to Organizational Leader (3)**

PO 3325

An introduction to organizational life and the development of the knowledge and skills needed to be an effective leader.

## **Violence Against Children & Public Policy (3)**

PO 3326

The course covers identification of types of child abuse and their consequences, prevention and intervention strategies and options, and paths to healing and recovery. Students will identify and utilize resources available regarding knowledge of, intervention in, prevention of, healing and recovery from abuse so as to be better prepared to respond to child abuse if and when it is encountered in students' professional lives.

## **Topics in Law (3)**

PO 3330

Study of a broad range of topics in law, including race, gender, behavior, civil rights, international law, and comparative judicial systems.

## **Judicial Process (3)**

PO 3331

The study of the development of the U.S. Supreme Court. Analysis of the American court system including the structure and function of the judicial process.

## **Topics in Political Thought (3)**

PO 3340

Problems, values, and uses of selected normative and empirical political thinkers. Topics vary.

## **Classical Political Thought (3)**

PO 3341

Development of political thinking from the ancient Greeks to the medieval period. Critical analysis and evaluation of original sources.

## **Early Modern Political Thought (3)**

PO 3342

Development of political thinking from Machiavelli to Marx. Critical analysis and evaluation of original sources.

# POLITICAL SCIENCE

## **20th Century Political Thought (3)**

PO 3343

Basic issues and questions of value in political thought with emphasis upon Lenin, Marx, fascism, existentialism, and contemporary political thought.

## **American Political Thought (3)**

PO 3344

Basic issues and questions of value in American thought from colonial times to the present; relevance of political thought for contemporary prospects and problems.

## **Topics in International/Comparative Politics (3)**

PO 3360

Study of any one of the broad range of topics in International or Comparative Politics. To include such topics as peaceful resolution of international conflict, international human rights, and comparative institutions.

## **International Relations (3)**

PO 3361

The course examines the themes of international relations, power, order, justice, war and peace, in the context of theory and of contemporary world politics.

## **European Politics (3)**

PO 3362

This course will focus on the comparative analysis of the political systems of Europe. The discussion and analysis will focus on the governmental institutions, political cultures, interest groups, and political parties of these countries. The impact of these factors, along with domestic and foreign policy problems, on political stability and instability will be the major focus of research and writing in the course.

## **Latin American Politics (3)**

PO 3363

This course provides a general overview of the political problems associated with the quest for greater socio-economic development in Latin America. Among the problems and perspectives examined are colonial legacies, governmental systems, political cultures, interest groups and political parties, and contemporary problems. In addition to these themes there will be a brief analysis of contemporary events and political environments in the major countries of this region

## **Middle Eastern Politics (3)**

PO 3364

The political systems of the Middle East, the Maghreb, and the Horn of Africa. Islamic culture, the politics of oil, international relations, and analysis of contemporary issues are discussed.

## **Third World Politics (3)**

PO 3365

The political systems of Third World states in the post-colonial and post-Cold War world, with emphasis on the effects of culture and socio-economic development upon political formation.

# POLITICAL SCIENCE

## **Asian Politics (3)**

PO 3366

A comparative analysis of the political systems of Asia with focus on government, current domestic and foreign policies, political cultures, interest groups. Depending on the topic, the course will deal with East Asia (Japan, China, Korea, Taiwan), South Asia (India, Pakistan, Sri Lanka, Bangladesh, Nepal) or South East Asia (the ASEAN countries). The topic will be indicated on the student's transcript.

## **African Politics (3)**

PO 3367

A survey of the political systems of sub-Saharan Africa: government structures, leadership, the role of the military, party systems, international relations, and movements toward democratization.

## **Government Leadership (3)**

PO 3370

This course compares and contrasts the different styles required for effective government leadership within each of four types of government organizations: legislative leadership, executive leadership, bureaucratic leadership and judicial leadership.

## **Social & Civic Leadership (3)**

PO 3375

This course begins with an examination of the role of social and civic organizations in democratic society and proceeds to more specific study of how to lead nonprofit organizations, the mission-driven vehicles of social and civic work. Topics include social ecology, mission development, structure and organizational design, fundraising, board recruitment and governance, volunteer motivation, strategic planning, executive leadership and social entrepreneurship.

## **Business, Government & Public (3)**

PO 4325

A study of how businesses, workers, public interest groups, consumers and government agencies interact and shape public policies and how those interactions and public policies affect society.

## **Constitutional Law I (3)**

PO 4332

Analysis of the American constitutional system, including its institutional aspects such as judicial review, federalism, and the presidency. In addition, a study of fundamental rights such as voting rights and a right to privacy will be examined. Constitutional Law II is not required.

## **Constitutional Law II (3)**

PO 4333

Analysis of the constitutional system, including political and civil rights such as speech, press, assembly, religion, race discrimination, gender discrimination, and affirmative action. PO 4332 is not a prerequisite.

## **International Political Economy (3)**

PO 4368

The examination of various value assessments and ideological perspectives about the structure and political problems of contemporary international economic issues. The course also analyzes the interplay

# POLITICAL SCIENCE

of domestic and international forces in deciding on and implementing economic policies in both advanced and less developed societies.

## **World Security Problems (3)**

PO 4369

A general overview of the theories, causes, and strategies of contemporary international security problems and policies. This course will include the consideration of such topics as nuclear proliferation, conventional weapons and their transfers, terrorism, and security issues. This course also examines various security agreements, proposals, and prospects for international peace and cooperation.

## **United States Foreign Policy (3)**

PO 4370

The focus of this course is on the relationship between U.S. foreign policy making and implementation and vital national and global interests. Among the perspectives examined are the roles of values, images, and institutions in shaping U.S. foreign policy. The course also considers specific U.S. policies vis-à-vis other countries and regions of the world, as well as important general international issues.

## **Directed Readings and Research (1)**

PO 5199

Special studies designed for selected undergraduate students with permission of instructor and chair person. Prerequisite: Senior standing .

## **Directed Readings and Research (2)**

PO 5299

Special studies designed for selected undergraduate students with permission of instructor and chair person. Prerequisite: Senior standing.

## **Internship Political Science (3)**

PO 5300

Experience-based education in the context of an acceptable pre-professional and/or political activity, to include work under the supervision of an elected, administrative and/or judicial official or in some other political context approved by the department. Ordinarily junior or senior status preferred. Credit of 3, 6 semester hours upon recommendation of Internship coordinator. To obtain 3 or 6 semester hours, it is generally recommended that one must spend 10 hours per week to obtain 3 hours credit and 20 hours per week to obtain 6 hours credit. A research paper is required. A reflection paper or weekly log may also be required.

## **Senior Seminar in Political Science (3)**

PO 5301

A required capstone course for senior political science majors. Synthesized theories, research, and ethical issues in the field of political science and clarifies the connections between the different sub-fields of the discipline. Prepares students for graduate studies, law school, or careers appropriate for political science majors by emphasizing critical reading, writing, and oral communication skills. Writing intensive course.

## **Directed Readings and Research (3)**

PO 5399

# POLITICAL SCIENCE

Special studies designed for selected undergraduate students with permission of instructor and chair person. Prerequisite: Senior standing.

## **Internship Political Science (6)**

PO 5600

Experience-based education in the context of an acceptable pre-professional and/or political activity, to include work under the supervision of an elected, administrative and/or judicial official or in some other political context approved by the department. Ordinarily junior or senior status preferred. Credit of 3, 6 semester hours upon recommendation of Internship coordinator. To obtain 3 or 6 semester hours, it is generally recommended that one must spend 10 hours per week to obtain 3 hours credit and 20 hours per week to obtain 6 hours credit. A research paper is required. A reflection paper or weekly log may also be required.

# PORTUGUESE

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Languages

## Department Chair

Eva P. Bueno, Ph.D. [ebueno@stmarytx.edu](mailto:ebueno@stmarytx.edu)

## Department Courses and Descriptions

### Introduction to Portuguese I (3)

PR 1311

Essentials of Portuguese with an emphasis on the Brazilian dialect and pronunciation. An introduction to the four phases of language learning: understanding, reading, speaking, and writing Portuguese and an understanding of Brazilian culture. Permission of the Department Chair is required. (Lecture 2 hours and audio/video/writing Laboratory 1 hour)

### Introduction to Portuguese II (3)

PR 1312

Essentials of Portuguese with an emphasis on the Brazilian dialect and pronunciation. An introduction to the four phases of language learning: understanding, reading, speaking, and writing Portuguese and an understanding of Brazilian culture. Permission of the Department Chair is required. (Lecture 2 hours and audio/video/writing Laboratory 1 hour) Prerequisite: PR1311.

### 2nd Year Portuguese I (3)

PR 2311

Portuguese language reviewed and applied to practice in composition. The course includes practice in comprehension of spoken Brazilian Portuguese and guided speaking, reading, and writing activities leading to self-expression in the Portuguese language. (Lecture 2 hours and audio/video/writing Laboratory 1 hour) (PR 2311 or equivalent is prerequisite for PR 2312)

### 2nd Year Portuguese II (3)

PR 2312

Portuguese language reviewed and applied to practice in composition. The course includes practice in

# PORTUGUESE

comprehension of spoken Brazilian Portuguese and guided speaking, reading, and writing activities leading to self-expression in the Portuguese language. (Lecture 2 hours and audio/video/writing Laboratory 1 hour) Prerequisite: PR 2311 or equivalent.

## **Portuguese for Spanish Speakers I (3)**

PR 2317

The course is designed for speakers with strong Spanish grammatical and conversational skills. Knowledge of Spanish is applied to make the transition into upper level Portuguese courses. The course includes intensive practice in spoken Brazilian Portuguese and guided speaking, reading, and writing activities leading to self-expression in the Portuguese language. This two semester course satisfies the Core Curriculum Language requirement. Permission of the Department Chair is required. (Lecture 2 hours and audio/video/writing Laboratory 1 hour)

## **Portuguese for Spanish Speakers II (3)**

PR 2318

The course is designed for speakers with strong Spanish grammatical and conversational skills. Knowledge of Spanish is applied to make the transition into upper level Portuguese courses. The course includes intensive practice in spoken Brazilian Portuguese and guided speaking, reading, and writing activities leading to self-expression in the Portuguese language. This two semester course satisfies the Core Curriculum Language requirement. Permission of the Department Chair is required. (Lecture 2 hours and audio/video/writing Laboratory 1 hour) Prerequisite: PR2317

## **Brazilian Culture & Civilization (3)**

PR 3311

A survey of the historical, social, cultural, artistic and intellectual institutions of Brazil, designed to provide a better understanding of the country and its people. Prerequisite: PR 2312 or 2317.

## **Southern Cone Luso-Brazil Language (3)**

PR 3329

This course is designed to prepare participants in the Southern Cone Studies program for their semester in Brazil. Since countries in the region have a shared history and culture and a tradition of involvement in diplomatic and commercial engagements through out the ages, a comparison and contrast approach to the region makes this course a must for all participants in the program. Students will review their language skills in preparation for the in-country phase of the program. Enrollment is limited to participants in the Southern Cone Studies Program.

## **Survey of Luso Brazilian Lit (3)**

PR 3341

The course is a survey of the literature of Brazil and its origins in Portugal proper. Its development from the Portuguese colonization to the present is explored in supplementary texts. The objective of the course is to familiarize the student with representative works of these literatures. Lectures, readings, and literary analysis. Prerequisite: PR 2312 or 2318.

## **Advanced Comm Skills in Portug (3)**

PR 3361

Intensive review of Brazilian Portuguese grammar and usage. Reading, analysis and discussion of literary

# PORTUGUESE

selections, current events, topics of interest and key problems and issues common to Brazil. Original composition and oral delivery. A laboratory fee is charged. Prerequisite: PR 2312 or 2317 or equivalent.

## **Portuguese Lang for the Prof (3)**

PR 3381

Review of grammar. Incorporates the language and vocabulary relating to a variety of professions including business, medicine, engineering, law and education. To enable the student seeking a career in these professions to convey his/her skills in Portuguese. Prerequisite: PR 2312 or PR 2318, or equivalent.

## **Topics in Portuguese (3)**

PR 3382

Study of any of a broad range of topics in contemporary Brazilian Portuguese Language, to include issues of the day in Brazil. Conducted entirely in Portuguese. May be taken twice if topic is different. Prerequisite PR 2312 or 2318 or equivalent.



# PSYCHOLOGY

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Psychology

## Department Chair

Patricia Owen, Ph.D. [powen@stmarytx.edu](mailto:powen@stmarytx.edu)

## Description of Program/Major

Individuals who are interested in studying human behavior and enjoy working with people often consider the psychology major.

The St. Mary's University psychology program offers students opportunities to learn about psychological theory, research and application. The curriculum is designed to train students to think critically and logically about topics in learning, biopsychology, statistics, experimental design, and abnormal and social psychology. Students also design their own social science research and present their findings at a research conference.

Psychology majors at St. Mary's University benefit from small classes, personal advising, and highly qualified faculty recognized for their teaching. Research, service and career preparation are all emphasized to fully prepare psychology majors for postgraduate life. The faculty is committed to mentoring psychology students to promote a growth-oriented community grounded in faith and engaged in the pursuit of knowledge.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301      Foundations of Civilization

3

# PSYCHOLOGY

SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# PSYCHOLOGY

## St. Mary's University BA in Psychology (PS) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	SMC 1311 Foundations of Reflection: Self	3	___	SSC Req Mathematics <sup>8</sup>	3
___	SSC Req Composition & Rhetoric <sup>2</sup>	3	___	SSC Req Science <sup>9</sup>	3
___	SSC Req Fine Arts <sup>4</sup>	3	___	SSC Req Speech <sup>1</sup>	3
___	PS 1301 Intro to Psychology*	3	___	Elective	3
___	ND 0101 Personal & Academic Development	0			
	Total	15		Total	15
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	SMC 1314 Foundations of Reflection: God	3	___	SMC 2304 Foundation of Practice: Literature	3
___	SSC Req Foreign Language <sup>6</sup>	3	___	SSC Req Foreign Language <sup>6</sup>	3
___	PS 3164 Sophomore Colloquium*	1	___	PS 3183 Experimental Psychology Lab*	1
___	PS 3373 Learning*	3	___	PS 3383 Experimental Psychology*	3
___	PS 3381 Intro to Statistics Psychology*	3	___	Elective	3
	Total	16		Total	16
Third Year Courses					
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
___	SSC Req Literature <sup>5</sup>	3	___	SSC Req Theology <sup>7</sup>	3
___	PS 3341 Physiological Psychology*	3	___	PS 3265 Junior Colloquium*	2
___	Advanced Psychology Elective	3	___	PS 3331 Abnormal Psychology*	3
___	Elective	3	___	Elective	3
	Total	15		Total	14
Fourth Year Courses					
___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	___	SSC History <sup>3</sup>	3
___	PS 3390 Social Psychology*	3	___	Advanced Psychology Elective	3
___	Advanced Psychology Elective	3	___	Elective	3
___	Elective	3	___	Elective	3
___	Elective	3	___	Elective	3
	Total	15		Total	15

Total Hours 121

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition **with a "C" or better**: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

\* PS 1301, PS 3164, PS 3265, PS 3331, PS 3341, PS 3373, PS 3381, **PS 3383, PS 3183, and PS 3390 must be "C" or higher.**

### PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing PS 3383 W.

# PSYCHOLOGY

St. Mary's University  
BA in Psychology (PS) Degree Plan - 2010  
121 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, TH 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Psychology Major Courses (34 hours)**

__ PS 1301 – Intro to Psychology (" <b>C</b> " or higher)	3
__ PS 3164 – Sophomore Colloquium (" <b>C</b> " or higher)	1
__ PS 3183 – Experimental Psychology Lab (" <b>C</b> " or higher)	1
__ PS 3265 – Junior Colloquium (" <b>C</b> " or higher)	2
__ PS 3331 – Abnormal Psychology (" <b>C</b> " or higher)	3
__ PS 3341 – Physiological Psychology (" <b>C</b> " or higher)	3
__ PS 3373 – Learning (" <b>C</b> " or higher)	3
__ PS 3381 – Intro to Statistics Psychology (" <b>C</b> " or higher)	3
__ PS 3383 – Experimental Psychology (" <b>C</b> " or higher)	3
__ PS 3390 – Social Psychology (" <b>C</b> " or higher)	3
__ Advanced Psychology Electives	9

## **Electives (27 hours)**

__ Electives - An elective can be any course taken from any discipline.	27
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing PS 3383W.

# PSYCHOLOGY

## Department Courses and Descriptions

### **General Psychology (3)**

PS 1301

Introductory study of human nature and behavior. (PSYC2301)

### **Personality (3)**

PS 2353

Nature, development, structure, and dynamics of personality. Prerequisite: PS1301 (PSYC2316)

### **Development (3)**

PS 2355

Human development in terms of heredity, environment, maturation, learning, and other concepts. (formerly PS3355)

### **Topics in Psychology (3)**

PS 2399

Elective course only used for transfer work.

### **Sophomore Colloquium (1)**

PS 3164

An exploration of psychology as a science and profession. Focuses on the career fields included within the discipline. Participation in sophomore weekend experience required. Writing Intensive class.

Prerequisite: PS1301

### **Experimental Psychology Lab (1)**

PS 3183

Introduction to the principles and methods of experimental psychology. Selected experiments in perception, cognition, and social psychology. Independent project required. Prerequisite: PS 1301, 3381. Concurrent enrollment in PS 3383 (Lecture) is required.

### **Junior Colloquium (2)**

PS 3265

An examination of the academic, ethical, legal, and practical issues associated with the profession of psychology. Prepares majors for graduate study and careers in the discipline. Writing Intensive class.

Prerequisite: PS1301

### **Abnormal Psychology I (3)**

PS 3331

Introduction to historical and contemporary concepts and evidence concerning psychopathology.

Prerequisite: PS 1301, 3341

### **Human Sexuality (3)**

PS 3337

A psychological overview of human sexuality emphasizing socio-psychological, physiological, and ethical aspects.

# PSYCHOLOGY

## **Physiological Psychology (3)**

PS 3341

The biological events which underlie human behavior. Prerequisite: PS1301

## **Perception (3)**

PS 3343

Sensory experience and basic cognitive organization. Prerequisite: PS1301

## **Industrial Psychology (3)**

PS 3361

Psychological factors in personnel and organizational psychology. Prerequisite: PS1301.

## **Motivation (3)**

PS 3371

Biological and cultural factors in motivation. Prerequisite: PS1301

## **Undergraduate Field Placement (3)**

PS 3372

On an individual basis students will be placed in community agencies or institutions which have recognized in-service training programs. Periodic conferences will be required. Prerequisite: PS 1301, 3383 and GPA 3.0 or better.

## **Learning (3)**

PS 3373

Fundamental principles and theories of learning as approached from the behavioral and cognitive perspective. Prerequisite: PS1301

## **Introductory Statistics (3)**

PS 3381

An introduction to descriptive and inferential statistics designed for the student of Psychology. Prerequisite: completion of the university mathematics requirement and PS1301.

## **Experimental Psychology (3)**

PS 3383

Introduction to the principles and methods of experimental psychology. Selected experiments in perception, cognition, and social psychology. Independent project required. Prerequisite: PS 1301, 3381. Concurrent enrollment in PS 3183 (Lab) is required.

## **Multivariate Statistics (3)**

PS 3385

Sampling, hypothesis testing, analysis of variance, multiple regression analysis, multiple discriminate analysis, factor analysis. Hands-on experience in the use of various statistical computer programs. Prerequisite: 3381. (same as SE3385)

## **Human Factors (3)**

# PSYCHOLOGY

PS 3386

Human capabilities and limitations that affect the design of human-machine systems. Prerequisite: PS1301

## **Social Psychology: Theor&Applic (3)**

PS 3390

A scientifically based study of the ways in which the presence of others influences individuals' affect, cognition, and behaviors. The course includes an extensive investigation of common methodologies and recent research. Prerequisite: PS1301

## **History and Systems (3)**

PS 3391

A study of the historical, philosophical, and scientific ideas which are the basis of contemporary psychology. Prerequisite: PS1301

## **Advanced Topics for Undergraduates (1)**

PS 4163

Special studies designed for selected undergraduate students with permission of instructor. Maybe repeated for additional credit.

## **Advanced Topics for Undergraduates (2)**

PS 4263

Special studies designed for selected undergraduate students with permission of instructor. Maybe repeated for additional credit.

## **Internship in Psychology (3)**

PS 4300

A supervised activity which allows the student to apply educational experiences in an institutional/organizational setting.

## **Advanced Topics for Undergraduates (3)**

PS 4363

Special studies designed for selected undergraduate students with permission of instructor. Maybe repeated for additional credit.

# SOCIOLOGY

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Sociology

## Department Chair

Janet Armitage, Ph.D. [jarmitage1@stmarytx.edu](mailto:jarmitage1@stmarytx.edu)

## Description of Program/Major

Sociology is the social science that studies human groups and society. It explores the multiple influences that groups exert in our personal lives: friendships, marriages, families, work units, businesses, schools, neighborhoods, organizations, communities, churches and clubs, among others.

In addition, sociology analyzes how and why groups form, hold together, and sometimes break up. It seeks an accurate and scientific understanding of society and of social life.

Likewise, sociology explores the many social and cultural forces that operate throughout society— forces that form individual persons, shape their attitudes and behaviors, and determine social events.

Sociology students learn countless applied and practical ways to change and to improve human life. Through the study of society, students learn how to deal more effectively with others while developing their thinking, analytical, problem-solving, research and communication skills.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3



# SOCIOLOGY

SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# SOCIOLOGY

St. Mary's University  
BA in Sociology (SC) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SSC Req History <sup>3</sup>	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Mathematics <sup>8</sup>	3
—	SSC Req Fine Arts <sup>4</sup>	3	—	SSC Req Speech <sup>1</sup>	3
—	SC 1311 Introduction to Sociology	3	—	AN/SC 2331 Cultural Anthropology	3
—	ND 0101 Personal & Academic Development	0			
Total		15	Total		15
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 1314 Foundations of Reflection: God	3	—	SMC 2304 Foundation of Practice: Literature	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	SSC Req Literature <sup>5</sup>	3	—	SC 3306 Qualitative Research Methods	3
—	SC 3351 Social Psychology	3	—	Advanced Sociology Elective	3
Total		15	Total		15
Third Year Courses					
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SSC Req Theology <sup>7</sup>	3	—	SSC Req Science <sup>9</sup>	3
—	SC 4383 Sociological Research	3	—	SC 4384 Sociological Theory	3
—	SC 3381 Introductory Statistics	3	—	SC 3320 Social Stratification	3
—	Elective	3	—	Elective	3
Total		15	Total		15
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	Advanced Sociology Elective	3
—	Advanced Sociology Elective	3	—	Elective	3
—	Advanced Sociology Elective	3	—	Elective	3
—	Advanced Sociology Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
Total		15	Total		15

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year: Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied: Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# SOCIOLOGY

St. Mary's University  
BA in Sociology (SC) Degree Plan - 2010  
120 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## **St. Mary's University Core (30 Hours)**

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Sociology Major Courses (36 hours)**

__ AN/SC 2331 – Cultural Anthropology	3
__ SC 1311 – Introduction to Sociology	3
__ SC 3306 – Qualitative Research Methods	3
__ SC 3320 – Social Stratification	3
__ SC 3351 – Social Psychology	3
__ SC 3381 – Introductory Statistics	3
__ SC 4383 – Sociological Research	3
__ SC 4384 – Sociological Theory	3
__ Advanced Sociology Electives	12

## **Electives (24 hours)**

__ Electives - An elective can be any course taken from any discipline.	24
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# SOCIOLOGY

## Department Courses and Descriptions

### **Introductory Sociology (3)**

SC 1311

An introduction to the scope and methods of sociology, emphasizing the concepts of social structure, organization, institution, culture and socialization, and including analyses of primary and secondary groups, sex roles, social control, stratification, minorities, collective behavior, and population dynamics. Prerequisite for all courses in the Criminology program.

### **Cultural Anthropology (3)**

SC 2331

An examination of the unity and diversity of cultural patterns in both simple and complex societies, including consideration of their political, intellectual, technical, aesthetic, and other social institutions in cross-cultural perspective.

### **Introduction to Archaeology (3)**

SC 2332

Introduction to scientific study of material remains (fossil relics, artifacts, monuments, tools, pottery, graves, buildings, etc.) of past human life and activities. How archaeologists retrieve, process, analyze, interpret surviving prehistoric materials. Insights into cultural values, symbols, norms, customs, traditions, etc.

### **Special Topics in Sociology (3)**

SC 3300

Topics will vary from semester to semester. May be retaken for additional credit when a different topic is offered.

### **North American Indians (3)**

SC 3301

Survey of Indians from the time of European contact through the present, emphasizing the situation of contemporary Native Americans.

### **Interviewing Techniques (3)**

SC 3305

### **Qualitative Research Methods (3)**

SC 3306

An introduction to the methods used to conduct qualitative research in natural social settings. An examination of the methods of ethnography, participant observation/non-participant observation, focus group, interview, and use of documentary sources will be included. Students may have the opportunity to engage in hands-on research. Additional topics include data coding, data analysis, and research ethics. Prerequisite: Junior standing and have completed nine hours of psychology or sociology related courses.

### **Sociology of Religion (3)**

SC 3308

# SOCIOLOGY

An introduction to basic issues in the sociology of religion, including alternative definitions of religion, the relationship of religion to economic, political and other social institutions, and the influence of religion on personal development, social order, conflict, and change. Religious institutions are viewed in historical and cross-cultural perspective.

## **Medical Anthropology (3)**

SC 3309

This course examines a variety of issues related to health, illness, and health care from an anthropological perspective. It explores how people in various cultures, both Western and non-Western deal with illness, disease, birth, death, curing and maintaining health.

## **Sociology of Sex Roles (3)**

SC 3310

An examination of the process of learning male and female roles. Topics include sexual identity, gender stereotypes, cross-cultural differences in gender roles and socialization, and changes in these roles in contemporary society.

## **Language and Culture (3)**

SC 3312

Examines the dynamics between language and culture in cross-cultural perspective. It explores the functions and use of language in society, the symbolic nature of language, theories regarding the evolution of human language, linguistic change, and how humans use language in social contexts.

## **Future Societies (3)**

SC 3315

An introduction to social forecasting and the sociology of the future. This course explores a range of alternative possibilities for the future of human societies, including both optimistic and pessimistic scenarios. Topics include the impact of technology on social relations, the future of major social institutions, and prospects for the solution of global problems.

## **Social Stratification (3)**

SC 3320

An analysis of social stratification utilizing social class as the unit of study. The course will focus on the structure of social classes in the U.S. as a major factor influencing individual and group life chances with regards to education, crime, health, and disease, world views and life styles.

## **Social Issues (3)**

SC 3321

Current discussions of contemporary social problems, including issues related to family and sexuality, health and substance abuse, education, poverty, prejudice and discrimination, population and environment, war and peace.

## **Juvenile Delinquency (3)**

SC 3324

An examination of juvenile delinquency in the U.S.: its nature, extent, causes, effects, prevention and rehabilitation. Sociological approaches to delinquency are emphasized, but psychological and legal

# SOCIOLOGY

approaches are also considered.

## **Criminology (3)**

SC 3325

An overview of the study of crime and the development of criminology. The nature, extent, causes, effects, rehabilitation and prevention of crime are examined from a sociological perspective. Psychological, legal, and philosophical approaches to crime are also considered.

## **Social Organization & Social Systems (3)**

SC 3342

An analysis of human behavior in organizations viewed as social systems. Topics include formal and informal structures, corporate cultures, organizational goals and problems, communication, interpersonal relations, adaptation, and change.

## **The Family (3)**

SC 3343

A study of the family as an institution and social system, including discussions of dating and mate selection, premarital and extramarital sex, birth control, abortion, illegitimacy, family planning, spousal relationships, interracial and interfaith marriages, socialization, social control, and change.

## **Group Dynamics (3)**

SC 3352

An analysis of the structure, functions and processes of small groups from a social-psychological perspective. Practical applications are explored for education, counseling, social work, business, and law.

## **Public Opinion and Propaganda (3)**

SC 3353

An examination of the nature, extent, and purposes of propaganda and of other social and psychological influences on public opinion. Topics include techniques of persuasion and the role of mass media and advertising in shaping public attitudes.

## **Internship in Sociology (3)**

SC 3355

Experiential education related to the theoretical and research topics studied in sociology. The experience consists of pre-professional work in social agencies, community programs, and other appropriate settings approved by the department. Junior/Senior status and at least 9 hours of upper-division sociology are prerequisites. Involves written sociological analysis. 3 to 6 semester hours of credit, with a maximum of 3 hours per semester.

## **Urban Sociology (3)**

SC 3361

An analysis of cities, their historical development and social organization. Topics include urbanization in developed and developing societies, urban stratification and lifestyles, and urban, metropolitan and regional planning.

## **Demography and Ecology (3)**

# SOCIOLOGY

SC 3362

The demographic study of human populations, including fertility, mortality, migration, age, sex, class composition. The ecological study of relations between human societies and their environments. Analysis of environmental problems and proposed solutions.

## **Minority Relations (3)**

SC 3371

A study of ethnic, religious and racial relations in the U.S. and other countries. Topics include power relationships, prejudice, discrimination, ethnic stratification, migration, assimilation and pluralism. Minorities to be considered include Blacks, Mexican-Americans and Native Americans.

## **Introductory Statistics (3)**

SC 3381

An introduction to descriptive and inferential statistics designed for the student of behavioral sciences. (same as AN, SE 3381)

## **Social Gerontology (3)**

SC 4300

A study of the aging process, with emphasis on its social, cultural and psychological aspects. Topics include the effects of aging on personality, intelligence, sexuality and maturity; family relationships; the demography of aging; and the relevance of gerontology theory and research for social policy.

## **Death and Dying (3)**

SC 4305

A holistic treatment of the dying person and his/her environment. Topics include cross-cultural differences in grief and mourning behaviors, psychological process of the terminally ill, funeral practices, hospice alternatives, and ethical problems related to the medical extension of life.

## **Sociological Research (3)**

SC 4383

An introduction to the history and methods of sociological research. Topics include the logic of scientific research, observation, questionnaires, interviews, content analysis, experiments, descriptive statistics, sampling, computerized data analysis and presentation. Students conduct actual research project.

## **Sociological Theory (3)**

SC 4384

An overview of major European and American social theorists and their influence on current sociological research and applications.

# SPANISH

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Languages

## Department Chair

Eva Bueno, Ph.D. [ebueno@stmarytx.edu](mailto:ebueno@stmarytx.edu)

## Description of Program/Major

The Spanish Language Program at St. Mary's University is one of the oldest at the University. Its roots come from the international education character of the Marianist Order, which has schools and universities not only throughout the United States, but in Latin America, Europe, Africa and Asia. The Department offers the Bachelor of Arts Degree in Spanish with or without Texas State Teaching Certification.

### International Experience

St. Mary's University has a spring semester at the Universidad de Alcala de Henares outside of Madrid, Spain. Part of the program was designed to give prospective teachers a cultural experience. All Teacher Certification students are encouraged to participate in the Spain Semester abroad.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3



# SPANISH

SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# SPANISH

St. Mary's University  
BA in Spanish (SP) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13### "Reflection" courses must be completed before registering for SMC23### "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1311 Foundations of Reflection: Self	3	—	SSC Req Foreign Language <sup>6</sup> (SP 2312 Second	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	Year Spanish II or Adv SP)	3
—	SSC Req Fine Arts <sup>4</sup>	3	—	SSC Req Mathematics <sup>8</sup>	3
—	SSC Req Foreign Language <sup>6</sup> (SP 2311 Second	3	—	SSC Req Science <sup>9</sup>	3
—	Year Spanish I or Adv SP)		—	Elective	3
—	ND 0101 Personal & Academic Development	0			
	Total	15		Total	15
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 1314 Foundations of Reflection: God	3	—	SMC 2304 Foundation of Practice: Literature	3
—	SP 3311/SP 3312/SP 3325	3	—	SSC Req Speech <sup>1</sup>	3
—	SP 3331/SP 3332/SP 3382	3	—	SP 3341/SP 3342	3
—	Elective	3	—	Elective	3
	Total	15		Total	15
Third Year Courses					
—	SMC 2303 Foundation of Practice: Fine Arts &	3	—	SMC 2302 Foundations of Practice: Civic	3
—	Creative Process	3	—	Engagement & Social Action	3
—	SSC Req History <sup>3</sup>	3	—	SP 3322/SP 3343/SP 4341	3
—	SP 3353/SP 3381/SP 3361	3	—	Elective	3
—	SP Adv Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
	Total	15		Total	15
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for	3	—	SSC Req Literature <sup>5</sup>	3
—	Community and Civilization	3	—	SP 4361/SP 5321/SP 3371	3
—	SSC Req Theology <sup>7</sup>	3	—	Elective	3
—	SP 4331/SP 4351/SP Adv Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
—	Elective	3			
	Total	15		Total	15

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours of Second Year level: SP 2311, 2312.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# SPANISH

St. Mary's University  
BA in Spanish (SP) Degree Plan - 2010  
120 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## **St. Mary's University Core (30 Hours)**

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages – SP 2311, 2312	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Spanish Major Courses (24 hours)**

__ SP 3311 – Culture & Civilization of Spain; or SP 3312 – Culture & Civilization of Latin America; or SP 3325 – Mexican-American/Chicano Culture	3
__ SP 3331 – Survey of Spanish Literature I; or SP 3332 – Survey of Spanish Literature II; or SP 3382 – Topics in Spanish	3
__ SP 3341 – Survey of Spanish-American Literature I; or SP 3342 – Survey of Spanish-American Literature II	3
__ SP 3353 – Spanish for Business; or SP 3381 – Spanish Language for the Professions; or SP 3361 – Advanced Communication Skills in Spanish; or advanced SP	3
__ SP 3322 – Culture and Civilization of Mexico; or SP 3343 – Mexican-American/Chicano Literature; or SP 4341 – Main Currents of Spanish Poetry	3
__ SP 4331 – Spanish Short Story; or SP 4351 – Spanish-American Prose Fiction; or advanced SP	3
__ SP 4361 – Golden Age Drama; or SP 5321 – Golden Age Prose Fiction; or SP 3371 – Spanish Phonetics and Oral Discourse	3
__ SP advanced elective	3

## **Electives (36 hours)**

__ Electives - An elective can be any course taken from any discipline.	36
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be passing the iCrit exam with a score of 250 or higher.

# SPANISH

St. Mary's University

BA in Spanish (SP) with teacher Certification Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisors on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	SMC 1311 Foundations of Reflection: Self	3	___	SSC Req Foreign Language <sup>6</sup> (SP 2312 Second	3
___	SSC Req Composition & Rhetoric <sup>2</sup>	3	___	Year Spanish II or Adv SP)	3
___	SSC Req Fine Arts <sup>4</sup>	3	___	SSC Req Mathematics <sup>8</sup>	3
___	SSC Req Foreign Language <sup>6</sup> (SP 2311 Second	3	___	SSC Req Science <sup>9</sup>	3
___	Year Spanish I or Adv SP)		___	Elective (See ED Chair for course selection)	3
___	ND 0101 Personal & Academic Development	0			
	Total	15		Total	15
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	SMC 1314 Foundations of Reflection: God	3	___	SMC 2304 Foundation of Practice: Literature	3
___	SP 3311/SP 3312/SP 3325	3	___	SSC Req Speech <sup>1</sup>	3
___	SP 3331/SP 3332/SP 3382	3	___	SP 3341/SP 3342/SP Adv Elective	3
___	Elective (See ED Chair for course selection)	3	___	Elective (See ED Chair for course selection)	3
	Total	15		Total	15
Third Year Courses					
___	SMC 2303 Foundation of Practice: Fine Arts &		___	SMC 2302 Foundations of Practice: Civic	
___	Creative Process	3	___	Engagement & Social Action	3
___	SSC Req History <sup>3</sup>	3	___	SP 4331/SP 4351/SP Adv Elective	3
___	SP 3353/SP 3381/SP Adv Elective	3	___	ED 3361 Adolescent development in the	
___	SP 3371/SP Adv Elective	3	___	School Setting	3
___	ED3301 The American School	3	___	Elective (See ED Chair for course selection)	3
___	Elective (See ED Chair for course selection)		___	SSC Req Literature <sup>5</sup>	3
	Total	15		Total	15
Fourth Year Courses					
___	SSC Req Theology <sup>7</sup>	3	___	SMC 4301 Capstone Seminar: Prospects for	
___	SP 3322/SP 3343/SP 4341	3	___	Community and Civilization	3
___	SP 4361/SP 5321/SP Adv Elective	3	___	ED4388 Professional Development Seminar –	
___	ED3362 Secondary Teaching Methods	3	___	Secondary	3
___	ED3350 Teaching Reading in the Content Area	3	___	ED4689 Student Teaching in the Secondary	
	Total	15		School	6
				Total	12

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours of Second Year level: SP 2311, 2312.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# SPANISH

St. Mary's University  
BA in Spanish (SP) Degree Plan - 2010  
120 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## St. Mary's University Core (30 Hours)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## School of Humanities and Social Sciences School Specific Core (30 Hours)

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages – SP 2311, 2312	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## Spanish Major Courses (24 hours)

__ SP 3311 – Culture & Civilization of Spain; or SP 3312 – Culture & Civilization of Latin America; or SP 3325 – Mexican-American/Chicano Culture	3
__ SP 3331 – Survey of Spanish Literature I; or SP 3332 – Survey of Spanish Literature II; or SP 3382 – Topics in Spanish	3
__ SP 3341 – Survey of Spanish-American Literature I; or SP 3342 – Survey of Spanish-American Literature II; or advanced SP	3
__ SP 3353 – Spanish for Business; or SP 3381 – Spanish Language for the Professions; or SP 3361 – Advanced Communication Skills in Spanish; or advanced SP	3
__ SP 3371 – Spanish Phonetics and Oral Discourse or advanced SP	3
__ SP 4331 – Spanish Short Story; or SP 4351 – Spanish-American Prose Fiction; or advanced SP	3
__ SP 3322 – Culture and Civilization of Mexico; or SP 3343 – Mexican-American/Chicano Literature;	3
__ SP 4361 – Golden Age Drama; or SP 5321 – Golden Age Prose Fiction; or advanced SP	3

## Teacher Certification Education Courses (21 hours)

__ ED 3301 – The American School	3
__ ED 3361 – Adolescent development in the School Setting	3
__ ED 3362 – Secondary Teaching Methods	3
__ ED 3350 – Teaching Reading in the Content Area	3
__ ED 4388 – Professional Development Seminar –Secondary	3
__ ED 4689 – Student Teaching in the Secondary School	6

## Electives (15 hours)

__ Elective (See ED Chair for course selection)	15
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## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be passing the iCrit exam with a score of 250 or higher.

# SPANISH

## Department Courses and Descriptions

### **Intro to Spanish I (3)**

SP 1311

Essentials of Spanish. An introduction to the four phases of language learning: understanding, reading, speaking, and writing Spanish, and an introduction to Spanish and Spanish American culture. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Enrollment restricted to students with no prior experience in Spanish. Students who have been introduced to Spanish at home or in high school should take SP 2311 and 2312. SP1311 is a prerequisite for SP1312. Permission of the Department Chair is required for entry into the Introductory course.

### **Intro to Spanish II (3)**

SP 1312

Essentials of Spanish. An introduction to the four phases of language learning: understanding, reading, speaking, and writing Spanish, and an introduction to Spanish and Spanish American culture. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. Enrollment restricted to students with no prior experience in Spanish. Students who have been introduced to Spanish at home or in high school should take SP 2311 and 2312. SP1311 is a prerequisite for SP1312. Permission of the Department Chair is required for entry into the Introductory course.

### **Second Year Spanish I (3)**

SP 2311

Spanish grammar reviewed and applied to practice in composition. Course includes practice in comprehension of spoken Spanish and guided speaking, reading, and writing activities leading to self-expression in the Spanish language. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. SP 2311 or equivalent obtained through CLEP or Advanced Placement Exams or experience is a prerequisite for SP 2312.

### **Second Year Spanish II (3)**

SP 2312

Spanish grammar reviewed and applied to practice in composition. Course includes practice in comprehension of spoken Spanish and guided speaking, reading, and writing activities leading to self-expression in the Spanish language. The course consists of two semesters. Each semester consists of two hours lecture and one hour of audio/video/writing laboratory. A laboratory fee is charged. SP 2311 or equivalent obtained through CLEP or Advanced Placement Exams or experience is a prerequisite for SP 2312.

### **Culture & Civilization of Spain (3)**

SP 3311

A survey of the historical, social, political, artistic, and cultural institutions of Spain, designed to provide a better understanding of the country and its people. Taught principally in Spanish. Prerequisite: SP 2312 or equivalent.

# SPANISH

## **Culture & Civilization of Latin (3)**

SP 3312

A survey of the historical, social, political, artistic, and cultural institutions of Spanish-speaking Latin American countries, designed to provide a better understanding of the countries and their people. Taught principally in Spanish. Prerequisite: SP 2312 or equivalent.

## **Culture & Civilization of Mexico (3)**

SP 3322

A survey of the cultural, historical, political, and geographical aspects of Mexico. Designed to provide the background for a better understanding of the people of Mexico. Major writers and thinkers. Cultural and artistic achievements.

## **Mexican-American/Chicano Culture (3)**

SP 3325

An interdisciplinary survey of Mexican-American/Chicano culture. Topics include history, literature, art, folklore, oral tradition, music, and politics, as well as "everyday" cultural manifestations.

## **Southern Cone Spanish Language & Culture (3)**

SP 3329

This course is designed to prepare participants in the Southern Cone Studies program for their semester in Chile. Since countries in the region have a shared history and culture and a tradition of involvement in diplomatic and commercial engagements throughout the ages, a comparison and contrast approach to the region makes this course a must for all participants in the program. Students will review their language skills in preparation for the "in-country" phase of the program. Enrollment is limited to participants in the Southern Cone Studies Program.

## **Survey of Spanish Literature I: Origins to 1700 (3)**

SP 3331

Principal movements and typical productions from the beginning of Spanish Literature to the end of the Golden Age. Prerequisite: SP 2312 or equivalent.

## **Survey of Spanish Literature II: 1700 - Present (3)**

SP 3332

Principal movements in Spanish Literature and typical productions from the Neo-Classical period through the present time. Prerequisite: SP 2312 or equivalent.

## **Survey of Spanish-American Literature I (3)**

SP 3341

A survey of the literary movements, major writers and their main works from the times of Discovery and Conquest to Romanticism and Independence. Lectures, readings and literary analysis.

## **Survey of Spanish-American Literature II (3)**

SP 3342

Survey of the literary trends, major writers and their works, including Modernism, the XX Century up to the contemporary authors. Lectures, reading, and literary analysis.

# SPANISH

## **Mexican-American/Chicano Literature (3)**

SP 3343

Survey of the literary and cultural contributions of contemporary Mexican-American/Chicano writers. Representative works in all genres. Conducted primarily in Spanish. SP 2312 or equivalent is a prerequisite.

## **Hispanic/Latino Literature in the United States (3)**

SP 3345

Survey of the literary and cultural contributions of contemporary Chicano, Puerto Rican, Cuban, South and Central American writers in the United States. Conducted primarily in Spanish. Prerequisite: SP 2312 or equivalent.

## **Advanced Communication Skills in Spanish (3)**

SP 3361

Intensive review of Spanish grammar. Reading, analysis, and discussion of literary selections, current events, topics of interest, and key problems and issues. Original composition and oral delivery.

## **Spanish Phonetics & Oral Discourse (3)**

SP 3371

The principles of Spanish phonetics and pronunciation will be studied and applied to a wide variety of oral discourse such as speeches, poetry recitation, and news briefs. Taught principally in Spanish. Prerequisite: SP 2312 or equivalent.

## **Spanish Language for the Profession (3)**

SP 3381

Review of Grammar. Incorporates the language and vocabulary relating to a variety of professions such as medicine, business, law, education, and sociology to enable the student anticipating a career in these professions to convey his/her skills in Spanish. Includes the principles of writing business letters, summaries, and reports. Prerequisite: SP 2311 or equivalent. To be taken instead of SP 3353.

## **Topics in Spanish (3)**

SP 3382

Study of any one of the broad range of topics in contemporary Spanish language, to include issues of the day. Conducted entirely in Spanish. May be taken twice if topic is different.

## **Spanish Short Story (3)**

SP 4331

A reading and analysis of Spanish and Spanish-American Short Stories of the XIX and XX centuries.

## **Main Currents of Spanish Poetry (3)**

SP 4341

A historical survey of Spanish poetry, together with a study of prominent literary movements. Reading and analysis of the masterpieces of Spanish poetry.

## **Spanish-American Prose Fiction (3)**

SP 4351



# SPANISH

A study of the history and development of the novel in Latin America. Major trends of the novel according to the literary movements. Reading and analysis of great novels in the different Latin American countries.

## **Golden Age Drama (3)**

SP 4361

A survey of drama from its origin through the Neo-Classical period. Readings and analysis of representative works.

## **Modern Spanish Drama (3)**

SP 4362

Development of the contemporary theater in Spain. Different types of modern drama. Reading and analysis of representative plays with respect to the literary movements in the XIX and XX centuries. Emphasis on the contemporary theater.

## **Principles & Issues of Second Language (3)**

SP 4382

The course will include a study of the nature of language, theories of 1st and 2nd language acquisition and learning, communicative strategies, language teaching methodologies and issues related to teaching foreign languages. This course should, ideally, be taken just prior to taking the teacher preparation practicum. Prerequisite: SP2312 or equivalent. (Same as FR 4382)

## **Golden Age Prose Fiction (3)**

SP 5321

Study of the Golden Age prose fiction in Spain. Pastoral, Moorish, and picaresque novels. Special emphasis on Don Quijote.

# SPEECH COMMUNICATION

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

English

## Department Chair

Rose Marie Cutting, Ph.D. [rcutting@stmarytx.edu](mailto:rcutting@stmarytx.edu)

## Description of Program/Major

Speech communication helps students build a foundation of oral communication skills. More than just giving speeches, the major includes interpersonal, group, organizational and intercultural communication. The department also offers communication courses in specialized subjects including law, health, business, gender, mass communication and management.

Speech communication at St. Mary's University provides a practical study of the principles and mechanisms of human interaction. Courses prompt students to ask: How can the student be most persuasive? How can the student become an effective and respected leader? How can the student understand, avoid and, when necessary, resolve conflict?

Graduates of the program succeed in becoming more than just persuasive leaders and successful peacemakers. They are ethical and productive members of society with extraordinary careers. The speech communication program grounds its challenging course of study in the Marianist traditions of integrity and community service.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301      Foundations of Civilization

3

# SPEECH COMMUNICATION

SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# SPEECH COMMUNICATION

St. Mary's University

BA in Speech Communications (SE) Degree Plan

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

**All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.**

First Year Courses					
Fall			Spring		
___	SMC 1301 Foundations of Civilization	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	SMC 1311 Foundations of Reflection: Self	3	___	SSC Req Composition & Rhetoric <sup>2</sup>	3
___	SSC Req Foreign Language <sup>6</sup>	3	___	SSC Req Foreign Language <sup>6</sup>	3
___	SSC Req Speech <sup>1</sup> (SE 1341 Advised)	3	___	SE 1351 Intro to Speech Communication	3
___	Elective	3	___	Elective	3
___	ND 0101 Personal & Academic Development	0	___		
Total		15	Total		15
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	SMC 1314 Foundations of Reflection: God	3	___	SMC 2304 Foundation of Practice: Literature	3
___	SSC Req Mathematics <sup>8</sup>	3	___	SSC Req History <sup>3</sup>	3
___	SE 2321 Advanced Public Speaking	3	___	SE 2333 Business & Professional Communication	3
___	SE major course*	3	___	SE major course*	3
Total		15	Total		15
Third Year Courses					
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
___	SSC Req Science <sup>9</sup>	3	___	SSC Req Theology <sup>7</sup>	3
___	SSC Req Fine Arts <sup>4</sup>	3	___	SE major course*	3
___	SE major course*	3	___	Elective	3
___	Elective	3	___	Elective	3
Total		15	Total		15
Fourth Year Courses					
___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	___	SSC Literature <sup>5</sup>	3
___	SE major course*	3	___	SE major course*	3
___	Elective	3	___	Elective	3
___	Elective	3	___	Elective	3
___	Elective	3	___	Elective	3
Total		15	Total		15

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341

<sup>2</sup>Students select from the following courses for Rhetoric & Composition **with a "C" or better**: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 33XX, HU 3300

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

\* Select six upper division SE major courses chosen from: SE 3311, SE 3321, SE 3325, SE 3331, SE 3333, SE 3335, SE 3341, SE 3351, SE 3353, SE 3361, SE 3365, SE 3381, SE 3385, SE 3391, SE 3395, SE 4391, SE 4691, SE 4341, SE 3451, SE 4365, or SE 5390.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# SPEECH COMMUNICATION

St. Mary's University  
BA in Speech Communications (SE) Degree Plan - 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (30 Hours)**

__ Speech – SE 1321 (for international students), SE 1341	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX, HU 3300	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 23XX	3

## **Speech Major Courses (27 hours)**

__ SE 1351 – Intro to Speech Communication	3
__ SE 2321 – Advanced Public Speaking	3
__ SE 2333 – Business and Professional Communication	3
__ Speech Major Courses (Select six upper division SE major courses chosen from: SE 3311, SE 3321, SE 3325, SE 3331, SE 3333, SE 3335, SE 3341, SE 3351, SE 3353, SE 3361, SE 3365, SE 3381, SE 3385, SE 3391, SE 3395, SE 4391, SE 4691, SE 4341, SE 3451, SE 4365, or SE 5390.)	18

## **Electives (33 hours)**

__ Electives - An elective can be any courses taken from any discipline.	33
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# SPEECH COMMUNICATION

## Department Courses and Descriptions

### **Voice and Diction (3)**

SE 1311

This course deals with the training of the speaking voice as it is explored through breath control and execution, integration of facial and body posture, and the synergism of consonant and vowel action into a resonating voice. In mastering the basic applications in this course, one may engage in vital vocal communication and expression of one's personal culture.

### **Oral Communication for International Students (3)**

SE 1321

Introduction to basic skills of oral communication for EFL students. Includes basic training in interpersonal communication, basic public speaking, group discussion and problem solving, parliamentary procedure, interviewing and organizational communication. This course satisfies the Core Curriculum Speech Requirement for EFL students only.

### **Fundamentals of Oral Communication (3)**

SE 1341

Introduction to basic skills of oral communication. Includes training in interpersonal communication, basic public speaking, group discussion & problem solving, parliamentary procedure, interviewing, and organizational communication. Fulfills the Core requirement for Speech and is a recommended foundation for many of the advanced communication skills courses.

### **Introduction to Speech Communication (3)**

SE 1351

Introduction to the basic language, concepts, and theory of speech communication. Provides a general foundation for the whole departmental field. Recommended foundation for many advanced communication theory courses.

### **Advanced Public Speaking (3)**

SE 2321

An advanced introduction to the art of public presentation. This course places a heavy emphasis on performance skill development. Recommended: SE 1341.

### **Business and Professional Communication (3)**

SE 2333

A practical investigation of the principles of speech communication in the business and professional environment. Includes training in interpersonal communication, public speaking, group and organizational communication, creativity and problem solving, parliamentary procedure and interviewing. Special emphasis on leadership skills. Includes classroom exercises. Recommended: SE 1341.

### **Forensics Participation (1)**

SE 3161

Practicum in forensics competition. This one-credit course may be repeated for up to 3 hours credit. Requires consent of Director of Forensics.

# SPEECH COMMUNICATION

## **Interviewing (3)**

SE 3311

A comprehensive introduction to the principles, strategies, and practical techniques of interviewing from a communication perspective. The process of interviewing will be examined from the perspectives of both interviewer and subject and within a variety of contexts. The course will include a number of exercises to develop interviewing and interviewer skills. Recommended: SE 1341 & 1351.

## **Interpersonal Communication (3)**

SE 3321

A theoretical and pragmatic introduction to the dynamics of human interaction. This course will survey both basic and advanced theories, concepts, terminology, and subject areas of interpersonal communication. The course will also focus pragmatically on the performance skills necessary to apply these materials effectively. Recommended: SE 1351.

## **Managing People & Organization (3)**

SE 3325

An examination of modern approaches to management at both the micro and macro levels. The micro level of analysis emphasizes such topics as perception, motivation, and attitudes. The macro level of analysis emphasizes such topics as organizational design and structure, organizational culture, and decision-making. The dynamic interaction of these two levels includes topics such as leadership, groups, and job stress. Contemporary issues such as diversity, ethics, and globalization will also be emphasized.

## **Oral Interpretation (3)**

SE 3331

Study and analysis of prose, poetry, and dramatic literature for the purpose of developing the ability to coordinate voice and thought in both informal and formal interpretative reading. Recommended: SE 1341

## **Corporate Communications (3)**

SE 3333

Practice in recognizing audience and being sensitive to a variety of readers—including those who are resistant or even hostile—through a range of communication problems designed to approximate the real work world.

## **Advanced Business & Professional Communication (3)**

SE 3335

Advanced survey of the speech communication principles and skills necessary for success in the business and professional world. The course will emphasize practical research findings which will help students to communicate successfully in interpersonal, group, organizational, and public contexts. Recommended: SE 2333.

## **Group Communication & Conference Methods (3)**

SE 3341

A comprehensive introduction to the principles, strategies, and practical techniques of conference methods and group communication. The course includes a theoretical and pragmatic examination of group processes within a variety of business and professional contexts. Special emphasis on leadership, conflict resolution, problem solving, and group-oriented communication skills. Recommended: SE 1341

# SPEECH COMMUNICATION

& 1351.

## **Topics in Communication Theory (3)**

SE 3351

Survey and study of selected topics in the communication field, such as business and professional communication, nonverbal communication, gender communication, family communication, mass media, communication law, and media ethics. Recommended: SE 1351.

## **Survey of Mass Communication (3)**

SE 3353

An overview of mass communication theory. Includes a study of the historical development of mass media, global implications of mass communication, and the relationship between the mass media and modern society.

## **Gender Communication (3)**

SE 3361

This course focuses on the interactive relationship between gender and communication in society. Course content includes theories of gender communication, language, psychological development and culture. To be explored are the role of gender in creating, organizing, and sustaining social and communicative practices. The course will critically consider the functions and influences of gender communication at the personal, interpersonal, mass media, and cross-cultural levels. Students will learn to apply theory and research to their life experiences. Recommended: SE 1351.

## **Health Communication (3)**

SE 3365

The course will explore the theory and practice of communication in health care settings. It will draw upon relevant literature from anthropology, sociology, speech communication, linguistics, medicine, nursing, and related fields. The course will explore the interrelationships among culture, society, and experiences of health and illness. A wide range of current health care issues will be studied. Through this course, students will become better consumers of health care and may better prepare themselves for future roles in the health care profession. Recommended: SE 1351.

## **Introductory Statistics (3)**

SE 3381

An introduction to descriptive and inferential statistics designed for the student of any of the behavioral sciences.

## **Multivariate Statistics (3)**

SE 3385

A survey course of advanced statistical concepts and techniques, including sampling, hypothesis testing, analysis of variance, multiple regression analysis, multiple discriminant analysis, and factor analysis. Includes hands-on experience in the use of various statistical computer programs. (same PS3385)

## **Argumentation and Debate (3)**

SE 3391

A study of the fundamental principles of argumentation and debate. Special emphasis on the elements of



# SPEECH COMMUNICATION

analysis, research, organization, preparation, and delivery. Highly recommended for students interested in a career in business, law, or politics. Recommended: SE 1341.

## **Technologies of Communication (3)**

SE 3395

This course will critically explore new information technologies. A major focus will be the rapidly changing and increasingly technological context of human communication. Students examine multiple dimensions of the information revolution including computer networks and systems; computer-mediated interaction, questions of cyber identity and community formation; issues of gender, race, class, age, and equity in the context of information technology, and various ethical issues. Students also hone their computer skills in assessing and utilizing various information technologies. Recommended: SE 1351.

## **Intercultural Communication (3)**

SE 4321

Introduction to the foundations of intercultural communication theory. Special emphasis on the history, problems, and pragmatics of cross cultural theory and research. Recommended: SE 1351.

## **Organizational Communication (3)**

SE 4341

The study of communication practices and processes within organizations. The theory and practice of employee interactions are explored in a variety of contexts such as the work unit, supervisory relationships, group meetings, inter-group relations, corporate-wide communications, and external public relations. Effective communication strategies are introduced and discussed. Recommended: SE 1351.

## **Persuasion and Advocacy (3)**

SE 4351

This course is designed to be a pragmatic introduction to the theory and practice of persuasion across a variety of professional contexts. The course goals are for students to become more critical consumers of persuasive appeals and to also become more powerful and effective public advocates. This course is highly recommended for business and professional and pre-law students. Recommended: SE 1351.

## **Special Topics in Speech Communication (3)**

SE 4365

Innovative approach to selected topics in speech communication. Stress on the relationship of human communication theory to other fields of interest. Specific course description indicated each time the course is offered. Recommended: SE 1351.

## **Special Studies in Communication (3)**

SE 4391

Independent study or seminar. Consent of the program coordinator required. May be repeated for up to six hours of credit.

## **Career Seminar (3)**

SE 4395

This course focuses on three areas of career development: (1) life-planning, an exploration of talents, skills, education, career interests: (2) intensive careers research, study and practice of procedures used in

# SPEECH COMMUNICATION

career search: including (3) resumes, interviews, and letters of application. The course is writing intensive and has a strong emphasis on oral communication skills. Required of all SE majors, this course should be taken in the first semester of the senior year.

## **Special Studies in Communication (6)**

SE 4691

Independent study or seminar. Consent of the program coordinator required. May be repeated for up to six hours of credit.

## **Internship in Speech Communication (3)**

SE 5390

This course reinforces academic work by providing students with a range of opportunities for pre-professional workplace experience. Open to juniors and seniors only. Internships must follow general University guidelines and be approved by the Internship Coordinator.

# THEOLOGY

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Theology

## Department Chair

William Buhrman, Ph.D. [wbuhrman@stmarytx.edu](mailto:wbuhrman@stmarytx.edu)

## Description of Program/Major

The theological task calls students to engage in rigorous academic inquiry and practical service in society through consistent witness to, and practice of, the truth of theological discovery. Theology courses at St. Mary's University are designed to bring students to an understanding of the basic models, language and sources of the Catholic Christian tradition. The theology major will achieve the appropriate level of fluency to make a positive contribution to the theological enterprise.

Theology by its very nature is interdisciplinary and involves the ability to think critically about important issues. Theology is founded upon the assumption that everyone, by virtue of their human nature, deals with certain fundamental questions of meaning and existence. St. Mary's helps students examine anew the theological answers that have been given in the Judeo-Christian tradition. It is hoped that students come to possess a renewed awareness of the presence and urgency of these fundamental issues in their own lives and of the responses given by Catholic Christian thought.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3

# THEOLOGY

SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Humanities and Social Sciences School Specific Core (30 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Mathematics	MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
History	HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
Science	BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
Theology	Advanced Theology 33XX, HU 3303	3
Fine Arts	AR, DM, MU	3
Literature	EN 23XX	3

## Four Year Degree Plan

# THEOLOGY

St. Mary's University  
BA in Theology (TH) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses.  
"Reflection" courses can be taken in any order followed by "Practice" courses in any order.

First Year Courses					
Fall		Hr	Spring		Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	SMC 1314 Foundations of Reflection: God	3	—	SSC Req Literature <sup>5</sup>	3
—	SSC Req Composition & Rhetoric <sup>2</sup>	3	—	SSC Req Mathematics <sup>8</sup>	3
—	SSC Req History <sup>3</sup>	3	—	SSC Req Speech <sup>1</sup>	3
—	Elective	3	—	TH 3301 Major Old Testament Themes	3
—	ND 0101 Personal & Academic Development	0			
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Second Year Courses					
—	SMC 1311 Foundations of Reflection: Self	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2304 Foundation of Practice: Literature	3
—	SSC Req Foreign Language <sup>6</sup>	3	—	SSC Req Foreign Language <sup>6</sup>	3
—	TH 3302 Major New Testament Themes	3	—	TH 3332 Catholic Church & Christian Com	3
—	TH 3330 Christ and the Christian God	3	—	TH 3350 Contemporary Catholic Moral Life	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Third Year Courses					
—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	SSC Req Science <sup>9</sup>	3	—	SSC Req Fine Arts <sup>4</sup>	3
—	TH 3382 Catholic Experience in the US	3	—	TH 3352 Catholic Social Ethics	3
—	Theology Elective	3	—	TH 41XX Selected Topics Seminar	1
—	Elective	3	—	Theology Elective	3
—	Elective	3	—	Elective	3
	<b>Total</b>	<b>18</b>		<b>Total</b>	<b>16</b>
Fourth Year Courses					
—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	—	SSC Req Theology <sup>7</sup>	3
—	TH 3380 Personal Religious Transformation	3	—	TH 3356 Marriage & Family Today	3
—	Elective	3	—	TH 41XX Selected Topics Seminar	1
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
—	Elective	3	—	Elective	3
	<b>Total</b>	<b>18</b>		<b>Total</b>	<b>16</b>

Total Hours 128

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition with a "C" or better: EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for History: HS 1301, HS 1302, HS 1303, HS 1351, HS 1351, HS 3312 (or any HS courses pending AC approval)

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: Advanced Theology not used in the major.

<sup>8</sup>Students select from the following courses for Mathematics: MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412

<sup>9</sup>Students select from the following courses for Science: BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

# THEOLOGY

St. Mary's University  
BA in Theology (TH) Degree Plan - 2010  
128 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## **St. Mary's University Core (30 Hours)**

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Humanities and Social Sciences School Specific Core (33 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Mathematics – MT 1301, MT 1302, MT 1303, MT 1305, MT 1306, MT 1411, MT 2412	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ History – HS 1301, HS 1302, HS 1303, HS 1351, HS 1352, HS 3312 (or any HS courses pending AC approval)	3
__ Science – BL 1301, BL 1302, BL 3311, BL 3312, CH 1303, CH 1304, CH 1401, CH 1402, EG 2300, ES 1300, ES 1303, ES 1304, ES 1373, PY 1300, PY 1310, PY 1401, PY 1402	3
__ Theology – Advanced Theology 33XX not used in the major requirements.	3
__ Fine Arts – AR, DM, MU	3
__ Literature – EN 2321, 2322, 2353, 2354, 2355, 2356	6

## **Theology Major Courses (35 hours)**

__ TH 3301 – Major Old Testament Themes	3
__ TH 3302 – Major New Testament Themes	3
__ TH 3330 – Christ and the Christian God	3
__ TH 3332 – Catholic Church & Christian Community	3
__ TH 3350 – Contemporary Catholic Moral Life	3
__ TH 3352 – Catholic Social Ethics	3
__ TH 3356 – Marriage & Family Today	3
__ TH 3380 – Personal Religious Transformation	3
__ TH 3382 – Catholic Experience in the US	3
__ TH 41XX – Selected Topics Seminar	1
__ TH 41XX – Selected Topics Seminar	1
__ Theology Elective	3
__ Theology Elective	3

## **Electives (30 hours)**

__ Electives - An elective can be any course taken from any discipline.	30
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by passing the iCrit exam with a score of 250 or higher.

## Department Courses and Descriptions

### **Church and Ministry (2)**

TH 2240

The course is designed to provide students with an opportunity to gain theological insights and field experience in various ministerial settings. Topics and ministerial settings for this Pass/No Pass course must be approved by the Department's undergraduate adviser.

### **Theol Found:Rel Exp,Trad&Commt (3)**

TH 2301

From the perspective of the Roman Catholic tradition, this introductory level course proposes to explore how religious meaning characteristically (1) is preserved in the Bible, (2) is thematized by theology and ritual, (3) provides the basic categories for pursuing answers to ultimate questions, and (4) draws members of each generation into ethical and religious commitment. The course is intended to provide a functional frame work for appropriating one's own context of ultimate meaning. (Prerequisite: PL 1310)

### **Church and Ministry (3)**

TH 2340

The course is designed to provide students with an opportunity to gain theological insights and field experience in various ministerial settings. Topics and ministerial settings for this Pass/No Pass course must be approved by the Department's undergraduate adviser.

### **Topics in Theology (3)**

TH 2399

### **Major Old Testament Themes (3)**

TH 3301

A reading of selected Old Testament texts in their historical context, designed to introduce students to fundamental themes that run through the literature of the Old Testament period, or a reading of selected books of the Old Testament. The themes or books will be selected by the professor. The aim is to lead students to a broader understanding of human concerns and ultimate meaning, to religious self-transcendence, to a deeper relationship with God, and to a sense of responsibility for the world, gained through in-depth studies of particular sections of the Sacred Scriptures. The course may be repeated.

### **Major New Testament Themes (3)**

TH 3302

A reading of selected New Testament texts in their historical context, designed to introduce students to fundamental themes that run through the literature of the New Testament period, or a reading of selected books of the New Testament. The themes or books will be selected by the professor. The aim is to lead students to a broader understanding of human concerns and ultimate meaning, to religious self-transcendence, to a deeper relationship with God, and to a sense of responsibility for the world, gained through in-depth studies of particular sections of the Sacred Scriptures. The course may be repeated.

### **Christ and the Christian God (3)**

TH 3330

# THEOLOGY

Place and mission of Christ in the Church and the religious and cultural world of today. Principal doctrines about Christ. Special questions: Christ's divinity, resurrection, virginal origin, knowledge, and freedom. The Triune God as revealed through Christ and as presented in the Christian theology. Contemporary Christian approaches to God. God's life shared with believers; contemporary notions of grace. Atheism.

## **The Catholic Church & the Christian Community (3)**

TH 3332

The nature and role of religious institution. Vatican II's notion of the Church, with a background leading to this development. Different meanings of "Church." The Catholic Church, other churches and ecclesial communities: their unity in shared elements of Christian life, faith and worship. Church and salvation. Co-responsibility, ministry, and authority in the Church. The Church's teaching function and the responses of believers. The Church's presence and service in the world today. The American Catholic Church: its history, its interaction with other American Churches, and its position in the modern Catholic world.

## **Sacraments, Rites, and Religious Symbols (3)**

TH 3334

The meaning and function of religious symbols and rites in a religious community; notion of sacrament, its relation to Church. Contemporary theology of the seven sacraments, stressing their role in the Christian's life within the Church. The evolution of sacramental life through the study of pre-conciliar theology and post-conciliar developments. Basic principles for Christian liturgy from Vatican II, and the newrites for the celebration of the sacraments

## **Contemporary Catholic Moral Life (3)**

TH 3350

A study of moral principles as seen in the light of the Catholic tradition. Analysis of the meaning of psychological freedom, the human act, natural law, conscience, civil law and morality, grace and sin, as well as an examination of various moral methodologies. Discussion of selected specific and contemporary moral issues.

## **Catholic Social Ethics (3)**

TH 3352

This course addresses the continuity and the development of Catholic thought and practice concerning social issues. It seeks to answer such questions as: Should Christianity be a force for social, economic, and political change? How might Christian values permeate and transform the neighborhood, the boardroom, the city the nation, the international community? What is the role of the Church in the world? Issues as economic justice, racism, church-state relations, human rights, and peacemaking will be treated, placed within an historical perspective. Special attention will be given to the tradition of Catholic Social Teaching (found especially in papal documents, the decrees of Vatican II, and pronouncements of the U.S. hierarchy).

## **Health Care & Medical Ethics (3)**

TH 3353

This course will begin with a consideration of ethics and ethical method in light of the interaction of reason and an ecumenical religious perspective. Such an approach will enable a study of what constitutes the appropriate care for the human person, particularly in the realm of medicine and health care. In



# THEOLOGY

addition to such fundamental bioethical issues, this course will also examine relevant contemporary issues in medicine and the life sciences at both the individual and social level.

## **Marriage and Family Today (3)**

TH 3356

The nature of marriage as understood by the Catholic Church; the role of marriage and the family as the foundation of civil society; Natural Family Planning; and the specific social and personal challenges that married couples meet such as monogamy, fidelity, abstinence, finances, the extended family, and emotional differences.

## **Personal Religious Transformation (3)**

TH 3380

Nature of religious experience and the holy. Definition of the meaning of spiritual life. Presentation of how spiritual life has been imaged by Christians in the past. Aids for a spiritual life: dialoguing with scripture and tradition (seen in lives and teachings of outstanding Christians), spiritual direction and spiritual friendship, prayer (nature and styles), liturgy and sacraments in the spiritual life.

## **The Catholic Experience in the United States (3)**

TH 3382

This course will study the present condition of the Catholic Church in the United States, as influenced by the country's colonial and national history and the Church's relationship with Rome; the Church's development of an ecclesial self identity and its interaction with other American religious bodies; and its position and influence in the modern world. Topics will include American Catholicism and social institutions (e.g. delivery of social services, health care and education), as well as involvement in political thought and political processes, the spiritualities and theologies of the Church in American, and its experience in the field of missionary activity, both as recipient and as contributor.

## **Introduction to Pastoral Ministry (3)**

TH 3390

This course will explore ministry and its contemporary practice in the Catholic church through a study of relevant Scriptural passages; the renewed theology of sacraments (especially Baptism, Confirmation, and Holy Orders); historical developments in the meaning and scope of ministry, as expressed in various Church documents (such as the decrees of Vatican II, "Christifidelis Laici", "Evangelii Nuntiandi", and "Catechesis Tradendae"); definitions of ministry and its scope and styles; and education, formation, and certification issues. The course will require a 15-hour service component, focusing on a ministerial setting.

## **Selected Topics in Biblical Studies (1)**

TH 4108

Specific topics may vary from semester to semester. May be repeated.

## **Selected Topics in Biblical Studies (1)**

TH 4109

Specific topics may vary from semester to semester. May be repeated.

## **Selected Topics in Systematic Theology (1)**

# THEOLOGY

TH 4138

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Systematic Theology (1)**

TH 4139

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Moral Theology (1)**

TH 4158

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Moral Theology (1)**

TH 4159

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Religious Experience or Communication (1)**

TH 4188

Specific topics in Religious Experience or Communication (evangelization and religious education) may vary from semester to semester. May be repeated.

**Selected Topics in Religious Experience or Communication (1)**

TH 4189

Specific topics in Religious Experience or Communication (evangelization and religious education) may vary from semester to semester. May be repeated.

**Selected Topics in General Studies in Religion (1)**

TH 4198

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Biblical Studies (2)**

TH 4208

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Biblical Studies (2)**

TH 4209

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Systematic Theology (2)**

TH 4238

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Systematic Theology (2)**

TH 4239

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Moral Theology (2)**

# THEOLOGY

TH 4258

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Moral Theology (2)**

TH 4259

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Religious Experience or Communication (2)**

TH 4288

Specific topics in Religious Experience or Communication (evangelization and religious education) may vary from semester to semester. May be repeated.

**Selected Topics in Religious Experience or Communication (2)**

TH 4289

Specific topics in Religious Experience or Communication (evangelization and religious education) may vary from semester to semester. May be repeated.

**Selected Topics in General Studies in Religion (2)**

TH 4298

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Biblical Studies (3)**

TH 4308

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Biblical Studies (3)**

TH 4309

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Systematic Theology (3)**

TH 4338

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Systematic Theology (3)**

TH 4339

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Moral Theology (3)**

TH 4358

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Moral Theology (3)**

TH 4359

Specific topics may vary from semester to semester. May be repeated.

**Selected Topics in Religious Experience or Communication (3)**

# THEOLOGY

TH 4388

Specific topics in Religious Experience or Communication (evangelization and religious education) may vary from semester to semester. May be repeated.

## **Selected Topics in Religious Experience or Communication (3)**

TH 4389

Specific topics in Religious Experience or Communication (evangelization and religious education) may vary from semester to semester. May be repeated.

## **Selected Topics in General Studies in Religion (3)**

TH 4398

Specific topics may vary from semester to semester. May be repeated.

## **Selected Topics in Marianist Studies (1)**

TH 5158

Specific topics may vary from semester to semester. May be repeated.

## **Selected Topics in Marianist Studies (1)**

TH 5188

Specific topics may vary from semester to semester. May be repeated.

## **Marian Theology (2)**

TH 5230

Introduction to Marian theology; Mary in the Scriptures; significant Marian documents. Mary in liturgical practice; Mary and cultures, especially Hispanic culture; and Mary in the ecumenical dialogue.

## **Selected Topics in Religious Experience or Communication (3)**

TH 5358

Specific topics in Religious Experience or Communication (evangelization and religious education) may vary from semester to semester. May be repeated.

## **Orientation to Marianist Religious Life (3)**

TH 5386

A theoretical and practical introduction to the elements of Marianist religious life: Marianist structure, history, and contemporary situation; Marianist mission and apostolate; Mary in Marianist life; personal and communal prayer; dynamics of spiritual growth; the vows. For Marianist aspirants.

## **Marianist Mission and Ministry (3)**

TH 5387

Mission and models of the Church; Fr. Chaminade's concept of mission; the apostolate of education in the Marianist tradition; lay and clerical ministries in the Church and personal ministry.

## **Selected Topics in Marianist Studies (3)**

TH 5388

Specific topics may vary from semester to semester. May be repeated.

# WOMEN'S STUDIES

## Academic Year

2011-2012

## School

School of Humanities and Social Science [School Web site](#)

## School Dean

Janet Dizinno, Ph.D. [hssdean@stmarytx.edu](mailto:hssdean@stmarytx.edu)

## Department

Languages

## Department Chair

Eva P. Bueno, Ph.D. [ebueno@stmarytx.edu](mailto:ebueno@stmarytx.edu)

## Department Courses and Descriptions

### Special Topics (3)

WN 3301

### Special Topics (3)

WN 3302

### Sociology of Sex Roles (3)

WN 3310

An examination of the process of learning male and female roles. Topics include sexual identity, gender stereotypes, cross-cultural differences in gender roles and socialization, and changes in these roles in contemporary society.

### Gender Politics (3)

WN 3316

This course examines and assesses the role and participation of women in American political life. Topics include: women and men as voters, candidates and office holders, the Women's Movement, civil rights, grass roots participation, and key policy issues that have particular relevance to women.

### Social Stratification (3)

WN 3320

An analysis of social stratification utilizing social class as the unit of study. The course will focus on the structure of social classes in the U.S. as a major factor influencing individual and group life chances with

# WOMEN'S STUDIES

regards to education, crime, health, and disease, world views and life styles.

## **Human Sexuality (3)**

WN 3337

A psychological overview of human sexuality emphasizing socio-psychological, physiological, and ethical aspects.

## **The Family (3)**

WN 3343

A study of the family as an institution and social system, including discussions of dating and mate selection, premarital and extramarital sex, birth control, abortion, illegitimacy, family planning, spousal relationships, interracial and interfaith marriages, socialization, social control, and change.

## **US Women's History (3)**

WN 3352

Study of women and gender in the history, politics, and culture of the United States, with an emphasis on the 19th and 20th centuries.

## **Marriage and Family Today (3)**

WN 3356

The nature of marriage as understood by the Catholic Church; the role of marriage and the family as the foundation of civil society; Natural Family Planning; and the specific social and personal challenges that married couples meet such as monogamy, fidelity, abstinence, finances, the extended family, and emotional differences.

## **Concept in Women's Studies (3)**

WN 4300

Highlights the most important issues addressed in various disciplinary and interdisciplinary fields of study.

## **Women's Issues: Health and Science (3)**

WN 4310

Issues can include: reproduction; mental and physical wellness; aging; medical ethics; disease and treatment protocols; women's issues in psychology. Faculty and topics can vary by semester, drawn from: Biology, Engineering, Psychology, Exercise and Sport Science, Philosophy (if concerned with medicine and science.)

## **Women's Issues: Politics, Law & Society (3)**

WN 4320

Issues can include: marriage and family, violence and society, employment, social and political structures, education, sex discrimination, feminism, sexuality and the law, family law, and critical legal theory. Faculty and topics can vary by semester drawn from Political Science, Speech Communication, Anthropology, History, Criminal Justice, Sociology, Psychology, Languages, and the School of Law.

## **Women's Issues: History, the Arts, Literature (3)**

WN 4330

# WOMEN'S STUDIES

Issues can include: art, drama, music, and literature; feminist theory; religion and spirituality; popular culture and mass media; marketing and communications careers. Faculty and topics can vary by semester drawn from English, History, Communications, Art, Music, Drama, Theology, Philosophy, and Languages.

## **Critical Inquiry in Sex and Gender (3)**

WN 4336

A exploration of a variety of key authors and texts about gender relations are used as the basis of making a critical assessment of the need for and the adequacy of various theories of sex and gender.

## **Women's Issues: Business, Economics and International Relations (3)**

WN 4340

Issues can include: national and global economics, women and development, corporate and business structures, the glass ceiling effect, work place discrimination, comparable worth, feminization of poverty and welfare, gender and human rights, gender and immigration law, gender and war. Faculty and topics can vary by semester drawn from: The School of Business, the School of Law, Economics, Political Science and International Relations.

## **Capstone Seminar in Women's Studies (3)**

WN 4350

The Capstone course will include a service learning project in various fields and provide the opportunity for viable synthesis. Prerequisite: Senior Standing.

## **Internship on Women's Issue (3)**

WN 4375

Experience-based education in the context of an acceptable pre-professional and/or gender-based organization or agency, to include work under a supervisor approved by the academic advisor. Ordinarily junior or senior status is preferred. It is generally recommended to obtain 3 semester hours, student must spend 10 hours per week. A research paper, tied to the internship, is also required. Students work with an academic advisor.

## **Women Authors (3)**

WN 5330

Cross-cultural reading of the works of women authors. Study of the development of a woman's tradition in literature, with emphasis on the themes, genre, and writing styles created by 20th Century female authors.

School of  
Science, Engineering and Technology



# APPLIED PHYSICS

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Physics

## Department Chair

Richard Cardenas, Ph.D. [rcardenas@stmarytx.edu](mailto:rcardenas@stmarytx.edu)

## Description of Program/Major

The applied physics degree has an option in computer science or electrical engineering. Applied physics is a Bachelor of Science degree plan that provides an instructional base in physics, engineering, mathematics and computer applications. It prepares students to enter today's high technology marketplace upon graduation. Along with technical courses, students in the program benefit from liberal arts courses in English, social science, philosophy, theology, speech, foreign language and fine arts.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3

# APPLIED PHYSICS

SMC 4301      Capstone Seminar: Prospects for Community and Civilization      3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# APPLIED PHYSICS

St. Mary's University

BS Applied Physics (PY) Computer Science Option Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

**St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.**

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	CS 1410 Programming I	4	___	SMC 1312 Foundations of Reflection: Nature	3
___	MT 2412 Univariate Calculus I	4	___	CS 1411 Programming II	4
___	PY1404 Mechanics, Heat, Acoustics	4	___	MT 2413 Univariate Calculus II	4
___	ND 0101 Personal & Academic Development	0	___	PY2404 Electricity, Magnetism, Optics	4
	Total	15		Total	18
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	EN 13XX Rhetoric & Composition <sup>2</sup>	3	___	Speech/Communication <sup>1</sup>	3
___	CS 2313 Object Oriented Programming I	3	___	Social Science/History <sup>3</sup>	3
___	MT 3311 Differential Equations	3	___	MT 3323 Discrete Mathematics	3
___	PY 3301 Atomic Physics	3	___	PY3304 Thermodynamics	3
___	PY 3101 Atomic Physics Lab	1			
	Total	16		Total	15
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics	3	___	SMC 2302 Foundations of Practice: Civic	3
___	Foreign Language <sup>6</sup>	3	___	Engagement & Social Action	
___	CS 2315 Algorithms	3	___	SMC 2303 Foundation of Practice: Fine Arts &	3
___	MT 3324 Linear Algebra	3	___	Creative Process	
___	PY 3307 Classical Mechanics	3	___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3
			___	Foreign Language <sup>6</sup>	3
			___	Advanced Computer Science Elective*	3
	Total	15		Total	15
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature	3	___	SMC 4301 Capstone Seminar: Prospects for	3
___	MT 4351 Numerical Analysis I	3	___	Community and Civilization	
___	PY3308 Intro to Quantum Mechanics	3	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	Advanced Computer Science Elective*	3	___	PY3309 Electromagnetic Theory	3
___	Technical Elective*	3	___	Science Elective*	3
			___	Technical Elective*	3
	Total	15		Total	15

Total Hours 124

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

\*The Advanced Science Electives may be selected from any junior and senior level science courses.

\*The Technical Electives may be chosen from any advanced science course.

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing PY 3301 with a grade of "C" or higher.

# APPLIED PHYSICS

St. Mary's University  
BS Applied Physics (PY) Computer Science Option Degree Plan – 2010  
124 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## **BS Applied Physics Computer Science Option Major Courses (73 hours)**

__ CS 1410 – Programming I	4
__ CS 1411 – Programming I	4
__ CS 2313 – Object Oriented Programming I	3
__ CS 2315 – Algorithms	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3311 – Differential Equations	3
__ MT 3323 – Discrete Mathematics	3
__ MT 3324 – Linear Algebra	3
__ MT 4351 – Numerical Analysis I	3
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4
__ PY 3101 – Atomic Physics Lab	1
__ PY 3301 – Atomic Physics	3
__ PY 3304 – Thermodynamics	3
__ PY 3307 – Classical Mechanics	3
__ PY 3308 – Intro to Quantum Mechanics	3
__ PY 3309 – Electromagnetic Theory	3
__ Science Elective	3
__ Advanced Computer Science Elective	3
__ Advanced Computer Science Elective	3
__ Technical Elective	3
__ Technical Elective	3

## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing PY 3301 with a grade of "C" or higher.

# APPLIED PHYSICS

St. Mary's University

BS Applied Physics (PY) Engineering Option Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	CS 1410 Programming I	4	___	SMC 1312 Foundations of Reflection: Nature	3
___	MT 2412 Univariate Calculus I	4	___	EN 13XX Rhetoric & Composition <sup>2</sup>	3
___	PY1404 Mechanics, Heat, Acoustics	4	___	MT 2413 Univariate Calculus II	4
___	ND 0101 Personal & Academic Development	0	___	PY2404 Electricity, Magnetism, Optics	4
	Total	15		Total	17
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	EG 2341 Logic Design	3	___	Speech/Communication <sup>1</sup>	3
___	EG 2141 Logic Design Lab	1	___	Social Science/History <sup>3</sup>	3
___	MT 3311 Differential Equations	3	___	MT 3414 Multivariate Calculus	4
___	PY 3301 Atomic Physics	3	___	PY 3304 Thermodynamics	3
___	PY 3101 Atomic Physics Lab	1			
	Total	14		Total	16
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics	3	___	SMC 2302 Foundations of Practice: Civic	3
___	Foreign Language <sup>6</sup>	3	___	Engagement & Social Action	
___	EG 2352 Circuit Analysis I	3	___	SMC 2303 Foundation of Practice: Fine Arts &	3
___	EG 2151 Circuit Analysis I Lab	1	___	Creative Process	
___	MT 4351 Numerical Analysis I	3	___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3
___	PY 3307 Classical Mechanics	3	___	Foreign Language <sup>6</sup>	3
			___	EG 2353 Circuit Analysis II	3
			___	EG 2153 Circuit Analysis II Lab	1
	Total	16		Total	16
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature	3	___	SMC 4301 Capstone Seminar: Prospects for	3
___	EG 3356 Electronics I	3	___	Community and Civilization	
___	EG 3156 Electronics I Lab	1	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	MT 4331 Probability & Statistics I	3	___	EG 3357 Electronics II	3
___	PY 3308 Intro to Quantum Mechanics	3	___	EG 3157 Electronics II Lab	1
			___	PY3309 Electromagnetic Theory	3
	Total	13		Total	13

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing PY 3301 with a grade of "C" or higher.

# APPLIED PHYSICS

St. Mary's University  
BS Applied Physics (PY) Engineering Option Degree Plan – 2010  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## School of Science, Engineering, and Technology Specific Core (21 Hours)

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## BS Applied Physics Engineering Option Major Courses (69 hours)

__ CS 1410 – Programming I	4
__ EG 2341 – Logic Design	3
__ EG 2141 – Logic Design Lab	1
__ EG 2151 – Circuit Analysis I Lab	1
__ EG 2153 – Circuit Analysis II Lab	1
__ EG 2352 – Circuit Analysis I	3
__ EG 2353 – Circuit Analysis II	3
__ EG 3156 – Electronics I Lab	1
__ EG 3157 – Electronics II Lab	1
__ EG 3356 – Electronics I	3
__ EG 3357 – Electronics II	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3311 – Differential Equations	3
__ MT 3414 – Multivariate Calculus	4
__ MT 4351 – Numerical Analysis I	3
__ MT 4331 – Probability and Statistics I	3
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4
__ PY 3101 – Atomic Physics Lab	1
__ PY 3301 – Atomic Physics	3
__ PY 3304 – Thermodynamics	3
__ PY 3307 – Classical Mechanics	3
__ PY 3308 – Intro to Quantum Mechanics	3
__ PY 3309 – Electromagnetic Theory	3

## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be fulfilled by successfully completing PY 3301 **with a grade of "C" or higher.**

# APPLIED PHYSICS

## Department Courses and Descriptions

### **Physics Concepts & Application (3)**

PY 1300

Designed to convey the considerable bearing physical laws have on common experience. Applications in trades, professions and industry are provided. Directed to ward non-science majors to help them evaluate the evidence of their own experience and see the pervasiveness of physics in virtually every aspect of technological society. Topics: Motion, Gravity, Relativity, Energy and Power, Energy Resources, Waves, Sound and Electricity.

### **Modern Astronomy (3)**

PY 1310

A course that will be of interest to students not majoring in science, engineering or mathematics as well as those majoring in these fields. This course deals mainly with stellar and galactic astronomy but begins with a brief survey of our solar system including orbits and Kepler's laws. The emphasis is placed upon how compositions, ages and evolution are deduced. The course will be somewhat quantitative but the mathematical requirements are minimal.

### **General Physics I (4)**

PY 1401

First semester: mechanics, sound and heat. Second semester: electricity, light, atomic and nuclear physics. Intended for non-physics and non-engineering students. (Lecture 3 hours; Lab 4 hours.) (PHYS 1401)

### **General Physics II (4)**

PY 1402

First semester: mechanics, sound and heat. Second semester: electricity, light, atomic and nuclear physics. Intended for non-physics and non-engineering students. (Lecture 3 hours; Lab 4 hours.) (PHYS 1402)

### **Mechanics, Heat Acoustics (4)**

PY 1404

Calculus based physics. (Lecture 3 hours; Lab 4 hours.) Co-requisite MT 2412 (PHYS 2425)

### **Electricity, Magnetism, Optics (4)**

PY 2404

Calculus based physics. (Lecture 3 hours; Lab 4 hours.) Prerequisites PY1404, MT 2412 (PHYS 2426)

### **Atomic Physics Lab (1)**

PY 3101

(Lab 4 hours per week; usually concurrent with PY 3301.)

### **Nuclear Physics Lab (1)**

PY 3102

(Lab 4 hours per week; usually concurrent with PY 3302.)

### **Electronics Lab I (1)**

PY 3113

# APPLIED PHYSICS

Same as EG 3156

## **Electronics Laboratory II (1)**

PY 3114

Same as EG 3157

## **Special Topics Laboratory (1)**

PY 3125

## **Atomic Physics (3)**

PY 3301

Special relativity, electrons and quanta, Quantum Theory, Schrödinger's Equation, x-rays -spectra. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Nuclear Physics (3)**

PY 3302

Radio activity, Rutherford scattering, nuclear atom, radiation detectors, nuclear reaction, alpha decay, beta decay, gamma radiation, nuclear models, accelerators. Prerequisite: PY 3301. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Thermodynamics (3)**

PY 3304

States and processes, equations of state, internal energy, enthalpy, the ideal gas, incompressible substances, entropy and the second law, second law analysis, thermodynamics relationships, engineering applications. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Physical Optics (3)**

PY 3305

Wave theory, interference, diffraction, polarization, spectroscopy, and photometry. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Mechanics (3)**

PY 3307

Vector approach to Newtonian mechanics. Static and Kinetics. Introduction to the Lagrangian and Hamiltonian approach. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Quantum Mechanics (3)**

PY 3308

Schrodinger wave equation, stationary state solutions, the hydrogen atom, angular momentum, perturbation theory. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Electromagnetics (3)**



# APPLIED PHYSICS

PY 3309

Vector analysis, electrostatics, dielectrics, magnetostatics, Maxwell's equation, wave propagation, radiation. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Electronics (3)**

PY 3313

Theory of semiconductors; discrete devices and integrated circuits; linear and digital operation. (EG 2341, EG 2152, EG 2352, EG 2353 are prerequisites.) Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses. (same as EG3356)

## **Electronics (3)**

PY 3314

Theory of semiconductors; discrete devices and integrated circuits; linear and digital operation. (EG 2341, EG 2152, EG 2352, EG 2353 are prerequisites.) Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses. (same as EG3357)

## **Special Topics (3)**

PY 3325

This course is used to introduce special topics of interest. Topics in past have included the following: Particle Physics, Biophysics, Functional Neuro imaging, Fiesta of Physics Outreach, Advanced Electromagnetic theory and Advanced Quantum Mechanics. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

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## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Biological Sciences

## Department Chair

Timothy Raabe, Ph.D. [traabe@stmarytx.edu](mailto:traabe@stmarytx.edu)

## Description of Program/Major

Students who aspire to the health professions pursue a curriculum devoted almost exclusively to the natural sciences in search of technical expertise. The programs in the Department of Biological Sciences lead to the B.A. or B.S. degree and prepare students for employment or additional studies in professional or graduate school. Students earning a B.A. or B.S. degree also earn a minor in chemistry. The B.S. in Forensic Science (Biology Option) is a rigorous major covering both the science and law aspects of this prominently expanding scientific field. Students completing this degree will be adequately prepared to obtain employment at a Forensic Crime laboratory, to pursue graduate studies in a number of specialties within the field, or to enter a variety of professional schools. The B.A. degree with teacher certification satisfies the requirements for teacher certification by the Texas State Board for Educator Certification.

The study of biological sciences at St. Mary's University includes a broad-based curriculum and extensive scientific training designed to prepare well-rounded health care professionals. Students develop written and oral communication skills, critical thinking and analytical skills, and an understanding and respect for ethical and moral concerns. The first two years of the program are a common set of courses in general biology followed by genetic principles and cell biology. Following completion of the first two years of study, students enroll in a total of four advanced biology electives which can include anatomy, general physiology, microbiology, transmission genetics, comparative anatomy, neurophysiology, comparative physiology, genes & genomes, developmental biology, immunology, medical microbiology or molecular biology. The final year includes a two-semester biochemistry course. All of the biology courses required for the major have a laboratory component that are meant to develop hands-on learning experiences.

Because our students display competence, dedication and compassion, they are readily accepted into graduate programs, the health professions, biomedical research and teaching fields. The program in biological sciences is built upon a rigorous study of biology and includes courses in chemistry, physics

# BIOLOGY

and mathematics that satisfy professional school entrance requirements.

## Health Profession Partnerships

### Dental Early Admission Program (DEAP)

St. Mary's University Department of Biological Sciences has partnered with the University of Texas Health Science Center at San Antonio (UTHSCSA) Dental School to offer a 3+4 program known as the Dental Early Acceptance Program, or DEAP. The DEAP program allows St. Mary's students pursuing dentistry to gain early acceptance into the UTHSCSA Dental School and spend only 3 years at St. Mary's in pursuit of a bachelor's degree.

Students accepted into the DEAP program will follow a 3 year degree plan at St. Mary's which fulfills the prerequisite coursework for the UTHSCSA Dental School as well as degree requirements for a BA in Combined Sciences from St. Mary's. After completing the 3 year degree plan, the student will matriculate into the UTHSCSA Dental School. The BA in Combined Sciences degree will be awarded by St. Mary's after the student successfully completes the 1st year of coursework at the Dental School. The student will earn a Doctor of Dental Science (DDS) degree from the UTHSCSA Dental School after completing the required coursework at the Dental School.

The DEAP is intended for first-time freshmen at St. Mary's who are serious about pursuing dentistry. To be eligible for the DEAP program, the student must:

1. Be a first-time freshman at St. Mary's who has earned at least 12 semester credit hours but not more than 30 semester credit hours at St. Mary's; and
2. Earn at least a 3.4 GPA at St. Mary's.

Applications and supporting documents for the DEAP are submitted through the Pre-Health Professions office at St. Mary's. To apply for the program, the student must complete and submit the following by March 1st of the freshman year:

1. The DEAP application;
2. Official college/university transcripts;
3. Personal statement;
4. Letter of recommendation for the DEAP from the Pre-Health Professions Advisor or the Pre-Dental faculty advisor at St. Mary's.

Although volunteer and shadow hours are not **REQUIRED** for acceptance into the DEAP program, it is strongly **RECOMMENDED** that the student engage in these experiences to strengthen his/her application and increase his/her understanding of the field of dentistry.

If accepted into the DEAP program, the student must:

1. Complete the remaining prerequisite courses for dental school;
2. Maintain an overall GPA and science GPA of at least 3.4;

# BIOLOGY

3. Take the DAT exam during the junior year and achieve a minimum score of 18; and
4. Satisfy all requirements of the Texas Medical and Dental Schools Application Service (TMDSAS) application process including a letter of recommendation from the Health Professions Advisory Committee at St. Mary's.

## Facilitated Admissions for South Texas Scholars (FASTS)

St. Mary's University Department of Biological Sciences has partnered with the University of Texas Health Science Center at San Antonio (UTHSCSA) School of Medicine to offer a facilitated admission program into the UTHSCSA School of Medicine. The Facilitated Admissions for South Texas Scholars (FASTS) program allows St. Mary's students pursuing medicine to gain early acceptance into the UTHSCSA School of Medicine and take part in a rigorous summer premedical academy to better prepare them for the MCAT exam and success in medical school.

The FASTS program is intended for first-time freshmen at St. Mary's who are serious about pursuing medicine. To be eligible for the FASTS program, the student must:

1. Be a United States citizen or a permanent resident AND a Texas resident; and
2. Possess the academic abilities and personal qualities that predict success as a medical student and physician.

Academic Factors:

1. Though there is not a GPA requirement to be eligible to apply for FASTS, competitive applicants will have a St. Mary's GPA of 3.25 or higher.
2. Competitive applicants will have taken both General Biology I and General Chemistry I during their first semester at St. Mary's.
3. High school overall GPA and science GPA will be considered, as well as SAT & ACT scores.

Personal Factors:

1. Students are encouraged to engage in clinical experiences during high school and the first semester at St. Mary's. These experiences allow the student to gain exposure to the medical field and increase knowledge of clinical procedures and current issues relevant to the industry.
2. Students are encouraged to participate in community service during high school and the first semester at St. Mary's. These experiences demonstrate a commitment to improving the community and a passion for helping those in need - characteristics a good physician will possess.
3. Students should build relationships with faculty members during the first semester at St. Mary's. Science faculty members nominate students for the FASTS program and write letters of recommendation for applicants.
4. Students should take advantage of the services offered at St. Mary's Career Services Center to sharpen their interview skills, and polish their resume and personal statement.

# BIOLOGY

Applications and supporting documents for the FASTS program are submitted through the Pre-Health Professions office at St. Mary's. To apply for the program, the student must complete and submit the following by February 1st of the freshman year:

1. The FASTS program application
2. Official high school transcript & SAT/ACT scores
3. Official college/university transcripts
4. Personal statement
5. Resume
6. Two letters of recommendation  
(details of the personal statement and letters of recommendation are outlined in the program application)

If accepted into the FASTS program, there are conditions the student must meet to remain in the program and be eligible for acceptance into the UTHSCSA medical school:

1. The student must complete a bachelor's degree program at St. Mary's with an overall GPA and science GPA of 3.25 or above. AP coursework will NOT be considered fulfillment of science requirements.
2. In the spring of their junior year, qualified participants who meet the premedical coursework requirements will take the MCAT and those who obtain a ratio of science GPA/MCAT scores of 3.25/28, 3.5/26 or 3.75/24 or better will be eligible for acceptance to medical school following an interview by the admissions committee. In addition, participants cannot have a score of less than 7 on any sub-section of the MCAT.
3. Participants must satisfy all requirements of the Texas Medical and Dental Schools Application Service (TMDSAS) application process including a letter of recommendation from the Health Professions Advisory Committee at St. Mary's, have record of ethical behavior while a pre-medical student, and demonstrate a continuing commitment to study medicine.

## **Joint Admission Medical Program (JAMP)**

The Joint Admission Medical Program (JAMP) is a special program created by the Texas Legislature to support and encourage highly qualified, economically disadvantaged Texas resident students pursuing a medical education. Funded through the Texas Higher Education Coordinating Board, JAMP is a unique partnership between all eight Texas medical schools and sixty-five public and private four-year undergraduate institutions. St. Mary's is one such private institution. Students accepted into JAMP are assured admission into one of the eight medical schools in Texas provided they meet requirements of the program while completing their undergraduate education. JAMP students also participate in two rigorous summer internships provided by JAMP to prepare for the MCAT exam and success in medical school.

JAMP is intended for students who are serious about pursuing medicine. To be eligible for JAMP, the student must:

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1. Be a Texas resident;
2. Enter St. Mary's no later than the first fall semester after graduating high school;
3. Complete 27 semester credit hours during the freshman year at St. Mary's (only 3 of which may be AP hours);
4. Have the ability to participate in two summer internships provided by JAMP;
5. Achieve an overall GPA and science GPA of 3.25 at St. Mary's; and
6. Be Pell grant eligible or have an Estimated Family Contribution (EFC) of up to \$8000 (calculated from the Free Application for Federal Student Aid (FASFA)).

Students interested in JAMP are encouraged to:

1. Engage in clinical experiences during high school and the freshman year at St. Mary's. These experiences allow the student to gain exposure to the medical field and increase knowledge of clinical procedures and current issues relevant to the industry.
2. Participate in community service during high school and the freshman year at St. Mary's. These experiences demonstrate a commitment to improving the community and a passion for helping those in need - characteristics a good physician will possess.
3. Build relationships with faculty members during the freshman year at St. Mary's. Science faculty members write letters of recommendation for applicants.
4. Take advantage of the services offered at St. Mary's Career Services Center to sharpen their interview skills, and polish their resume and personal statement.

Applications and supporting documents for JAMP are submitted through the Pre-Health Professions office at St. Mary's. To apply for the program, the student must complete and submit the following by October 15th of the sophomore year:

1. The JAMP application (completed online on the JAMP website)
2. Student Aid Report (SAR) (obtained from the FAFSA application)
3. Official high school transcript & SAT/ACT scores
4. Official college/university transcripts
5. Personal statement (uploaded with the JAMP application on the JAMP website)
6. Resume (uploaded with the JAMP application on the JAMP website)
7. Two letters of recommendation accompanied by JAMP Evaluation forms (one from St. Mary's JAMP Faculty Director and one from a St. Mary's faculty)

If accepted into JAMP, there are conditions the student must meet to remain in the program and be eligible for acceptance into a Texas medical school. JAMP Students must:

1. Complete a bachelor's degree program at St. Mary's with an overall GPA and science GPA of 3.25 or above. All medical school prerequisite coursework must be completed at St. Mary's;
2. Take the MCAT exam no later than the Spring semester of the junior year and achieve an overall score of 23 with no sections less than 7;
3. Successfully complete the JAMP summer internships after the sophomore year and junior year;
4. Receive satisfactory evaluations from faculty overseeing summer internships at medical schools;
5. Meet with the JAMP Faculty Director at least once per month each academic year;
6. Provide updated transcripts of college coursework and grades each semester to the St. Mary's

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JAMP Faculty Director; and

7. Satisfy all requirements of the Texas Medical and Dental Schools Application Service (TMDSAS) application process including a letter of recommendation from the Health Professions Advisory Committee at St. Mary's, and submit all application materials by July 1st after the junior year.

## Health Professions Early Acceptance Program (HEAP)

St. Mary's University Department of Biological Sciences has partnered with the University of Texas Health Science Center at San Antonio (UTHSCSA) School of Health Professions to offer the Health Professions Early Acceptance Program (HEAP) for Physical Therapy, Occupational Therapy, and Physician Assistant Studies. The HEAP allows St. Mary's students pursuing physical therapy, occupational therapy, or physician assistant studies to gain early acceptance into the UTHSCSA School of Health Professions and spend only 3 years at St. Mary's in pursuit of a bachelor's degree.

Students accepted into the HEAP will follow a 3 year degree plan at St. Mary's which fulfills the prerequisite coursework for the health professions program of their choice at UTHSCSA as well as degree requirements for a BA in Combined Sciences from St. Mary's. After completing the 3 year degree plan, the student will matriculate into the UTHSCSA School of Health Professions. The BA in Combined Sciences degree will be awarded by St. Mary's after the student successfully completes the 1st year of coursework in the health professions program at UTHSCSA. The student will earn a professional degree from the UTHSCSA School of Health Professions after completing the required coursework in the health professions program.

The HEAP is intended for first-time freshmen at St. Mary's who are serious about pursuing physical therapy, occupational therapy, or physician assistant studies. Students interested in the HEAP will undergo a review process at St. Mary's after the freshman year which will determine eligibility to apply for the HEAP. To be eligible, the student must:

1. Be a first-time freshman at St. Mary's who has earned at least 26 semester credit hours (but not more than 60), including at least 14 hours in science and math, at St. Mary's;
2. Earn at least a 3.25 GPA at St. Mary's; and
3. Accrue at least 20 hours working, volunteering, shadowing, or observing in a corresponding clinical setting (hours collected during high school are acceptable).

Applications and supporting documents for the HEAP are submitted through the Pre-Health Professions office at St. Mary's. To apply for the program, the student must complete and submit the following by September 1st of the sophomore year:

1. The HEAP application
2. Copies of college/university transcripts
3. Personal statement
4. Resume
5. Two letters of recommendation

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(details of the personal statement, resume, and letters of recommendation are outlined in the program application)

If accepted into the HEAP, the student must:

1. Complete the remaining prerequisite courses required by the health professions program;
2. Maintain the GPA required by the health professions program (usually at least a 3.25 or above);
3. Complete any additional requirements for the health professions program such as volunteering or shadowing;
4. Pass a criminal background check that is required of all students in the UTHSCSA School of Health Professions; and
5. Submit an official UTHSCSA application and official college or university transcripts along with an application fee to UTHSCSA prior to matriculating into the health professions program.

## [Nursing Early Acceptance Program \(NEAP\)](#)

St. Mary's University Department of Biological Sciences has partnered with the University of Texas Health Science Center at San Antonio (UTHSCSA) School of Nursing to offer the Nursing Early Acceptance Program (NEAP). The NEAP program is a dual degree program which allows St. Mary's students to gain early acceptance into the UTHSCSA School of Nursing and spend only 3 years at St. Mary's in pursuit of a bachelor's degree.

Students accepted into the NEAP will follow a 3 year degree plan at St. Mary's which fulfills the prerequisite coursework for nursing at UTHSCSA as well as degree requirements for a BA in Combined Sciences from St. Mary's. After completing the 3 year degree plan, the student will matriculate into the UTHSCSA School of Nursing. The BA Combined Sciences degree will be awarded by St. Mary's after the student successfully completes the 1st year of coursework in the nursing program at UTHSCSA. The student will earn a Bachelor of Science in Nursing (BSN) degree from the UTHSCSA School of Nursing after completing the required coursework in the nursing program.

The NEAP is intended for first-time freshmen at St. Mary's who are serious about pursuing nursing. Students interested in the NEAP will undergo a review process at St. Mary's after the freshman year which will determine eligibility to apply for the NEAP. To be eligible, the student must:

1. Be a first-time freshman at St. Mary's who has earned at least 26 semester credit hours (but not more than 60), including at least 14 hours in science and math, at St. Mary's;
2. Earn at least a 3.5 science GPA and a 3.3 overall GPA at St. Mary's; and
3. Demonstrate, in a written personal statement, an understanding of the nursing profession and a desire to pursue the field.

Applications and supporting documents for the NEAP are submitted through the Pre-Health Professions office at St. Mary's. To apply for the program, the student must complete and submit the following by September 1st of the sophomore year:



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1. The NEAP application
2. Copies of college/university transcripts
3. Personal statement
4. Resume
5. Two letters of recommendation  
(details of the personal statement, resume, and letters of recommendation are outlined in the program application)

If accepted into the NEAP, the student must:

1. Complete the remaining prerequisite courses required by the UTHSCSA School of Nursing;
2. Maintain a 3.5 science GPA and a 3.3 overall GPA;
3. Achieve a passing score (70%) on the TEAS V standardized exam;
4. Be up-to-date on all immunizations including all Hep A&B series prior to matriculating into the School of Nursing;
5. Receive CPR certification;
6. Submit an official UTHSCSA School of Nursing application and official college or university transcripts along with an application fee during the junior year prior to matriculating into the School of Nursing; and
7. Pass a criminal background check prior to matriculating into the School of Nursing.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

### School Specific Core (SSC)

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## School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

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## St. Mary's University BA Biology (BL) Degree Plan

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	BL 1401 General Biology I	4	___	SMC 1312 Foundations of Reflection: Nature	3
___	CH 1401 General Chemistry I	4	___	BL 1402 General Biology II	4
___	MT 1411 College Algebra & Trigonometry	4	___	CH 1402 General Chemistry II	4
___	ND 0101 Personal & Academic Development	0	___	MT 2303 Intro to Probability & Statistics	3
<b>Total</b>		<b>15</b>		<b>Total</b>	<b>17</b>
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others Speech/Communication <sup>1</sup>	3	___	SMC 1314 Foundations of Reflection: God	3
___	BL 2332 Cell Biology or BL 2330 Genetic Principles	3	___	EN 13XX Rhetoric & Composition <sup>2</sup>	3
___	CH 3411 Organic Chemistry I	4	___	Social Science/History <sup>3</sup>	3
___	BL 2233 Cell & Molecular Methods Lab	2	___	BL 2330 Genetic Principles or BL 2332 Cell Biology	3
___			___	CH 3412 Organic Chemistry II	4
<b>Total</b>		<b>15</b>		<b>Total</b>	<b>16</b>
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
___	Foreign Language <sup>6</sup>	3	___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
___	PY 1401 General Physics I	4	___	Foreign Language <sup>6</sup>	3
___	BL 34xx or BL44xx Advanced Biology*	4	___	BL 34xx or BL44xx Advanced Biology**	4
___			___	Elective	3
<b>Total</b>		<b>17</b>		<b>Total</b>	<b>16</b>
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature	3	___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
___	BL 4451 Biochemistry I	4	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	CH 3423 Analytical Chemistry	4	___	BL 4452 Biochemistry II	4
___	BL 34xx or BL44xx Advanced Biology	4	___	BL 34xx or BL44xx Advanced Biology	4
___			___	Elective	3
<b>Total</b>		<b>15</b>		<b>Total</b>	<b>17</b>

Total Hours 128

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (Must be "C" or better): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: Any EN 23XX literature course

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

\*Organismal Biology (4 hours): BL 3430, 3424, 3430, 3434, 3432, 3436, 3442, 3461, 3464

\*\*Cellular and Molecular Biology (4 hours): BL 3444, 3481, 3490, 3472, 4440, 3495, 4481, 4497

### **PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY**

For this major, this requirement will be fulfilled by successfully completing BL 2233.

# BIOLOGY

**St. Mary's University**  
**BA Biology (BL) Degree Plan - 2010**  
**128 Hours**

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric (grade of "C" or better) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or any EN 23XX literature course	3

## **BA Biology Major Courses (71 hours)**

__ BL 1401 – General Biology I	4
__ BL 1402 – General Biology II	4
__ BL 2233 – Cell and Molecular Methods Lab	2
__ BL 2330 – Genetic Principles	3
__ BL 2332 – Cell Biology	3
__ BL 4451 – Biochemistry I	4
__ BL 4452 – Biochemistry II	4
__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ CH 3411 – Organic Chemistry I	4
__ CH 3412 – Organic Chemistry II	4
__ CH 3423 – Analytical Chemistry	4
__ MT 1411 – College Algebra and Trigonometry	4
__ MT 2303 – Intro to Probability & Statistics	3
__ PY 1401 – General Physics I	4
__ Organismal Biology: BL 3430 Anatomy, BL 3424 Comparative Anatomy, BL 3430 General Physiology, BL 3434 Comparative Physiology, BL 3432 Endocrinology, BL 3436 Neurophysiology, BL 3442 Forensic Osteology, BL 3461 Transmission Genetics, BL 3464 Evolutionary Biology	4
__ Cellular and Molecular Biology: BL 3444 Histology, BL 3481 Microbiology, BL 3490 Developmental Biology, BL 3472 Immunology, BL 4440 Mechanisms of Disease, BL 3495 Molecular Biology, BL 4481 Medical Microbiology, BL 4497 Genes and Genomes	4
__ BL 34XX or BL 44XX – Advanced Biology	4
__ BL 34XX or BL 44XX – Advanced Biology	4

## **Electives (6 hours)**

__ Electives - An elective can be any course taken from any discipline.	6
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# BIOLOGY

## Proficiency in Information Technology and Information Literacy

\_\_\_ For this major, this requirement will be fulfilled by successfully completing BL 2233.

# BIOLOGY

## St. Mary's University

### BS Biology (BL) with Chemistry Minor Degree Plan

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
	Fall	Hr		Spring	Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1311 Foundations of Reflection: Self	3
—	BL 1401 General Biology I	4	—	SMC 1312 Foundations of Reflection: Nature	3
—	CH 1401 General Chemistry I	4	—	BL 1402 General Biology II	4
—	MT 1411 College Algebra & Trigonometry	4	—	CH 1402 General Chemistry II	4
—	ND 0101 Personal & Academic Development	0	—	MT 2412 Univariate Calculus I	4
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>18</b>
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 1314 Foundations of Reflection: God	3
—	Speech/Communication <sup>1</sup>	3	—	EN 13XX Rhetoric & Composition <sup>2</sup>	3
—	Social Science/History <sup>3</sup>	3	—	BL 2330 Genetic Principles or BL 2332 Cell Biology	3
—	BL 2332 Cell Biology or BL 2330 Genetic Principles	3	—	CH 3412 Organic Chemistry II	4
—	CH 3411 Organic Chemistry I	4	—	BL 2233 Cell & Molecular Methods Lab	2
	<b>Total</b>	<b>16</b>		<b>Total</b>	<b>15</b>
Third Year Courses					
—	SMC 2301 Foundations of Practice: Ethics	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
—	Foreign Language <sup>6</sup>	3	—	Foreign Language <sup>6</sup>	3
—	PY 1401 General Physics I	4	—	PY 1402 General Physics II	4
—	BL 34xx or BL44xx Advanced Biology*	4	—	BL 34xx or BL44xx Advanced Biology**	4
—	Elective Hours	1	—		
	<b>Total</b>	<b>18</b>		<b>Total</b>	<b>17</b>
Fourth Year Courses					
—	SMC 2304 Foundation of Practice: Literature	3	—	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
—	BL 4451 Biochemistry I	4	—	TH 33xx Advanced Theology <sup>7</sup>	3
—	CH 3423 Analytical Chemistry or CH 3424 Instrumental Analysis	4	—	BL 4452 Biochemistry II	4
—	BL 34xx or BL44xx Advanced Biology	4	—	BL 34xx or BL44xx Advanced Biology	4
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>14</b>

Total Hours 128

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (Must be "C" or better): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: Any EN 23XX literature course

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

\*Organismal Biology (4 hours): BL 3430, 3424, 3430, 3434, 3432, 3436, 3442, 3461, 3464

\*\*Cellular and Molecular Biology (4 hours): BL 3444, 3481, 3490, 3472, 4440, 3495, 4481, 4497

#### **PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY**

For this major, this requirement will be fulfilled by successfully completing BL 2233.

# BIOLOGY

**St. Mary's University**  
**BS Biology (BL) with Chemistry Minor Degree Plan - 2010**  
**128 Hours**

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric (grade of "C" or better) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or any EN 23XX literature course	3

## **BS Biology Major Courses (56 hours)**

__ BL 1401 – General Biology I	4
__ BL 1402 – General Biology II	4
__ BL 2233 – Cell and Molecular Methods Lab	2
__ BL 2330 – Genetic Principles	3
__ BL 2332 – Cell Biology	3
__ BL 4451 – Biochemistry I	4
__ BL 4452 – Biochemistry II	4
__ MT 1411 – College Algebra and Trigonometry	4
__ MT 2412 – Univariate Calculus I	4
__ PY 1401 – General Physics I	4
__ PY 1402 – General Physics II	4
__ Organismal Biology: BL 3430 Anatomy, BL 3424 Comparative Anatomy, BL 3430 General Physiology, BL 3434 Comparative Physiology, BL 3432 Endocrinology, BL 3436 Neurophysiology, BL 3442 Forensic Osteology, BL 3461 Transmission Genetics, BL 3464 Evolutionary Biology	4
__ Cellular and Molecular Biology: BL 3444 Histology, BL 3481 Microbiology, BL 3490 Developmental Biology, BL 3472 Immunology, BL 4440 Mechanisms of Disease, BL 3495 Molecular Biology, BL 4481 Medical Microbiology, BL 4497 Genes and Genomes	4
__ BL 34XX or BL 44XX – Advanced Biology	4
__ BL 34XX or BL 44XX – Advanced Biology	4

## **Chemistry Minor Courses (20 hours)**

__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ CH 3411 – Organic Chemistry I	4
__ CH 3412 – Organic Chemistry II	4
__ CH 3423 – Analytical Chemistry or CH 3424 Instrumental Analysis	4

# BIOLOGY

## **Elective (1 hour)**

\_\_\_ Electives - An elective can be any course taken from any discipline.

1

## **Proficiency in Information Technology and Information Literacy**

\_\_\_ For this major, this requirement will be fulfilled by successfully completing BL 2233.



# BIOLOGY

## Department Courses and Descriptions

### **General Biology for Non-Majors (3)**

BL 1301/2

Designed for non-biology majors to fulfill natural science requirement. Cannot be applied to Biology major or minor requirement. An introduction to the science of biology providing general principles, organization and diversity of life, maintenance and perpetuation of life forms, and interrelationships between living things. Emphasis on human concerns. No prerequisite for BL 1301 or 1302. (Lecture 2 hours, Lab 3 hours.)

### **General Biology for Majors I (4)**

BL 1401W

First part of a comprehensive and rigorous two semester introduction to modern biological science, providing the foundation for the biology major. Unifying principles, the cell, organization and diversity of life, evolution, ecology, molecular biology, metabolism, general physiology, reproduction, and development. Successful completion required for enrollment in BL 1402. (Lecture 3 hours, Lab 4 hours.)

### **General Biology for Majors II (4)**

BL 1402W

Second part of a comprehensive and rigorous two semester introduction to modern biological science, providing the foundation for the biology major. Unifying principles, the cell, organization and diversity of life, evolution, ecology, molecular biology, metabolism, general physiology, reproduction, and development. Successful completion required for enrollment in BL 2330, BL 2332, and BL 2233L. Prerequisite: BL 1401. (Lecture 3 hours, Lab 4 hours.)

### **Cell & Molecular Methods (2)**

BL 2233

Laboratory projects emphasize experimental approaches to cellular and molecular biology, including growth of bacteria and animal cells, analysis and purification of DNA and protein, light and fluorescence microscopy, digital video microscopy and quantitative image analysis. Other topics include DNA and protein database searches, conducting scientific literature searches and generating hypotheses for original research and scientific report writing. Prerequisites: Concurrent registration in BL 2330 or 2332. (Lab 4 hours)

### **Genetic Principles (3)**

BL 2330

Integrates classic Mendelian principles into a modern molecular genetic perspective. The chromosomal basis of inheritance, gene linkage, chromosome recombination and mapping, DNA structure and function, the genetic code, mutation, gene regulation, transcription, protein synthesis, bacterial and viral genetics, and the methods and uses of genetic engineering in studying genes, are some of the topics developed through a problem-solving approach. Includes one problem-solving session each week. Prerequisites: BL 1401, BL 1402, CH 1401, & CH 1402. (Lecture 3 hours)

### **Cell Biology (3)**

BL 2332

A study of the organization, function, and assembly of eukaryotic cell components, including proteins,

# BIOLOGY

membranes, membranous organelles and nuclear organization. Other topics emphasized will be control of gene expression and transcription, protein synthesis, metabolism, endocytosis, signal transduction, cytoskeletal dynamics, cell motility, the cell cycle and apoptosis. Prerequisites: BL 1401, BL 1402, CH 1401, & CH 1402. (Lecture 3 hours; problem-solving session 1 hour)

## **MCAT Preparation (0)**

BL 3000

In a partnership with Kaplan, this course will assist students in their preparation for the entrance exam required by medical schools. The Kaplan MCAT Course begins with a comprehensive work-up that includes a Personal Profile and two Diagnostic Tests. This information is utilized to provide comprehensive feedback that will not only identify the student's academic strengths and weaknesses, but also prescribe a study regimen that is tailored to build up the student's knowledge in weak subject areas, reinforce his knowledge in stronger areas and develop the higher order analytical thinking and problem solving skills necessary for success on the MCAT test.

## **Seminars in Biological Science (1)**

BL 3125

A series of weekly seminars on current research topics in Biological Sciences. Invited speakers are drawn from the scientific research community in San Antonio and across the nation. Students write a review article on a current biomedical research topic. Cannot be used to fulfill Biology minor or major requirements. Prerequisites: BL 2330, BL 2332, & BL 2233L or permission of the MARC Program Director.

## **Scientific Methodol & Analysis (1)**

BL 3130W

The student is introduced to the processes of analyzing and interpreting scientific literature. Course objectives are: 1) to increase the ability to analyze and interpret scientific articles; 2) to effectively use scientific journals; 3) to improve technical writing skills; 4) to understand various research methods; 4) to improve data analysis; 5) to develop and analyze hypotheses. Topics vary with the semester. Cannot be used to fulfill Biology minor or major requirements. Prerequisites: BL 2330, BL 2332, & BL 2233L or permission of MARC Program Director.

## **Medical Terminology (1)**

BL 3141

A course to teach an understanding of the specialized language of medicine designed for forensics majors and as an elective for future health care professionals. Topics to be covered will include the Latin and Greek origins of modern medical terms, acquisition of a vocabulary of root words and standard prefixes and suffixes, terms of pathophysiology, and development of an understanding of the traditional system of descriptive terms and eponyms. Students will learn to translate medical jargon to plain English and also to convert standard speech to appropriate medical vocabulary. Prerequisites: BL 1401 & 1402 (Lecture 1 hour)

## **Food & Nutrition I (3)**

BL 3311

Designed for non-biology majors, to fulfill the natural science requirement. Cannot be applied to Biology major or minor requirement. Principles of digestion, absorption, and energy; metabolism of essential

# BIOLOGY

nutrients and their sources, requirements and functions in human nutrition. Food selection to meet family needs, clinical point of view on nutritional deficiency and related problems. No prerequisite for BL 3311. BL 3311 is prerequisite for BL 3312. (Lecture 3 hours.)

## **Food & Nutrition II (3)**

BL 3312

Designed for non-biology majors, to fulfill the natural science requirement. Cannot be applied to Biology major or minor requirement. Principles of digestion, absorption, and energy; metabolism of essential nutrients and their sources, requirements and functions in human nutrition. Food selection to meet family needs, clinical point of view on nutritional deficiency and related problems. Prerequisite: BL 3311 (Lecture 3 hours).

## **Special Topics in Biology (4)**

BL 3400

Topics vary from semester to semester. May be retaken for additional credit when a different topic is offered. Prerequisites: BL 2330, BL 2332, & BL 2233L (Lecture 3 hours; Lab 4 hours.)

## **Anatomy (4)**

BL 3420W

Fundamentals of mammalian structure and form, illustrated by organ systems. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours, Lab 4 hours.)

## **Embryology (4)**

BL 3422

Fundamentals of vertebrate embryological development with emphasis on mammalian and especially human development. This course also includes selected topics in human teratology. Prerequisites: BL 2330, BL 2332, & BL 2233. (Lecture 3 hours, Lab 4 hours.)

## **Comparative Anatomy (4)**

BL 3424

A comparative survey of the anatomy of vertebrates in an evolutionary context. All of the major anatomical systems are examined including the skeletal, muscular, circulatory, respiratory, digestive, neurological, and urogenital systems. A large component of this course is the laboratory section, which is dissection-intensive. Additional lecture topics covered include evolution, phylogenetic systematics, and evolutionary development (evo-devo). Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **General Physiology (4)**

BL 3430W

A study of the fundamental mechanisms which regulate the bodies of all animals. The study includes the normal functions of organs and systems, such as transport, respiratory, digestive, excretory, neural, reproductive and hormonal systems. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Endocrinology (4)**

BL 3432W

# BIOLOGY

A study of the physiological mechanisms of endocrine function. Topics to be covered will include the molecular structure of hormones, cellular mechanisms of production and response to hormones, neuroendocrinology, and the coordination of bodily function via endocrine factors. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Comparative Physiology (4)**

BL 3434W

Study of the evolution and adaptation of physiological systems in all types of animals including vertebrates and invertebrates. Topics will include physiological processes such as: digestion, metabolism, thermoregulation, locomotion, circulation, osmoregulation, excretion, reproduction, and sensory systems. Emphasis will be placed upon the comparative aspects of physiological systems and upon physiological ecology (the study of physiological adaptations to specific environments) and evolutionary physiology (the study of how physiological traits change over time). This is a writing intensive course. Laboratory experiments will regularly involve live animals and are designed develop critical research skills including, experimental design, biostatistics, graphical analyses, critical-thinking, and effective oral/written communication. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours, Lab 4 hours)

## **Neurophysiology (4)**

BL 3436

This course will investigate the functioning of the nervous system at the cellular and subcellular level. Topics to be discussed in lecture include: glial cell function; ionic mechanisms underlying electrical activity in nerve cells; the physiology of synapses; transduction and integration of sensory information; the analysis of nerve circuits; the specification of neuronal connections; trophic and plastic properties of nerve cells; and the relation of neuronal activity to behavior. The laboratory will incorporate modern neurobiological/neurophysiological techniques including: extracellular recording of action potentials; cell culture of nervous tissue; SDS- PAGE; immunoblotting; immunofluorescence microscopy; and cryo sectioning and staining of nervous tissue. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Toxicology (4)**

BL 3440

This course will examine the general principles underlying the effects of toxic substances on biological systems, including consideration of the history, scope and applications of toxicology, toxicant exposure, the mechanisms of toxic action, the disposition of toxicants, the mechanisms of biotransformation of xenobiotics, toxicokinetics and major types of toxicants. In addition, the effects of toxicants on specific organ systems and the underlying mechanisms will be examined. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Forensic Osteology (4)**

BL 3442

An examination of the human skeleton as it pertains to forensic science. Topics to be covered include introductory skeletal anatomy, pathology and biology of bone, and basic forensic techniques related to skeletal remains. The laboratory section will teach identification of isolated and fragmentary skeletal elements, and recognition of human skeletal elements versus skeletal remains from non-human vertebrates. Techniques for determining approximate age, gender, stature, and identifying different types

# BIOLOGY

of trauma to skeletal remains will be taught. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Histology (4)**

BL 3444

This course follows a cellular and differentiative approach aimed at understanding the microstructure and function of various animal tissues, organs and systems. Lectures are complemented by laboratory exercises and laboratory discussion designed to provide students with the skills necessary to study and analyze and correctly identify cells and tissues. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Adv. Nutrition & Metabolism (4)**

BL 3450

This course emphasizes a biochemical and clinical approach to studying nutrient utilization. It is designed to foster quantitative and critical thinking skills by developing an understanding of biochemical pathways; conditions and diseases that result from abnormalities in these pathways; and applications of nutrition knowledge in preventative medicine. Alternative and integrative approaches to disease prevention also are included. Prerequisites: BL 2330, BL 2332, & BL 2233.

## **Transmission Genetics (4)**

BL 3461W

Fundamental principles of Mendelian genetics. Emphasis on genetics research and problem-solving. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Evolutionary Biology (4)**

BL 3464W

Evolution is foundational to modern biological thought. Students will begin by examining physical, geological and biological evidence for the process of evolution and the historical foundations of evolutionary theory. They will continue to develop their understanding of the mechanisms of evolution using population genetics as a means to objectively observe evolutionary change. Students will then explore topics such as speciation, mass extinction, adaptive radiation, molecular evolution, systematics, disease, conservation biology and evo- devo. The laboratory will include hands-on experimental activities, computer simulations and discussion of primary literature. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Immunology (4)**

BL 3472

The course will provide students with a strong foundation in the theory and techniques of modern immunology. The main emphasis of the course will be the role of the human immune system in defense against microbial pathogens. Some of the areas to be studied in-depth include innate immunity, cellular interactions in the immune responses, antigen capture and presentation, antibodies and humoral immunity, cell mediated immunity, self and non-self discrimination, immunization and immune disorders. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Microbiology (4)**

BL 3481

# BIOLOGY

Students should obtain a strong understanding of modern microbiology and the techniques used to identify and safely study microorganisms (primarily bacteria). Some of the areas to be studied include the history of microbiology, structure and function of prokaryotic and eukaryotic microbes, evolution and taxonomy of microbes, metabolism, microbial growth and factors controlling growth, microbial genetics, and immunology. Other topics include the central role microbes play in human health, biotechnology and Earth's ecology. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Developmental Biology (4)**

BL 3490W

Building a multicellular organism from a single, genetically unique cell involves reading and interpreting the genetic "blueprint" as well as the coordination of many complex events. Students will study the mechanisms that underlie the processes of fertilization, pattern formation, morphogenesis, organogenesis and cellular differentiation at the molecular, cellular and organismal levels, with a particular emphasis on animals. The evolution of these developmental mechanisms will be discussed and will serve as a unifying theme in the course. The experimental basis for current models of development will be highlighted in both the lecture and laboratory experiences. The weekly laboratory will incorporate both descriptive and experimental techniques, as well as discussion of primary literature. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Molecular Biology (4)**

BL 3495W

Molecular Genetics of Prokaryotes. Topics can include: structure of the macro molecules protein and DNA, replication of DNA, protein synthesis (transcription and translation), gene pair, mutagenesis, regulation of geneaction, bacteriophages, plasmids, transposable elements, recombinant DNA techniques and genetic engineering. Emphasis on problem solving and research. Prerequisites: BL 2330, BL 2332, BL 2233L, CH 3411 and completion of or concurrent registration in CH3412. (Lecture 3 hours; Lab 4 hours.)

## **Mechanisms of Disease (4)**

BL 4440W

This course will examine the biochemical, molecular, and cellular basis of common, economically, and socially important human diseases. A mechanistic approach will allow for an understanding of how the disease develops and manifests itself, as well as an understanding of treatment approaches and current biomedical research. Topics to be covered include: genetic/inherited diseases, metabolic diseases, immunological disorders, infectious diseases, cancer, cardiovascular disease, obesity, diabetes, and aging. In the laboratory, students will gain an understanding of how modern methodologies, that are based on basic biochemical, molecular, and cellular principles, are used for the detection, treatment, and research of disease. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

## **Biochemistry I (4)**

BL 4451

Study of the processes of life at the molecular level. The physiochemical properties of the biologically important molecules and macromolecules is presented with the goal of understanding their structure vs. biological activity relationships. Major topics include the structures of metabolites, macromolecules, bioenergetics, molecular interactions and reactivities, and an introduction to catalysis by enzymes. Prerequisites: BL 2330, BL 2332, BL 2233L, CH 3411, CH 3412 (lecture 3 hours; Lab 4 hours)

# BIOLOGY

## **Biochemistry II (4)**

BL 4452

Study of the processes of life at the molecular level. The physiochemical properties of the biologically important molecules and macromolecules is presented with the goal of understanding their structure vs. biological activity relationships. Major topics include bioenergetics, protein dynamics, enzyme mechanisms and their regulation, metabolism, and the integration and regulation of metabolic processes between pathways and between tissues. Prerequisites: BL 2330, BL 2332, BL 2233L, CH 3411, CH 3412 (lecture 3 hours; Lab 4 hours).

## **Medical Microbiology (4)**

BL 4481

A study of microbial pathogenesis focusing on selected medically important microorganisms (bacteria and protozoa) and viruses. Special emphasis will be placed on developing a modern understanding of host-microbe interaction and contemporary public health concerns. Areas to be studied include strategies microorganisms use to evade host immunological defenses and cause damage to the host. In the laboratory, students will employ biochemical, immunological and molecular methods in the identification of microorganisms. Prerequisites: BL 2330, BL 2332, BL 2233L, & BL 3481. (Lecture 3 hours; Lab 4 hours)

## **Genes and Genomes (4)**

BL 4497W

This course will provide students with a strong background in the theory and techniques of modern molecular genetics-a field that impacts virtually all areas of biology and medicine. An emphasis will be placed on understanding the evidence for critical concepts, including gene regulation, genetic engineering of organisms (recombinant DNA), genomics, advances in molecular medicine and DNA forensic science ("DNA fingerprinting"). Technical skills will be developed by utilizing modern techniques, including gel electrophoresis, restriction enzymes, PCR, DNA cloning, gene expression, recombinant protein purification and DNA sequencing utilizing computer-aided analysis of sequence data. Prerequisites: BL 2330, BL 2332, & BL 2233L. (Lecture 3 hours; Lab 4 hours)

# CHEMISTRY

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Chemistry

## Department Chair

Michael D. Losiewicz, Ph.D. [mlosiewicz@stmarytx.edu](mailto:mlosiewicz@stmarytx.edu)

## Description of Program/Major

The Chemistry and Biochemistry majors at St. Mary's University provide excellent preparation for graduate school, professional school, or entering a career in industry. The degree programs offered include the B.S. in Chemistry, B.A. in Chemistry, B.S. in Chemistry with Biochemistry Emphasis, B.S. in Biochemistry, B.S. in Forensic Science with Chemistry Option, and also a major in Chemistry with Secondary Teaching Certification. Our programs place a strong emphasis on critical problem solving. Students learn to work as part of a laboratory team yet also develop the ability to work independently. The Chemistry and Biochemistry programs promote versatility and prepare students for a wide range of options after graduation. The programs stress not only the fundamentals of chemistry, but the development of the intellectual skills necessary to apply them. The department offers small class sizes, close interaction with the faculty and a variety of tutoring options.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3



# CHEMISTRY

SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# CHEMISTRY

St. Mary's University  
BA Chemistry (CH) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
Fall		Hr	Spring		Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	Foreign Language <sup>6</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	CH 1401 General Chemistry I	4	___	EN 13XX Rhetoric & Composition <sup>2</sup>	3
___	MT 1411 College Algebra & Trigonometry	4	___	Foreign Language <sup>6</sup>	3
___	ND 0101 Personal & Academic Development	0	___	CH 1402 General Chemistry II	4
Total		14	Total		16
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	CH 3411 Organic Chemistry I	4	___	CH 3412 Organic Chemistry II	4
___	MT 2412 Univariate Calculus I	4	___	MT 2413 Univariate Calculus II	4
___	PY 1401 General Physics I	4	___	PY 1402 General Physics II	4
Total		15	Total		15
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics	3	___	SMC 2302 Foundations of Practice: Civic	3
___	Social Science/History <sup>3</sup>	3	___	Engagement & Social Action	
___	Speech/Communication <sup>1</sup>	3	___	SMC 2303 Foundation of Practice: Fine Arts &	3
___	CH 3423 Analytical Chemistry	4	___	Creative Process	
___	Elective	3	___	CH3424 Instrumental Analysis	4
			___	Elective	3
			___	Elective	3
Total		16	Total		16
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature	3	___	SMC 4301 Capstone Seminar: Prospects for	3
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	Community and Civilization	
___	CH3433 Physical Chemistry I	4	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	Elective	3	___	CH 3434 Physical Chemistry II	4
___	Elective	3	___	Elective	3
Total		16	Total		13

Total Hours 121

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year: Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied: Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

The advanced Chemistry and advanced Physics Electives may be selected from any junior and senior level science courses.

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing CH 1401 and CH 1402 with a grade of "C" or higher.

# CHEMISTRY

St. Mary's University  
BA Chemistry (CH) Degree Plan – 2010  
121 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## School of Science, Engineering, and Technology Specific Core (21 Hours)

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## BA Chemistry Major Courses (52 hours)

__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ CH 3411 – Organic Chemistry I	4
__ CH 3412 – Organic Chemistry II	4
__ CH 3423 – Analytical Chemistry	4
__ CH 3424 – Instrumental Analysis	4
__ CH 3433 – Physical Chemistry I	4
__ CH 3434 – Physical Chemistry II	4
__ MT 1411 – College Algebra & Trigonometry	4
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ PY 1401 – General Physics I	4
__ PY 1402 – General Physics II	4

## Electives (18 hours)

__ Electives - An elective can be any course taken from any discipline.	18
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## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be fulfilled by successfully completing CH 1401 and CH 1402 with a **grade of "C" or higher**.

# CHEMISTRY

St. Mary's University

BS Chemistry (CH) with Required Minor (Physics Shown) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	Foreign Language <sup>6</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	CH 1401 General Chemistry I	4	___	EN 13XX Rhetoric & Composition <sup>2</sup>	3
___	MT1411 Pre-Calculus	4	___	Foreign Language <sup>6</sup>	3
___	ND 0101 Personal & Academic Development	0	___	CH 1402 General Chemistry II	4
	Total	14		Total	16
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	CH 3411 Organic Chemistry I	4	___	CH 3412 Organic Chemistry II	4
___	MT 2412 Univariate Calculus I	4	___	MT 2413 Univariate Calculus II	4
___	PY 1404 Mechanics, Heat Acoustics	4	___	PY 2404 Electricity, Magnetism, Optics	4
	Total	15		Total	15
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics	3	___	SMC 2302 Foundations of Practice: Civic	3
___	Speech/Communication <sup>1</sup>	3	___	Engagement & Social Action	
___	Social Science/History <sup>3</sup>	3	___	SMC 2303 Foundation of Practice: Fine Arts &	3
___	CH 3423 Analytical Chemistry	4	___	Creative Process	
___	PY 3101 Atomic Physics Lab	1	___	CH 3424 Instrumental Analysis	4
___	PY 3301 Atomic Physics	3	___	Advanced Physics Course	4
	Total	17		Total	14
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature	3	___	SMC 4301 Capstone Seminar: Prospects for	3
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	Community and Civilization	
___	CH 3433 Physical Chemistry I	4	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	Advanced Chemistry Course	4	___	CH 3434 Physical Chemistry II	4
___	Advanced Physics Course	4	___	Advanced Chemistry Course	4
			___	Elective	2
	Total	18		Total	16

Total Hours 122

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year: Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied: Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

The advanced Chemistry and advanced Physics electives may be selected from any junior and senior level science courses.

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing CH 1401 and CH 1402 with a grade of "C" or higher.

# CHEMISTRY

St. Mary's University  
BS Chemistry (CH) with Required Minor (Physics Shown) Degree Plan – 2010  
125 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric (grade of <b>"C"</b> or better) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## **BS Chemistry with Physics Minor Courses (72 hours)**

__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ CH 3411 – Organic Chemistry I	4
__ CH 3412 – Organic Chemistry II	4
__ CH 3423 – Analytical Chemistry	4
__ CH 3424 – Instrumental Analysis	4
__ CH 3433 – Physical Chemistry I	4
__ CH 3434 – Physical Chemistry II	4
__ MT 1411 – College Algebra & Trigonometry	4
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4
__ PY 3101 – Atomic Physics Lab	1
__ PY 3301 – Atomic Physics	3
__ Advanced Chemistry course	4
__ Advanced Chemistry course	4
__ Advanced Physics course	4
__ Advanced Physics course	4

## **Electives (2 hours)**

__ Electives - An elective can be any course taken from any discipline.	2
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing CH 1401 and CH 1402 with a grade of **"C"** or higher.

# CHEMISTRY

St. Mary's University

BS Chemistry (CH) Biochemistry Emphasis Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	BL 1401 General Biology I	4	___	SMC 1312 Foundations of Reflection: Nature	3
___	CH 1401 General Chemistry I	4	___	EN 13XX Rhetoric & Composition <sup>2</sup>	3
___	MT 1411 College Algebra & Trigonometry	4	___	BL 1402 General Biology II	4
___	ND 0101 Personal & Academic Development	0	___	CH 1402 General Chemistry II	4
	Total	15		Total	17
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	Foreign Language <sup>6</sup>	3	___	Foreign Language <sup>6</sup>	3
___	CH 3411 Organic Chemistry I	4	___	CH 3412 Organic Chemistry II	4
___	MT 2412 Univariate Calculus I	4	___	MT 2413 Univariate Calculus II	4
___	PY 1404 Mechanics, Heat Acoustics	4	___	PY 2404 Electricity, Magnetism, Optics	4
	Total	18		Total	18
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics	3	___	SMC 2302 Foundations of Practice: Civic	3
___	Social Science/History <sup>3</sup>	3	___	Engagement & Social Action	
___	CH 3423 Analytical Chemistry	4	___	SMC 2303 Foundation of Practice: Fine Arts &	3
___	CH 4451 Biochemistry I	4	___	Creative Process	
___	Advanced Biology Elective *	4	___	Speech/Communication <sup>1</sup>	3
			___	CH3424 Instrumental Analysis	4
			___	CH 4452 Biochemistry II	4
	Total	18		Total	17
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature	3	___	SMC 4301 Capstone Seminar: Prospects for	3
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	Community and Civilization	
___	CH3433 Physical Chemistry I	4	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	Advanced Chemistry Elective *	4	___	CH 3434 Physical Chemistry II	4
			___	Advanced Chemistry/Biochemistry Elective *	4
	Total	14		Total	14

Total Hours 131

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

The advanced Chemistry and advanced Biochemistry Electives may be selected from any junior and senior level science courses.

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing CH 1401 and Ch 1402 with a grade of "C" or higher.

# CHEMISTRY

St. Mary's University  
BS Chemistry (CH) Biochemistry Emphasis Degree Plan – 2010  
131 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## St. Mary's University Core (30 Hours)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## School of Science, Engineering, and Technology Specific Core (21 Hours)

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## BS Chemistry Major with Biochemistry Emphasis Courses (80 hours)

__ BL 1401 – General Biology I	4
__ BL 1402 – General Biology II	4
__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ CH 3411 – Organic Chemistry I	4
__ CH 3412 – Organic Chemistry II	4
__ CH 3423 – Analytical Chemistry	4
__ CH 3424 – Instrumental Analysis	4
__ CH 3433 – Physical Chemistry I	4
__ CH 3434 – Physical Chemistry II	4
__ CH 4451 – Biochemistry I	4
__ CH 4452 – Biochemistry II	4
__ MT 1411 – College Algebra & Trigonometry	4
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ PY 3101 – Atomic Physics Lab	1
__ PY 3301 – Atomic Physics	3
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4
__ Advanced Chemistry course	4
__ Advanced Chemistry/Biochemistry course	4

## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be fulfilled by successfully completing CH 1401 and Ch 1402 with a grade of "C" or higher.

# CHEMISTRY

## Department Courses and Descriptions

### **Preparatory Chemistry (3)**

CH 1303

This course is designed for students with inadequate background for CH1401. Manipulative skills and basic concepts requiring problem solving will be stressed. Not accepted in lieu of CH1401,1402. This course satisfies the general education requirement.

### **Chem Concepts & Applications (3)**

CH 1304

This course is designed for the non-science major as part of one's general education. Chemistry is a fundamental science, some of its basic concepts will be developed as well as some of its applications to every day life. No prerequisites.

### **General Chemistry I (4)**

CH 1401

Fundamental principles; descriptive chemistry of more important elements; brief study of qualitative analysis by semimicro methods. Prerequisite: Approval of Instructor based on the Toledo Chemistry Placement Test performance and other relevant factors. This course may also be used to fulfill the general education requirement. Prerequisite for ALL of the following courses. (Lecture 3 hours; Lab 4 hours.)

### **General Chemistry II (4)**

CH 1402

Fundamental principles; descriptive chemistry of more important elements; brief study of qualitative analysis by semimicro methods. Prerequisite: Approval of Instructor based on the Toledo Chemistry Placement Test performance and other relevant factors. This course may also be used to fulfill the general education requirement. Prerequisite for ALL of the following courses. (Lecture 3 hours; Lab 4 hours.)

### **Intro to Organic & Biochem (4)**

CH 1404

This course is designed to provide a general overview of these two specific areas of chemistry for non-majors. It will provide the general basics of organic chemistry including basic carbon chemistry, nomenclature, structures of organic compounds, chemical characteristics and function, reactions, and mechanisms. This will provide the background necessary to study the concepts of organic chemistry that apply to the structure and function of biological macro molecules. Topics in this course will cover the main biological macro molecules of proteins, nucleic acids, carbohydrates, and lipids, and their role in cellular metabolism, states of disease, and drug applications. Upon completion of this course, students should be able to demonstrate an understanding of fundamental chemical concepts needed to pursue studies in related professional fields. Prerequisite: CH 1401. (Lecture 3 hours; Lab 4 hours.)

### **Organic Chemistry I (4)**

CH 3411

The study of the compounds of carbon. The major functional groups are examined on their basis of the physical and chemical properties. Fundamental theories of bonding, structures, mechanisms, synthesis, and spectroscopy are topics covered in the organic chemistry curriculum. (Lecture 3 hours; Lab 4 hours.)



# CHEMISTRY

## **Organic Chemistry II (4)**

CH 3412

The study of the compounds of carbon. The major functional groups are examined on their basis of the physical and chemical properties. Fundamental theories of bonding, structures, mechanisms, synthesis, and spectroscopy are topics covered in the organic chemistry curriculum. (Lecture 3 hours; Lab 4 hours.)

## **Analytical Chemistry (4)**

CH 3423

An introduction to traditional methods of chemical analysis, i.e. *wet* chemistry. Emphasis is on lab performance. Experiments cover volumetric, gravimetric colorimetric, potentiometric, and other techniques. (Lecture 3 hours; Lab 4 hours)

## **Instrumental Analysis (4)**

CH 3424

An introduction to chemical analysis via instrumentation. Emphasis is on lab performance. Instruments are spectroscopic and chromatographic. (Lecture 3 hours; Lab 4 hours)

## **Physical Chemistry I (4)**

CH 3433

An introduction to chemical thermodynamics and kinetics. Prerequisites: Calculus, CH 3423; PY1402 is recommended. (Lecture 3 hours; Lab 4 hours). The Lab is writing intensive.

## **Intermediate Physical Chem (4)**

CH 3434

An introduction to chemical analysis via instrumentation. Emphasis is on lab performance. Instruments are spectroscopic and chromatographic. (Lecture 3 hours; Lab 4 hours)

## **Toxicology (4)**

CH 3440

## **Seminar in Chemistry (1)**

CH 4100

Presentation and discussion of current research in the field of chemistry. (May be repeated for a maximum of 2 semester hours.) Prerequisite: Permission of Instructor.

## **Chemical Research (1)**

CH 4125

Practical literature and laboratory experience with an original problem in chemical research. (May be repeated for a maximum of 4 semester hours.) Prerequisite: Permission of the Instructor.

## **Spec. Topics Chemistry/Biochem (1)**

CH 4150

This advanced course introduces a field of chemistry that is of current interest in the chemistry community of today. Examples of possible topics are material sciences, polymer chemistry, chemical separations, and chemical spectroscopy. This course may be repeated only if the current topic is different

# CHEMISTRY

from any previous enrollment of that student. Prerequisite: Permission of Instructor.

## **Chemical Research (2)**

CH 4225

Practical literature and laboratory experience with an original problem in chemical research. (May be repeated for a maximum of 4 semester hours.) Prerequisite: Permission of the Instructor.

## **Spec. Topics Chemistry/Biochem (2)**

CH 4250

This advanced course introduces a field of chemistry that is of current interest in the chemistry community of today. Examples of possible topics are material sciences, polymer chemistry, chemical separations, and chemical spectroscopy. This course may be repeated only if the current topic is different from any previous enrollment of that student. Prerequisite: Permission of Instructor.

## **Intermediate Organic Chemistry (3)**

CH 4310

Elaboration and extension of fundamentals of Organic Chemistry. May be repeated when topics vary. Prerequisite: CH 3411, 3412.

## **Chemical Research (3)**

CH 4325

Practical literature and laboratory experience with an original problem in chemical research. (May be repeated for a maximum of 4 semester hours.) Prerequisite: Permission of the Instructor.

## **Chemical Thermodynamics (3)**

CH 4330

Introduction to the principles and chemical applications of thermodynamics for chemists and engineers. Prerequisite: CH 3433.

## **Advanced Inorganic Chemistry (3)**

CH 4340

A study of molecular symmetry, structure and bonding, inorganic solid state chemistry, solution chemistry, chemistry of the representative elements, transition metal chemistry, and organometallic chemistry. Prerequisite: CH 3412.

## **Spec. Topics Chemistry/Biochem (3)**

CH 4350

This advanced course introduces a field of chemistry that is of current interest in the chemistry community of today. Examples of possible topics are material sciences, polymer chemistry, chemical separations, and chemical spectroscopy. This course may be repeated only if the current topic is different from any previous enrollment of that student. Prerequisite: Permission of Instructor.

## **Biochem of Specialized Tissues (3)**

CH 4353

Biomolecular aspects of the structure and controlled functioning of specialized systems in prokaryotes and eukaryotes, highlighted by studies of the sensory and immune systems, muscle contraction/mobility

# CHEMISTRY

and membrane transport phenomena. Prerequisites: CH/BL4451 or concurrent registration.

## **Biochemistry of the Hormones (3)**

CH 4354

The biochemical basis of normal versus abnormal functioning of the hormonal control mechanisms in mammalian systems; this will include a detailed discussion of molecular mechanisms for hormonal control of the path ways of intermediary metabolism and of the absence/aberration of such regulatory processes evidenced in metabolic disease. Prerequisites: CH/BL4452 or concurrent registration.

## **Immunochemistry (3)**

CH 4355

The molecular basis of the normal operation of the vertebrate immune system and studies of aberrations of immune mechanisms in disease processes. The latter is exemplified by the biomolecular aspects of infectious diseases (caused by pathogenic microorganisms) autoimmune disorders, tissue damage, and cancer. Prerequisites: CH/BL 4451 or concurrent registration.

## **Enzyme Chemistry (3)**

CH 4356

The molecular architecture of enzymes and the dynamics of enzyme mediated catalysis. Topics include a classification of enzyme systems, enzyme kinetics, mechanisms of enzyme action and the regulation of the activity of enzymes. Prerequisites: CH/BL 4451.

## **Biochemistry I (4)**

CH 4451

Study of the processes of life at the molecular level. The physiochemical properties of the biologically important molecules and macromolecules is presented with the goal of understanding their structure vs. biological activity relationships. Major topics include the study of enzymes, metabolism, bioenergetics, and regulation of biochemical processes, membranes and molecular genetics. Prerequisites: CH 3411, 3412 (Lecture 3 hours; Lab 4 hours)

## **Biochemistry II (4)**

CH 4452

Study of the processes of life at the molecular level. The physiochemical properties of the biologically important molecules and macromolecules is presented with the goal of understanding their structure vs. biological activity relationships. Major topics include the study of enzymes, metabolism, bioenergetics, and regulation of biochemical processes, membranes and molecular genetics. Prerequisites: CH 3411, 3412 (Lecture 3 hours; Lab 4 hours)

# COMPUTER ENGINEERING

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Engineering

## Department Chair

Bahman Rezaie, Ph.D. [brezaie@stmarytx.edu](mailto:brezaie@stmarytx.edu)

## Description of Program/Major

Today, computers are used in all aspects of business, technology and education. They have become integral parts of automobiles, instrumentation for aeronautics and space exploration, medical devices, factory automation, artificial intelligence systems and telecommunications networks. Computer engineers gain their unique expertise from both the electrical engineering, and computer science disciplines.

The electrical engineering background integrates the theory and design of electronics hardware with the knowledge of electronic circuits and devices, digital logic, digital systems, microprocessors, embedded systems, hardware organization, and computer system architecture.

The computer science background includes software engineering, data structures, operating systems, database design, analysis and design of algorithms, and programming languages.

The computer engineering program at St. Mary's University successfully combines these two disciplines to prepare a new kind of engineer with a solid foundation that provides for the design of both electronic hardware and computer software.

The B.S. in Computer Engineering is accredited by the Engineering Accreditation Commission of ABET.

## Degree Requirements

### Core Curriculum (SMC)

St. Mary's University Core (30 Hours)

# COMPUTER ENGINEERING

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# COMPUTER ENGINEERING

St. Mary's University

BS Computer Engineering (CE) Degree Plan – ABET Accredited Program

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
	Fall	Hr		Spring	Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	EN 1311 Rhetoric & Composition <sup>2</sup>	3	___	EG 1301 Engineering Graphics & Design <sup>4</sup>	3
___	EG 1302 Programming for Engineers	3	___	EG 1305 Object Oriented Program & Design	3
___	MT 2412 Univariate Calculus I	4	___	MT 2413 Univariate Calculus II	4
___	PY1404 Mechanics, Heat, Acoustics	4	___	PY2404 Electricity, Magnetism, Optics	4
___	ND 0101 Personal & Academic Development	0	___		
	Total	17		Total	17
Second Year Courses					
___	CH 1401 General Chemistry I	4	___	SMC 1312 Foundations of Reflection: Nature	3
___	EG 2141 Logic Design Lab	1	___	SMC 2301 Foundations of Practice: Ethics	3
___	EG 2341 Logic Design	3	___	EG 2152 Circuit Analysis Lab	1
___	EG 2352 Circuit Analysis I	3	___	EG 2342 Data Structure & Algorithms	3
___	MT 3311 Differential Equations	3	___	EG 2353 Circuit Analysis II	3
___	MT 3323 Discrete Math	3	___	EG 2382 Digital Systems Design	3
	Total	17		Total	16
Third Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	EG 2307 Engineering Mechanics	3	___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
___	EG 3156 Electronics I Lab	1	___	CS 3340 Software Engineering	3
___	EG 3356 Electronics I	3	___	EG 3157 Electronics II Lab	1
___	EG 3363 Microprocessors I	3	___	EG 3357 Electronics II	3
___	EG3374 Computer Org & Architecture	3	___	EG 3364 Microprocessors II	3
	Total	16		Total	16
Fourth Year Courses					
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	SMC 4301 Capstone Seminar-Senior Design Project II	3
___	SMC 2304 Foundation of Practice: Literature	3	___	Advanced Theology <sup>5</sup>	3
___	EG 4362 Senior Design Project I <sup>1</sup>	3	___	CS 3350 Operating Systems	3
___	MT 4331 Probability and Statistics I	3	___	EG 3334 Engineering Economy <sup>3</sup>	3
___	Technical Elective	3	___	EG 4356 Computer Networking	3
	Total	15		Total	15

Total Hours 129

<sup>1</sup>Speech Requirement: EG 4362 Senior Design Project 1

<sup>2</sup>Rhetoric and Composition Requirement (Must be "C" or better): EN 1311 or EN 1313 (international students)

<sup>3</sup>Social Science Requirement: EG 3334 Engineering Economy

<sup>4</sup>Fine Arts Requirement: EG 1301 Engineering Graphics & Design

<sup>5</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Foreign Languages – Computer, Electrical, and Industrial Engineering majors are exempt from the foreign language requirement.

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

Technical Electives must be chosen from the following:

CS 3311 Compilers

CS 4325 Computer Graphics

CS 4320 Files and Database

MT 3324 Linear Algebra

EG 3392 Java and Applications

EG 4369 Control Systems

CS 3335 Survey of Programming Languages

CS 4315 Artificial Intelligence

MT 3315 Advanced Mathematics for Electrical Engineers

EG 3372 Signals & Systems

EG 4337 Computer Simulation

EG 4370 Communication Theory

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# COMPUTER ENGINEERING

St. Mary's University  
BS Computer Engineering (CE) Degree Plan – ABET Accredited Program – 2010  
129 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization (Senior Design Project II)	3

## School of Science, Engineering, and Technology Specific Core (15 Hours)

Foreign Languages – Computer, Electrical, and Industrial Engineering majors are exempt from the foreign language requirement.

__ <b>Composition and Rhetoric (grade of "C" or better)</b> – EN 1311, EN 1313 (for international students)	3
__ Fine Arts – EG 1301 Graphics Design	3
__ Social Science – EG 3334 Engineering Economy	3
__ Speech – EG 4362 Senior Design Project 1	3
__ Theology – Advanced Theology 33XX	3

## BS Computer Engineering Major Courses (84 hours)

**Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.**

__ CH 1401 – General Chemistry I	4
__ CS 3340 – Software Engineering	3
__ CS 3350 – Operating Systems	3
__ EG 1302 – Programming for Engineers	3
__ EG 1305 – Object Oriented Programming and Design	3
__ EG 2141 – Logic Design Lab	1
__ EG 2152 – Circuit Analysis Lab	1
__ EG 2307 – Engineering Mechanics	3
__ EG 2341 – Logic Design	3
__ EG 2342 – Data Structure and Algorithms	3
__ EG 2352 – Circuit Analysis I	3
__ EG 2353 – Circuit Analysis II	3
__ EG 2382 – Digital Systems Design	3
__ EG 3156 – Electronics I Lab	1
__ EG 3157 – Electronics II Lab	1
__ EG 3356 – Electronics I	3
__ EG 3357 – Electronics II	3
__ EG 3363 – Microprocessors I	3
__ EG 3364 – Microprocessors II	3
__ EG 3374 – Computer Organization and Architecture	3
__ EG 4356 – Computer Networking	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3311 – Differential Equations	3
__ MT 3323 – Discrete Math	3
__ MT 4331 – Probability and Statistics I	3
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4
__ Technical Elective (See previous page for selections)	3

## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# COMPUTER ENGINEERING

## Department Courses and Descriptions

### **Intro to Computer/Ele E I (1)**

EG 1101

Introduction to electrical/computer engineering consist of two 1-hour course sequence directed at incoming freshmen. The two courses focus on MATLAB and its application to engineering problems. In the first course, EG1101, the basic MATLAB features are covered. This includes MATLAB help utility, MATLAB environment and desktop, all MATLAB windows and their functionalities, solving simple problems using MATLAB, preliminary graphing capabilities of MATLAB, m-file development, debugging m-files with MATLAB, solving more sophisticated engineering problems with MATLAB. Pre-requisite: none.

### **Intro to Computer/ EE II (1)**

EG 1102

Introduction to electrical/computer engineering consist of two 1-hour course sequence directed at incoming freshmen. The two courses focus on MATLAB and its application to engineering problems. In the second course, EG1102, the more advanced MATLAB features are covered. This includes m-file and its debugging features, flow control in MATLAB, more advanced usage of MATLAB help utilities, more advanced MATLAB commands, MATLAB toolboxes, solving advanced engineering and scientific problems using MATLAB, more advanced graphing capabilities of MATLAB. Pre-requisite: EG 1101.

### **Engineering Graphics and Design (3)**

EG 1301

Introduction to drawing instruments, lettering, and sketching. Work drawings: pictorials, orthographic projection, dimensioning, sections, and auxiliary views. Descriptive geometry: points, lines, planes, revolutions, intersections, etc. Use of Computer Aided Design (CAD) software. Introduction to engineering design. Several design projects are developed. Prerequisite: none.

### **Programming for Engineers (3)**

EG 1302

The goal of this course is to provide students with a working knowledge of C programming language as defined by the ANSI standard. This class does not just focus on the C language syntax and program constructs. It will also emphasize good programming habits in developing a well-structured code. The concepts that will be presented in this course include: programming environment; basic C program structure; variables, constants and operators; looping with for, while, and do while statements; decision-making constructs (if, if/else, switch, and conditional expression statements); using and writing functions; using arrays, pointers and combination thereof; string operations/functions; performing file I/O; using the preprocessor directives; and using modular development methodology. Prerequisite: none.

### **Object-Oriented Program & Desig (3)**

EG 1305

Introduction to object-oriented programming, classes, objects, data members (class attributes), methods (member functions or class behavior), data abstraction, and encapsulation. Software reuse. Constructors, destructors, and inheritance. Operator overloading. Virtual functions and polymorphism. Stream Input/Output. The preprocessor. Object-oriented analysis and design methodologies and their role in the software development process. The Unified Modeling Language (UML) as a design and development



# COMPUTER ENGINEERING

tool. Extensive use of OOP programming is required. A class project is included requiring use of the UML to develop a sizable software application. A professional oral presentation and a well-written report are required. Prerequisite: EG 1302 or EG 1304 or CS 1410.

## **Engineering Seminars (0)**

EG 2010

The engineering seminars provides students exposure to outside speakers and a review of recent developments in science and engineering. Prerequisite: none.

## **Logic Design Laboratory (1)**

EG 2141

This lab introduces the basic principles of digital electronic design using standard TTL devices. Experiments illustrate the principles learned in the Fundamentals of Logic Design (EG 2341) class. The first part of this laboratory focuses on the design of combinational networks. This includes the basic operation of various logic gates; verification of truth tables; minimization of logic functions; realization of digital functions using multiple stage networks, decoders, multiplexer, and read-only memory. The second part of this lab emphasizes the design of sequential network. Here, students are introduced to various types of flip-flops, counters; design of digital circuits using Finite State Machines. Co-requisite: EG 2341.

## **Circuit Analysis Laboratory (1)**

EG 2152

This lab is geared towards students who are taking electrical engineering laboratory for the first time. The lab is divided into two parts: First part covers introductory concepts and basic measurements in electrical circuits. Second part is dedicated to circuit theorems; transient response of circuits composed of resistors, capacitors, and inductors; AC steady state; frequency response (PHASORS); and the characteristics of operational amplifiers in electrical circuits. Co-requisite: EG 2353.

## **Digital Systems Design Lab (1)**

EG 2181

Experiments illustrate the principles learned in the Digital Systems Design (EG 2382) class. The first part of this laboratory focuses on the design of sequential networks using 7400 series TTL and CMOS devices. This includes comparing the electric characteristics; drive capability and fan-out of TTL and CMOS devices; Tri-state buffers, and Open-collector outputs. The second part of this laboratory emphasizes the more recent digital systems design techniques that use modern CAD tools that support Hardware Design Languages such as VHDL. Many laboratory experiments introduce students to various VHDL sequential and concurrent constructs. Students learn how to simulate, verify, and synthesize their designs using state-of-the-art CAD tools. Prerequisites: EG 2341 and EG 2141W; Co-requisite: EG 2382.

## **High Technology & Society (3)**

EG 2300

Exploration of the social, economic, and political impact of modern science and technology. The ethical nature of scientific research and technological development. Exploration of recent scientific discoveries and technological applications. This course may be counted for physical science credit for social science majors and social science credit for SET majors.

# COMPUTER ENGINEERING

## **Principles of Materials Scienc (3)**

EG 2306

A study of the atomic and crystalline structure of solids including the theory of X-ray diffraction, solid solutions, diffusion, and phase transformations. The behavior of matters based on their mechanical, electrical, thermal, magnetic, and optical properties. Point defects, dislocation theory. Prerequisites: CH 1401, PY 2404, MT 2412.

## **Engineering Mechanics (3)**

EG 2307

Fundamentals of statics, vector methods, concentrated and distributed force systems, methods of moments for extended rigid structures, static equilibrium of structures. Prerequisites: PY 1404, MT 2412.

## **Strength of Materials (3)**

EG 2308

Mechanical properties of materials: normal and shear stress, normal and shear strain. Separate treatments of axial load, torsion, and bending. Bending and shearing stresses in beams. Deflection in homogeneous beams. Design of members by strength criteria. Prerequisite: EG 2307, MT2413.

## **Fluid Mechanics (3)**

EG 2309

Forces and energy generated by liquids and gasses at rest and in motion. Fundamental laws of fluid behavior: conservation of mass, energy, and momentum. Differential and finite control volume approaches for flow analysis. Steady, incompressible flow. Prerequisites: MT 3311, PY 2404, EG 2307.

## **Human Computer Interaction (3)**

EG 2310

The goal of this course is to teach the fundamentals of human-computer interface in software design and development. Students learn to design, implement and evaluate effective and usable graphical computer interfaces. Design of windows, menus, and commands. Voice and natural language I/O. Response time and feedback. Color, icons, and sound. Students work on individual and team projects to de sign, implement and evaluate computer interfaces. Prerequisite: EG1302 or EG1304 or CS 1410.

## **Software Requirement Eng (3)**

EG 2311

This course provides an introduction to the fundamentals of software requirements management. Topics covered include requirements gathering, system modeling and software specifications. The major emphasis is on using a variety of modeling tools and techniques to define a system specification. Languages and models for representing requirements. Analysis and valida tion techniques, including need, goal, and use case analysis. Students participate in a group project on software requirements. Prerequisite: EG 1302 or EG 1304 or CS 1410.

## **Work Design & Product Measure (3)**

EG 2322

Industrial engineering tools and concepts for engineering problem solving. Work design and methods engineering. Work measurement and work sampling, productivity measurement, incentives, standard time techniques. In-class labs and design projects are required. Prerequisites: none.

# COMPUTER ENGINEERING

## **Industrial Automation & Control (3)**

EG 2325

Logic-structured and icon-driven programming. Introduction to industrial field devices for control and automation. Number systems and codes. Digital and analogue signals. Interposing relay control. Timers, counters, and data compare instructions. In-class labs and design projects are required. Prerequisite: EG1302, EG1304, CS1410, or CS 1411.

## **Fundamentals of Logic Design (3)**

EG 2341

The first half of this course focuses on combinational network design. This includes the number systems and conversion; Boolean algebra; minimization of switching functions using Karnaugh maps; multi-level gate networks; multi-output networks; realizing Boolean functions using multiplexers, decoders, read-only memories, and programmable logic devices. The second half of this course focuses on the analysis and the design of sequential network. Topics covered in this part of the course include flip-flops; designing counters using different type of flip-flops; analysis of sequential networks; derivation of state graphs and tables; introduction to Finite State Machines; minimization of state tables; guidelines for state assignment; derivation of flip-flop input equations, and realization of sequential networks. Co-requisite: EG 2141W.

## **Data Structures & Algorithms (3)**

EG 2342

This course provides an introduction to the design and analysis of computer data structures and algorithms, focusing in particular on techniques for achieving high performance software in computer systems. Students will learn the necessary mathematical background to carry out algorithm analysis, such as time and space complexity, worst-case and average-case analysis, tractability & intractability, and design techniques. It discusses recursion and recurrence relations, asymptotic notations, basic data structures, dynamic dictionaries, balanced trees, priority queues, and graphs. The specific data structures which will be discussed in class include linked lists, stack, heaps, self-organizing lists, binary search trees, hash tables, AVL trees, red-black trees, balanced trees, leftist trees, minimum spanning trees, and others. Prerequisite: EG1302 or EG1304

## **Circuit Analysis I (3)**

EG 2352

Basic circuit elements and models; resistive circuits; circuit theorems; loop and nodal analysis of resistive networks; techniques of analysis of operational amplifiers; analysis of circuits with energy storage elements (capacitors and inductors); natural and step response of RL; RC; and RLC circuits. Prerequisite: PY2404. Co-requisite: MT3311.

## **Circuit Analysis II (3)**

EG 2353

The goal of this course is to provide students with a working knowledge of phasor diagrams; sinusoidal steady-state power analysis and complex load matching; series and parallel resonance; Laplace transform and its applications in circuit analysis: the step function, the impulse function, inverse transforms, initial and final value theorems, and circuit analysis in the s-domain. Transfer functions and Bode diagrams are also included. Prerequisites: EG 2352, MT 3311.

# COMPUTER ENGINEERING

## **Digital Systems Design (3)**

EG 2382

The first part of this course presents a quick review of sequential network design concepts as presented in the pre-requisite course on Fundamentals of Logic Design (EG 2341); iterative networks; integrated circuit logic families and their electric characteristics; drive capability and fan-out of TTL and CMOS devices; Tri-state buffers, and Open-collector outputs. Mixing logic families; Hazard detection and prevention; designing digital systems using Programmable Logic Devices (PLD); digital systems design using Algorithmic State Machine (ASM) charts. The second part of this course focuses on the design of combinational and sequential networks using VHDL. Students will learn how to use the top-down design techniques to analyze, design, simulate, verify, and synthesize complex digital circuits using modern CAD tools. Prerequisites: EG 2341 and EG 2141W; Co-requisite: EG 2181W.

## **Artificial Intelligence (3)**

EG 2390

Introduction to Artificial Intelligence. Search techniques, knowledge representation, game playing, predicate logic. Knowledge representation using rules, expert systems, neural networks, and genetic algorithms. Coverage of an AI-specific programming language and/or AI integrated software. Prerequisite: EG 1304 or EG 1302.

## **Expert Systems and Applications (3)**

EG 2393

Fundamentals of expert systems. Knowledge representation using production rules. Knowledge acquisition and development of a knowledge base. Backward and forward chaining. Uncertainty. Development, testing, and validation of expert systems. Prerequisite: EG1302 or EG 1304.

## **Circuits and Systems Lab (1)**

EG 3145

Basis of electrical measurements and technical report writing. Experimental verification and applications of circuit theorems and laws including the current divider, the voltage divider, and Thevenin's theorem; the application of the cathode ray oscilloscope; the analysis of the transient response of RC and RL circuits; applications of operational amplifiers in the design of summing, amplification, and comparator circuits; design of diode-clamping circuits; implementation and analysis of frequency response of filter circuits. This is a writing-intensive course. This course cannot be taken for credit by electrical engineering or computer engineering majors. Prerequisite: EG 3345

## **Electronics I Lab (1)**

EG 3156

DC circuits; the diode as a nonlinear device; the oscilloscope; RC circuits; RC filters; LC resonant circuit; rectifier; signal diodes; diode clamp; emitter follower; current source; common emitter amplifier; transistor as a switch; op-amp open-loop gain; inverting and non-inverting op-amps; op-amp follower and current source; summing amplifier; op-amp as an integrator, a differentiator, an active rectifier, and an active clamp; FET transistor; FET current source and source follower; FET as a voltage-controlled resistance; amplitude modulation and AM radio; input and output characteristics of integrated gates: TTL and CMOS. Pre-requisite: EG 2152W; corequisite: EG 3356.

# COMPUTER ENGINEERING

## **Electronics II Lab (1)**

EG 3157

Flip-flops; counters; shift registers; the cascading 16-bit counter with added display and keypad; programmable divide-by-n counters; period meters; capacitance meters; memory; RAM; divide-by-3; memory-based state machines; the dynamic diode curve tracer; the grounded emitter amplifier; current sources; the Ebers-Moll model; push-pull amplifiers; differential amplifiers; the bootstrap circuit; the Miller effect; the Darlington pair; the super beta; the analog switch and its applications: chopper circuits; sample-and-hold circuits; switched capacitor filters; voltage inverter circuits; A/D and D/A converters; the phase-locked loop circuit; the frequency multiplier. Prerequisite: EG 3156W; Co-requisite: EG 3357.

## **Human Factors (3)**

EG 3316

Integration of the human component into the design, development, and evaluation of human-machine systems. Ergonomic and human factors research methodology. A term project featuring the design of a human-machine system from an ergonomic/human factors perspective is required.

## **Industrial Statistics (3)**

EG 3322

Introduction to probability and statistics; descriptive statistics; random variables; sampling; distributions; hypothesis testing; linear regression and correlation; goodness-of-fit tests; design of experiments and analysis of variance. Pre-requisite: MT2413

## **Lean Production Systems (3)**

EG 3333

Principles and methods of analysis and design of service, production, and manufacturing facilities. Plant layout. Assembly line balancing. Material handling. Lean and just-in-time. Forecasting. Inventory control. Aggregate planning. Materials requirement planning. Theory of constraints. Prerequisite: MT 2413.

## **Engineering Economy (3)**

EG 3334

Overview of finance/accounting concepts. Fundamental principles and methods for economic analysis of technical alternatives leading to decision making under deterministic and uncertain conditions. The effects of interest, taxation, depreciation, and inflation. Prerequisite: MT 2413 Calculus II.

## **Optimization (3)**

EG 3335

Introduction to mathematical programming. Linear program formulations. Optimization of linear programs using the graphical method, simplex method and special implementations of the simplex method. Duality. Sensitivity analysis. Transportation and assignment problems. Introduction to integer programming. Integer program formulations. Co-requisite: MT 2413.

## **Applied Optimi. & Analysis (3)**

EG 3336

Introduction to network optimization. Network representation and solution algorithms for minimum spanning tree, shortest path, minimum cost network flow and maximum flow - minimum cut problems.

# COMPUTER ENGINEERING

Scheduling of projects using CPM/PERT. Formulation and solution of dynamic programming problems. Introduction to heuristics and meta-heuristics. Introduction to stochastic modeling. Markov chains, Chapman-Kolmogorov equations and classification of states. Introduction to queuing systems. Birth-death processes, queuing networks and queuing decision models. Prerequisites: EG 3332 or MT 4331.

## **Supply Chain Management (3)**

EG 3337

Fundamental concepts and theory for the treatment of the principles, models, and techniques for supply chain management planning, analysis, and design. Supply chain business processes, process metrics, and common, good and best practices in supply chain management. Multi-echelon inventory models, channel coordination, supply contracts and negotiations, supply chain disruptions/risk management, pricing, logistics network design, vehicle routing, reverse logistics, closed-loop supply chains, global manufacturing & distribution, supply chain profitability optimization. Decision making under uncertainty for optimal profitability in the context of global outsourcing, international logistics, and international trade treaties. Prerequisite: EG 3333

## **Circuits and Systems (3)**

EG 3345

An introduction to the theory and applications of electrical circuits, devices and systems; review of basic physics involving resistors, inductors, and capacitors; electrical units and measurements; analysis of dc circuits; analysis of the transient response to RL and RC switching circuits; introduction to ac circuit analysis; the frequency response; diodes, rectifiers and wave-shaping circuits; applications of operational amplifiers. This course may not be taken for credit by electrical engineering or computer engineering majors. Prerequisite: PY 2404; Co-requisite: MT 3311

## **Software Design & Archi (3)**

EG 3350

This course introduces basic concepts and principles about software design and software architecture. Study of design concepts and notations. Architecture, middleware architectures, design patterns, frameworks and components. Designing for qualities such as performance, security, reusability, reliability. Techniques for designing, building, and evaluating software architectures. Prerequisite: CS 3340 and EG 2311.

## **Software Project Management (3)**

EG 3351

This course introduces concepts deemed central to effective management of software projects. Software systems engineering, process management and control, and project planning and management. Using specifications and descriptions, making use of structured and object-oriented techniques, completing reviews and audits, confirming product development with planned verifications, and validations and testing. Management of expectations. Release and configuration management. Software process standards and process implementation. Software contracts and intellectual property. Prerequisite: CS 3340.

## **Software Qual Assurance & Test (3)**

EG 3352

This course provides an introduction to software quality assurance and testing. Quality assurance process and its role in software development. Measuring software quality and software quality standards. In

# COMPUTER ENGINEERING

spections and formal technical reviews. Testing, verification, and validation techniques. Black-box and white-box testing. The automation of software testing. A team-based software development project is required in which students apply learned techniques. Prerequisite: CS3340.

## **Electronics I (3)**

EG 3356

Physical properties of diodes and p-n junctions; Diode circuits; physical properties of Metal-Oxide Field Effect Transistors (MOSFET); amplification circuits using MOSFET; NMOS; PMOS and CMOS devices; physical properties of Junction Field Effect Transistors (JFET); electronic circuits using JFET; physical properties of Bipolar Junction Transistors (BJT); amplification circuits using BJT; switching circuits using cut off and saturation modes of BJT. Prerequisite: EG2352.

## **Electronics II (3)**

EG 3357

The second part of a two-semester course sequence, which focuses on analog electronic circuits. Differential and multi-stage amplifiers; feed back in amplifier circuits; frequency response of different amplifiers; the four basic feedback topologies in amplifiers; various output stages; power amplifiers; and the complete analysis of the 741 operational amplifier circuit. The MultiSIM circuit analyzer software package is heavily utilized. Prerequisite: EG 3356; co-requisite: EG 3157W.

## **Microprocessors I (3)**

EG 3363

This is the first part of a two-semester course sequence that is intended to familiarize students with the development of microcontroller-based products. The first goal of the course is to teach students the skills of assembly language programming in general and the HCS12 Motorola microcontroller in particular. The second goal of the course is to introduce and familiarize students with different architecture and hardware design in microcontrollers using HCS12 as a model. The course is accompanied by laboratory assignments throughout the semester. Prerequisites: EG 1302/04, EG 2341.

## **Microprocessors II (3)**

EG 3364

The second part of a two-semester course sequence is intended to familiarize students with the development of microcontroller-based products. Concepts covered in this course include interfacing; timing diagrams and synchronization for handshake purposes. The course utilizes all the onboard functionalities of the Mc9S12DP256 microcontroller such as the A/D converter; synchronous and asynchronous serial interfaces; a timer module with input capture, output compare, and pulse accumulator capabilities; PWM; controller area network (CAN); and a variety of input and output ports. The course includes six or seven practical data acquisition and control projects based on the HCS12 microcontroller. Pre-requisites: EG 3363.

## **Electromagnetic Theory (3)**

EG 3366

Review of vector analysis, complex vectors, applications of Stokes' theorem and the divergence theorem, Maxwell's equations, the Lorentz force law, Poynting's theorem, electrostatics, introduction to magnetostatics, Faraday's law, time-varying electromagnetic fields, propagation of time-harmonic plane waves, wave attenuation in conductive and dissipative media, dispersion. Introduction to transmission

# COMPUTER ENGINEERING

lines. Prerequisites: PY2404, MT3311, MT3315, EG2352. Co-requisite: EG2353

## **Semiconductor Devices (3)**

EG 3368

Review of quantum mechanics; introduction to crystallography; energy band and charge carriers; physical properties of the p-n junction; physical properties of diodes; physical behavior of Bipolar Junction Transistors (BJT) in active, saturation and cut-off modes. Prerequisites: EG3356 and senior standing.

## **Signals and Systems (3)**

EG 3372

Continuous signal and system modeling, properties of linear, time-independent systems, BIBO stability, response of continuous systems to periodic and non-periodic signals, the convolution integral, theory and applications of Fourier series and Fourier transforms, power spectrum of periodic signals, energy spectrum of non-periodic signals, modulation. Prerequisite: MT3311, EG2353.

## **Computer Organi & Architecture (3)**

EG 3374

Instruction set architecture: instruction types, data types, addressing modes, instruction formats, and RISC versus CISC architectures. Basic computer organization: Central processing unit, system buses, memory subsystems, and computer peripherals. Processor design: hardwired versus micro-programmed control unit, arithmetic logic unit, pipeline design, pipeline hazards, branch prediction, register windowing, register renaming, and instruction level parallelism. Memory hierarchy: cache organizations, cache placement and replacement policies, main memory, virtual memory, and memory protection. Performance measurements. Prerequisites: EG2341, EG2382.

## **Java and Applications (3)**

EG 3392

Introduction to Java applications and Applets. Control structures. Methods of Java API packages. Declaring and allocating arrays. Object-oriented programming. Constructors and finalizers. Inheritance, super classes, and subclasses. Private, protected, and public members. Polymorphism. strings and characters. Graphics and Java 2D. Graphical User Interface (GUI) components. Layout managers. Event-driven programming. Exception handling. Multithreading. Files and streams. Networking. Accessing databases with JDBC. Servlets. Java Server Pages (JSP). Extensive use of Java programming. A term-project is required. Prerequisites: EG 1302 or EG 1304 or CS 1410, and EG 1305.

## **Computer Aided Manf&Rob Lab (1)**

EG 4132

Operations and programming of stepper and servomotors; integration of discrete-event sensors with microcomputer interfaces. Programming, simulation, implementation, and applications of industrial robots and microcontrollers. Experiments on computer numerical control (CNC) programming and coordinate measuring machines (CMM). Solid modeling on CAD. Weekly written reports on experiments are required. Co-requisite: EG 4332.

## **Energy Conversion Lab (1)**

EG 4160

Laboratory examination of the design, construction and operating characteristics of transformers and



# COMPUTER ENGINEERING

various types of motors and generators. Measurement of transformer parameters. The experimental investigation of the ac generator (alternator); the series, shunt, and compound dc motors; the synchronous motor; the induction motor; and the universal motor. This is a writing-intensive course. Co-requisite: EG4360

## **Adv Electronics Design Lab (1)**

EG 4166

This course includes individual design, construction and testing of analog, digital, and mixed electronics subsystems. Typical exercises include power control, oscillators, instrumentation amplifiers and applications, digital and mixed systems, communications circuits and electromechanical control systems. Prerequisite: EG 3357; Co-requisite: EG 4366.

## **Quality Control & Reliability (3)**

EG 4330

Statistical process control, interpretation of data, troubleshooting, control charts, process control, acceptance sampling. Fundamental reliability concepts, reliability functions, probabilistic engineering design. Relationship between statistical process control and total quality management (TQM). Malcolm Baldrige National Quality Award. ISO 9000. The quality gurus: Deming, Crosby, and Juran. Benchmarking. Quality function deployment. Prerequisite: MT4331 or EG3322 .

## **Manufacturing Processes (3)**

EG 4331

Geometric dimensioning and tolerancing standards. Economical and environmental considerations in manufacturing. Selection of materials. Processing methods: casting, injection molding, assembling, machining, etc. Measuring and inspection equipment and techniques. Product data management. Product design and redesign. Rapid prototyping. In-class labs and design projects are required. Prerequisite: EG2325.

## **Computer Aided Manufacturing (3)**

EG 4332

Modern manufacturing systems including automation, computer integrated manufacturing, robotics, and programmable logic controllers. Use of CAD/CAM/CAE software in analyzing industrial robots and manipulators. Design projects are required. Prerequisite: EG2325

## **Computer Simulation (3)**

EG 4337

Discrete-event simulation. Extensive use of Monte Carlo Simulation Software. Model verification and validation. Statistics of simulation. Prerequisites: EG 3322 or MT 4331

## **Special Topics I (3)**

EG 4338

## **Special Topics II (3)**

EG 4339

# COMPUTER ENGINEERING

## **Industrial Senior Design Proj I (3)**

EG 4340

The first course in the six-hour senior design sequence for IE, EM, SECA, and ES majors. Industry-university cooperation is required. Intended to foster a thorough understanding of the iterative engineering design process, including the recognition of needs, requirements planning, analysis and design, implementation, testing, validation, and impact on society. Prerequisites for IE majors: completion of at least 18 hours out of the following set: EG 2322, EG3333, EG3334, EG3335, EG3336, EG4132, EG4330, EG4331, EG4332, EG4337, EG3316, and either EG3322 or MT4331

## **Industrial Snr Dsgn Prjet II (3)**

EG 4341

This course is a continuation of EG4340W. Prerequisite: EG 4340W.

## **Digital Signal Processing (3)**

EG 4350

Discrete time signals & systems, z-transform, discrete Fourier transform, flow graph and matrix representation of digital filters, digital filter design techniques and computation of the fast Fourier transform (FFT). MATLAB software package is heavily utilized in this course. Prerequisite: EG 3372

## **Formal Methods of Software Eng (3)**

EG 4351

The goal of this course is to teach the formal methods of specifying and verifying software. Review of mathematical foundation for formal methods. Formal languages and techniques for specification and design, including specifying syntax using grammars and finite state machines. Analysis and verification of specification and designs. Use of assertion and proofs. Automated program and design transformation. Prerequisite: MT 3323.

## **Software Maint & Evolution (3)**

EG 4352

This course introduces maintenance methodologies and the evolution of software systems. Concepts and techniques for modifying software in evolving environments. Designing and implementing software to increase maintainability and reuse; evaluating software for change; and validating software changes. Evolution of legacy software systems. Software re-engineering, data reverse engineering. Prerequisite: CS 3340.

## **Computer Networks (3)**

EG 4356

Principles of layered communication architecture: application layer protocols, transport layer services, network layer and routing, data link layer, and physical layer. Local area networks: IEEE standard 802 for LANs (Ethernet, Token Bus, Token Ring,), Asynchronous Transfer Mode (ATM), hubs, bridges, and switches, high speed LANs, satellite and wireless LANs. Circuit switching, packet switching, and message switching, Error detection, error correction, security in computer networks, multimedia networking, and performance modeling. Prerequisite: junior standing

## **Energy Conversion (3)**

# COMPUTER ENGINEERING

EG 4360

Three-phase circuits, magnetic circuits, transformers, electrical-mechanical transducers, dc motors, synchronous motors, induction motors, ac generators. Theoretical principles, mathematical models, operating characteristics, and practical applications of transformers, motors, and generators are emphasized. Prerequisites: PY1404, PY2404, MT3311, EG2352, EG2353.

## **Comp & Elect Snr Design Proj I (3)**

EG 4362

This is a first course in the six-hour senior design sequence for EE and CE majors. It is intended to foster a thorough understanding of the engineering design process, from the recognition of a need and the definition of design objectives through implementation and troubleshooting. Industry-university cooperation is encouraged. This course requires proposal submission, alternative design consideration, status briefings, implementation, budgeting, and the preparation of a comprehensive final written report and oral presentation by the students. Prerequisites: Senior standing; EG 3357; EG 3364.

## **Comp & Elect Snr Design Prj II (3)**

EG 4363

This course is a continuation of EG 4362W. Prerequisite: EG 4362W.

## **Advanced Elec Design (3)**

EG 4366

This is a practical design course at the integrated circuit level. The topics include operational amplifier applications, feedback, active filters, oscillators, voltage regulators, linear and switching power supplies, precision and low noise techniques, and digital circuits. Prerequisite: EG 3357.

## **Control Systems (3)**

EG 4369

Introduction to the fundamentals of automatic control systems including the analysis and design of control systems for various engineering applications. Topics include modeling of physical systems using both transfer function and state space models. System responses, performance and design criteria. Control system characteristics, stability, sensitivity, steady state errors and transient response. Stability analyses using Routh-Hurwitz, Root-locus, Nyquist, and Bode methods. Lead and lag compensators and PID controllers design using root-locus method; Frequency-response analysis. MATLAB and SIMULINK are used to aid in the analysis and design of control systems. The laboratory work is designed to introduce the student to modern techniques needed for the design and implementation of automatic control systems. Prerequisite: EG3372 Signals and Systems

## **Communication Theory (3)**

EG 4370

Introductory information theory; frequency response of linear systems; analog-to-digital conversion; time multiplexing of signals; Pulse Amplitude Modulation (PAM); Pulse Code Modulation (PCM); quantization noise; Amplitude Modulation (AM) and Frequency Modulation (FM) techniques. Prerequisite: EG3372

## **SECA & ES Senior Dsgn Proj I (3)**

EG 4395

# COMPUTER ENGINEERING

The first course in the six-hour senior design project sequence for Software Engineering and Engineering Science majors. It fosters a thorough understanding of a comprehensive effort, iterative and incremental in nature, involving problem identification, requirements planning, proposal preparation, analysis, preliminary design, detailed design, development, implementation, and testing. Frequent oral presentations and written report upgrades are expected. Industry-University cooperation is encouraged. Students have a final professional oral presentation and submit a comprehensive report. Prerequisites: senior standing and consent of the academic adviser.

## **SECA & ES Senior Dsgn Proj II (3)**

EG 4396

Continuation of EG 4395W. Prerequisite: EG 4395W.

# COMPUTER INFORMATION SYSTEMS

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Computer Science

## Department Chair

Pamela Fink, Ph.D. [pfink@stmarytx.edu](mailto:pfink@stmarytx.edu)

## Description of Program/Major

Computer Science studies digital computer hardware and software and emphasizes the software development process (computer programming) used to solve problems. A computer program implements an algorithm which specifies exactly how input data is converted to output data required by the problem being solved. The computer science major learns about computer architecture and about how to write programs to solve problems important to industry, government, military, and entertainment. Computers are ubiquitous in today's society, so entry-level job opportunities abound for computer science graduates, including writing business and scientific applications, developing operating systems, programming database applications, writing software for embedded control systems, and developing smart phone apps.

The **Department of Computer Science** offers four undergraduate degree programs. The four degrees are identical with respect to upper division Computer Science and St. Mary's Core curriculum requirements, but differ with respect to minor:

- ***Bachelor of Science in Computer Science*** with a minor in Mathematics for students interested in a career writing scientific and/or gaming programs.
- ***Bachelor of Arts in Computer Information Systems*** (minor in Business) for students interested in applying computers to business-related problems.
- ***Bachelor of Arts in Computer Science/Application Systems*** (unrestricted minor) for students who want the flexibility to choose their minor.
- ***Bachelor of Technology in Information Technology*** for students who already have up to 27 technical hours, knowledge of a programming language, and wish to obtain a degree in information technology.

## Degree Requirements

# COMPUTER INFORMATION SYSTEMS

## Core Curriculum (SMC)

### St. Mary's University Core (30 Hours)

All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# COMPUTER INFORMATION SYSTEMS

St. Mary's University

BA Computer Information Systems (CI) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

First Year Courses					
	Fall	Hr		Spring	Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	EN 13XX Rhetoric & Composition <sup>2</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	Social Science/History <sup>3</sup>	3	___	Speech/Communication <sup>1</sup>	3
___	CS 1410 Programming I	4	___	CS 1411 Programming II	4
___	MT 1305 Finite Math	3	___	MT 1306 Business Calculus	3
___	ND 0101 Personal & Academic Development	0			
	Total	16		Total	16
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	Foreign Language <sup>6</sup>	3	___	Foreign Language <sup>6</sup>	3
___	CS 2313 Object Oriented Programming I	3	___	CS 2323 Object Oriented Programming II	3
___	CS 2315 Algorithms	3	___	CS 2350 Computer Architecture	3
___	AC 2310 Intro to Accounting I	3	___	AC 2320 Intro to Accounting II	3
	Total	15		Total	15
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics	3	___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	___	SMC 2304 Foundation of Practice: Literature	3
___	CS 3310 Systems Analysis and Design	3	___	CS 3340 Software Engineering	3
___	CS 3350 Operating Systems	3	___	CS 4320 Files and Database	3
___	EC 2301 Intro Macroeconomic Theory	3	___	EC 2303 Intro Microeconomic Theory	3
___	MT 3323 Discrete Math ( <i>Recommended</i> )	3			
	Total	18		Total	15
Fourth Year Courses					
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
___	TH 33xx Advanced Theology <sup>7</sup>	3	___	CS 4395 Senior Project	3
___	CS 3335 Survey of Programming Lang	3	___	CS Elective	3
___	CS 4330 Data Communications	3	___	Elective	3
___	FN 3310 Corporate Finance	3	___		
	Total	15		Total	12

Total Hours 122

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by coursework in this degree plan.

# COMPUTER INFORMATION SYSTEMS

St. Mary's University  
BA Computer Information Systems (CI) Degree Plan – 2010  
122 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## **Business Courses (12 hours)**

__ AC 2310 – Introduction to Accounting I	3
__ AC 2320 – Introduction to Accounting II	3
__ EC 2301 – Introductory Macroeconomic Theory OR EC 2303 Introductory Microeconomic Theory	3
__ FN 3310 – Corporate Finance	3

## **Math Courses (9 hours)**

__ MT 1305 – Finite Math	3
__ MT 1306 – Calculus for Business	3
__ MT 3323 – Discrete Mathematical Structures (Recommended)	3

## **BA Computer Information Systems Courses (44 hours)**

__ CS 1410 – Programming I	4
__ CS 1411 – Programming II	4
__ CS 2313 – Object Oriented Programming I	3
__ CS 2315 – Algorithms	3
__ CS 2323 – Object Oriented Programming II	3
__ CS 2350 – Computer Architecture	3
__ CS 3310 – Systems Analysis and Design	3
__ CS 3335 – Survey of Programming Language	3
__ CS 3340 – Software Engineering	3
__ CS 3350 – Operating Systems	3
__ CS 4320 – Files and Database	3
__ CS 4330 – Data Communications	3
__ CS 4395 – Senior Project	3
__ CS Elective	3

## **Electives (6 hours)**

__ Electives - An elective can be any course taken from any discipline.	6
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## **Proficiency in Information Technology and Information Literacy**

__ For this major, this requirement will be fulfilled by coursework in this degree plan.	
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# COMPUTER INFORMATION SYSTEMS

## Department Courses and Descriptions

### **Introduction to Computers (3)**

CS 1300

Survey of computer systems and their integration and application in society. The fundamentals of software are discussed and applied through word processing, data base and spread sheet applications. (Note: Successful completion of this course does not meet University IT proficiencies requirement.)

### **Programming I (4)**

CS 1310

Fundamentals of the software development process with emphasis on program design (algorithm development), structured programming techniques and code and test using a structured, modular programming language.

### **Programming II/Data Structures (4)**

CS 1311

Properties, representation, and manipulation of internal information structures including lists, queues, stacks, trees, and net works. Prerequisite: CS 1310.

### **Topics in Programming Languages (3)**

CS 1320

Designing, coding and testing computer programs using language specific commands. May be repeated as topics change.

### **Object Oriented Programming I (3)**

CS 2313

Object oriented programming (OOP) using C++. Prerequisite: CS 1311.

### **Algorithms (3)**

CS 2315

The theory, design, analysis, implementation and application of fundamental and advanced computer algorithms. Prerequisite: CS 1311.

### **Object Oriented Programming II (3)**

CS 2323

Fundamentals of Object Oriented modeling, analysis (OOA) and design (OOD) techniques including process and notation. Using C++ for graphical user interface development with MFC. Prerequisite: CS2313

### **Computer Architecture (3)**

CS 2350

Logical organization and design of digital computer hardware. Prerequisite: CS2315

### **Intro to Systems Analysis and Design (3)**

CS 3310

An introduction to the use of current methodologies for the analysis and design of various types of

# COMPUTER INFORMATION SYSTEMS

systems. Methodologies studied involve the traditional approach as well as the object-oriented approach to analysis and design, which includes use of Universal Markup Language (UML).

## **Compilers (3)**

CS 3311

Design and implementation of compilers. Prerequisite: CS1311

## **Survey of Programming Languages (3)**

CS 3335

Survey of existing high-level programming languages with emphasis on language concepts. Prerequisite: CS2323

## **Software Engineering (3)**

CS 3340

Engineering approach to software development including techniques for software planning, systems analysis, design, structured programming, program testing and program maintenance. Prerequisite: CS2315

## **Operating Systems (3)**

CS 3350

The study of the design and implementation of computer-based operating systems, including issues in process, memory, and storage management, as well as security. Prerequisites: CS1311 and CS2350

## **Advanced Topics (1)**

CS 4175

Advanced topics in Computer Science. May be repeated for credit when topics vary. Prerequisite: Instructor permission.

## **Advanced Topics (2)**

CS 4275

Advanced topics in Computer Science. May be repeated for credit when topics vary. Prerequisite: Instructor permission.

## **Artificial Intelligence (3)**

CS 4315

Survey of computer systems designed to exhibit intelligent behavior. Prerequisite: CS1311.

## **Files & Databases (3)**

CS 4320

The design, implementation, and manipulation of files, data bases, and DBMS. Prerequisite: CS2315

## **Computer Graphics (3)**

CS 4325

The study and implementation of computer imaging and techniques for representation, manipulation and display of graphical objects. Prerequisite: CS1311

# COMPUTER INFORMATION SYSTEMS

## **Data Communication (3)**

CS 4330

The study of designing, implementing, and manipulating data communications with special emphasis on networks and their protocols. Prerequisite: CS2315

## **Advanced Topics (3)**

CS 4375

Advanced topics in Computer Science. May be repeated for credit when topics vary. Prerequisite: CS1311.

## **Senior Project (3)**

CS 4395

Application of software engineering techniques to a comprehensive computer software development project. Prerequisite: CS 3340 and Senior standing or higher.

# COMPUTER SCIENCE

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Computer Science

## Department Chair

Pamela Fink, Ph.D. [pfink@stmarytx.edu](mailto:pfink@stmarytx.edu)

## Description of Program/Major

Computer Science studies digital computer hardware and software and emphasizes the software development process (computer programming) used to solve problems. A computer program implements an algorithm which specifies exactly how input data is converted to output data required by the problem being solved. The computer science major learns about computer architecture and about how to write programs to solve problems important to industry, government, military, and entertainment. Computers are ubiquitous in today's society, so entry-level job opportunities abound for computer science graduates, including writing business and scientific applications, developing operating systems, programming database applications, writing software for embedded control systems, and developing smart phone apps.

The **Department of Computer Science** offers four undergraduate degree programs. The four degrees are identical with respect to upper division Computer Science and St. Mary's Core curriculum requirements, but differ with respect to minor:

- ***Bachelor of Science in Computer Science*** with a minor in Mathematics for students interested in a career writing scientific and/or gaming programs.
- ***Bachelor of Arts in Computer Information Systems*** (minor in Business) for students interested in applying computers to business-related problems.
- ***Bachelor of Arts in Computer Science/Application Systems*** (unrestricted minor) for students who want the flexibility to choose their minor.
- ***Bachelor of Technology in Information Technology*** for students who already have up to 27 technical hours, knowledge of a programming language, and wish to obtain a degree in information technology.

## Degree Requirements

# COMPUTER SCIENCE

## Core Curriculum (SMC)

### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# COMPUTER SCIENCE

St. Mary's University

BS Computer Science (CS) (Math Minor) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

First Year Courses					
Fall		Hr	Spring		Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	EN 13XX Rhetoric & Composition <sup>2</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	CS 1410 Programming I	4	___	Speech/Communication <sup>1</sup>	3
___	MT 2412 Univariate Calculus I	4	___	CS 1411 Programming II	4
___	ND 0101 Personal & Academic Development	0	___	MT 2413 Univariate Calculus II	4
Total		14	Total		17
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	Foreign Language <sup>6</sup>	3	___	Foreign Language <sup>6</sup>	3
___	CS 2313 Object Oriented Programming I	3	___	CS 2323 Object Oriented Programming II	3
___	CS 2315 Algorithms	3	___	CS 2350 Computer Architecture	3
___	MT 3323 Discrete Math Struct or MT 3XXX	3	___	MT 3324 Linear Algebra	3
Total		15	Total		15
Third Year Courses					
___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	SMC 2304 Foundation of Practice: Literature	3
___	TH 33xx Advanced Theology <sup>7</sup>	3	___	CS 3340 Software Engineering	3
___	CS 3310 Systems Analysis and Design	3	___	CS 4320 Files and Database	3
___	CS 3335 Survey of Programming Lang	3	___	MT 4351 Numerical Analysis or MT 3XXX	3
Total		15	Total		15
Fourth Year Courses					
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
___	Social Science/History <sup>3</sup>	3	___	CS 4395 Senior Project	3
___	CS 3350 Operating Systems	3	___	CS Elective	3
___	CS 4330 Data Communications	3	___	Elective	3
___	Elective	3	___	Elective	2
Total		15	Total		14

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (Must be "C" or better): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by coursework in this degree plan.

# COMPUTER SCIENCE

St. Mary's University  
BS Computer Science (CS) Math Minor Degree Plan – 2010  
120 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## **BS Computer Science with Math Minor Courses (61 hours)**

__ CS 1410 – Programming I	4
__ CS 1411 – Programming II	4
__ CS 2313 – Object Oriented Programming I	3
__ CS 2315 – Algorithms	3
__ CS 2323 – Object Oriented Programming II	3
__ CS 2350 – Computer Architecture	3
__ CS 3310 – Systems Analysis and Design	3
__ CS 3335 – Survey of Programming Language	3
__ CS 3340 – Software Engineering	3
__ CS 3350 – Operating Systems	3
__ CS 4320 – Files and Database	3
__ CS 4330 – Data Communications	3
__ CS 4395 – Senior Project	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3323 – Discrete Mathematical Structures OR MT 3XXX	3
__ MT 3324 – Linear Algebra	3
__ MT 4351 – Numerical Analysis OR MT 3XXX	3
__ CS Elective	3

## **Electives (8 hours)**

__ Electives - An elective can be any course taken from any discipline.	8
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by coursework in this degree plan.

# COMPUTER SCIENCE

## Department Courses and Descriptions

### **Introduction to Computers (3)**

CS 1300

Survey of computer systems and their integration and application in society. The fundamentals of software are discussed and applied through word processing, data base and spread sheet applications. (Note: Successful completion of this course does not meet University IT proficiencies requirement.)

### **Programming I (4)**

CS 1310

Fundamentals of the software development process with emphasis on program design (algorithm development), structured programming techniques and code and test using a structured, modular programming language.

### **Programming II/Data Structures (4)**

CS 1311

Properties, representation, and manipulation of internal information structures including lists, queues, stacks, trees, and net works. Prerequisite: CS 1310.

### **Topics in Programming Languages (3)**

CS 1320

Designing, coding and testing computer programs using language specific commands. May be repeated as topics change.

### **Object Oriented Programming I (3)**

CS 2313

Object oriented programming (OOP) using C++. Prerequisite: CS 1311.

### **Algorithms (3)**

CS 2315

The theory, design, analysis, implementation and application of fundamental and advanced computer algorithms. Prerequisite: CS 1311.

### **Object Oriented Programming II (3)**

CS 2323

Fundamentals of Object Oriented modeling, analysis (OOA) and design (OOD) techniques including process and notation. Using C++ for graphical user interface development with MFC. Prerequisite: CS2313

### **Computer Architecture (3)**

CS 2350

Logical organization and design of digital computer hardware. Prerequisite: CS2315

### **Intro to Systems Analysis and Design (3)**

CS 3310

An introduction to the use of current methodologies for the analysis and design of various types of



# COMPUTER SCIENCE

systems. Methodologies studied involve the traditional approach as well as the object-oriented approach to analysis and design, which includes use of Universal Markup Language (UML).

## **Compilers (3)**

CS 3311

Design and implementation of compilers. Prerequisite: CS1311

## **Survey of Programming Languages (3)**

CS 3335

Survey of existing high-level programming languages with emphasis on language concepts. Prerequisite: CS2323

## **Software Engineering (3)**

CS 3340

Engineering approach to software development including techniques for software planning, systems analysis, design, structured programming, program testing and program maintenance. Prerequisite: CS2315

## **Operating Systems (3)**

CS 3350

The study of the design and implementation of computer-based operating systems, including issues in process, memory, and storage management, as well as security. Prerequisites: CS1311 and CS2350

## **Advanced Topics (1)**

CS 4175

Advanced topics in Computer Science. May be repeated for credit when topics vary. Prerequisite: Instructor permission.

## **Advanced Topics (2)**

CS 4275

Advanced topics in Computer Science. May be repeated for credit when topics vary. Prerequisite: Instructor permission.

## **Artificial Intelligence (3)**

CS 4315

Survey of computer systems designed to exhibit intelligent behavior. Prerequisite: CS1311.

## **Files & Databases (3)**

CS 4320

The design, implementation, and manipulation of files, data bases, and DBMS. Prerequisite: CS2315

## **Computer Graphics (3)**

CS 4325

The study and implementation of computer imaging and techniques for representation, manipulation and display of graphical objects. Prerequisite: CS1311

# COMPUTER SCIENCE

## **Data Communication (3)**

CS 4330

The study of designing, implementing, and manipulating data communications with special emphasis on networks and their protocols. Prerequisite: CS2315

## **Advanced Topics (3)**

CS 4375

Advanced topics in Computer Science. May be repeated for credit when topics vary. Prerequisite: CS1311.

## **Senior Project (3)**

CS 4395

Application of software engineering techniques to a comprehensive computer software development project. Prerequisite: CS 3340 and Senior standing or higher.

# COMPUTER SCIENCE AND APPLICATION SYSTEMS

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Computer Science

## Department Chair

Pamela K. Fink, Ph.D. [pfink@stmarytx.edu](mailto:pfink@stmarytx.edu)

## Description of Program/Major

Computer Science studies digital computer hardware and software and emphasizes the software development process (computer programming) used to solve problems. A computer program implements an algorithm which specifies exactly how input data is converted to output data required by the problem being solved. The computer science major learns about computer architecture and about how to write programs to solve problems important to industry, government, military, and entertainment. Computers are ubiquitous in today's society, so entry-level job opportunities abound for computer science graduates, including writing business and scientific applications, developing operating systems, programming database applications, writing software for embedded control systems, and developing smart phone apps.

The **Department of Computer Science** offers four undergraduate degree programs. The four degrees are identical with respect to upper division Computer Science and St. Mary's Core curriculum requirements, but differ with respect to minor:

- ***Bachelor of Science in Computer Science*** with a minor in Mathematics for students interested in a career writing scientific and/or gaming programs.
- ***Bachelor of Arts in Computer Information Systems*** (minor in Business) for students interested in applying computers to business-related problems.
- ***Bachelor of Arts in Computer Science/Application Systems*** (unrestricted minor) for students who want the flexibility to choose their minor.
- ***Bachelor of Technology in Information Technology*** for students who already have up to 27 technical hours, knowledge of a programming language, and wish to obtain a degree in information technology.

## Degree Requirements

# COMPUTER SCIENCE AND APPLICATION SYSTEMS

## Core Curriculum (SMC)

### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# COMPUTER SCIENCE AND APPLICATION SYSTEMS

St. Mary's University

BA Computer Science/Application Systems (CSAS) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

**St. Mary's University Core (SMC) courses may be taken in any order;** however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
Fall		Hr	Spring		Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	EN 13XX Rhetoric & Composition <sup>2</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	CS 1410 Programming I	4	___	Speech/Communication <sup>1</sup>	3
___	MT 1305 Finite Math	3	___	CS 1411 Programming II	4
___	ND 0101 Personal & Academic Development	0	___	MT 1306 Business Calculus	3
Total		13	Total		16
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	Foreign Language <sup>6</sup>	3	___	Foreign Language <sup>6</sup>	3
___	CS 2313 Object Oriented Programming I	3	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	CS 2315 Algorithms	3	___	CS 2323 Object Oriented Programming II	3
___	MT 3323 Discrete Math Struct (Recommended)	3	___	CS 2350 Computer Architecture	3
Total		15	Total		15
Third Year Courses					
___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	SMC 2304 Foundation of Practice: Literature	3
___	CS 3310 Systems Analysis and Design	3	___	CS 3340 Software Engineering	3
___	CS 3335 Survey of Programming Lang	3	___	CS 4320 Files and Database	3
___	Elective	3	___	Elective	3
Total		15	Total		15
Fourth Year Courses					
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
___	Social Science/History <sup>3</sup>	3	___	CS 4395 Senior Project	3
___	CS 3350 Operating Systems	3	___	CS Elective	3
___	CS 4330 Data Communications	3	___	Elective	3
___	Elective	3	___	Elective	4
Total		15	Total		16

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by coursework in this degree plan.

# COMPUTER SCIENCE AND APPLICATION SYSTEMS

St. Mary's University  
BA Computer Science/Application Systems (CSAS) Degree Plan – 2010  
120 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## St. Mary's University Core (30 Hours)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## School of Science, Engineering, and Technology Specific Core (21 Hours)

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## BA Computer Science/Application Systems Courses (53 hours)

__ CS 1410 – Programming I	4
__ CS 1411 – Programming II	4
__ CS 2313 – Object Oriented Programming I	3
__ CS 2315 – Algorithms	3
__ CS 2323 – Object Oriented Programming II	3
__ CS 2350 – Computer Architecture	3
__ CS 3310 – Systems Analysis and Design	3
__ CS 3335 – Survey of Programming Language	3
__ CS 3340 – Software Engineering	3
__ CS 4320 – Files and Database	3
__ CS 3350 – Operating Systems	3
__ CS 4330 – Data Communications	3
__ CS 4395 – Senior Project	3
__ MT 1305 – Finite Math	3
__ MT 1306 – Calculus for Business	3
__ MT 3323 – Discrete Mathematical Structures (Recommended)	3
__ CS Elective	3

## Electives (16 hours)

__ Electives - An elective can be any courses taken from any discipline.	16
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## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be fulfilled by coursework in this degree plan.

# COMPUTER SCIENCE AND APPLICATION SYSTEMS

## Department Courses and Descriptions

### **Introduction to Computers (3)**

CS 1300

Survey of computer systems and their integration and application in society. The fundamentals of software are discussed and applied through word processing, data base and spread sheet applications. (Note: Successful completion of this course does not meet University IT proficiencies requirement.)

### **Programming I (4)**

CS 1310

Fundamentals of the software development process with emphasis on program design (algorithm development), structured programming techniques and code and test using a structured, modular programming language.

### **Programming II/Data Structures (4)**

CS 1311

Properties, representation, and manipulation of internal information structures including lists, queues, stacks, trees, and net works. Prerequisite: CS 1310.

### **Topics in Programming Languages (3)**

CS 1320

Designing, coding and testing computer programs using language specific commands. May be repeated as topics change.

### **Object Oriented Programming I (3)**

CS 2313

Object oriented programming (OOP) using C++. Prerequisite: CS 1311.

### **Algorithms (3)**

CS 2315

The theory, design, analysis, implementation and application of fundamental and advanced computer algorithms. Prerequisite: CS 1311.

### **Object Oriented Programming II (3)**

CS 2323

Fundamentals of Object Oriented modeling, analysis (OOA) and design (OOD) techniques including process and notation. Using C++ for graphical user interface development with MFC. Prerequisite: CS2313

### **Computer Architecture (3)**

CS 2350

Logical organization and design of digital computer hardware. Prerequisite: CS2315

### **Intro to Systems Analysis and Design (3)**

CS 3310

An introduction to the use of current methodologies for the analysis and design of various types of

# COMPUTER SCIENCE AND APPLICATION SYSTEMS

systems. Methodologies studied involve the traditional approach as well as the object-oriented approach to analysis and design, which includes use of Universal Markup Language (UML).

## **Compilers (3)**

CS 3311

Design and implementation of compilers. Prerequisite: CS1311

## **Survey of Programming Languages (3)**

CS 3335

Survey of existing high-level programming languages with emphasis on language concepts. Prerequisite: CS2323

## **Software Engineering (3)**

CS 3340

Engineering approach to software development including techniques for software planning, systems analysis, design, structured programming, program testing and program maintenance. Prerequisite: CS2315

## **Operating Systems (3)**

CS 3350

The study of the design and implementation of computer-based operating systems, including issues in process, memory, and storage management, as well as security. Prerequisites: CS1311 and CS2350

## **Advanced Topics (1)**

CS 4175

Advanced topics in Computer Science. May be repeated for credit when topics vary. Prerequisite: Instructor permission.

## **Advanced Topics (2)**

CS 4275

Advanced topics in Computer Science. May be repeated for credit when topics vary. Prerequisite: Instructor permission.

## **Artificial Intelligence (3)**

CS 4315

Survey of computer systems designed to exhibit intelligent behavior. Prerequisite: CS1311.

## **Files & Databases (3)**

CS 4320

The design, implementation, and manipulation of files, data bases, and DBMS. Prerequisite: CS2315

## **Computer Graphics (3)**

CS 4325

The study and implementation of computer imaging and techniques for representation, manipulation and display of graphical objects. Prerequisite: CS1311



# COMPUTER SCIENCE AND APPLICATION SYSTEMS

## **Data Communication (3)**

CS 4330

The study of designing, implementing, and manipulating data communications with special emphasis on networks and their protocols. Prerequisite: CS2315

## **Advanced Topics (3)**

CS 4375

Advanced topics in Computer Science. May be repeated for credit when topics vary. Prerequisite: CS1311.

## **Senior Project (3)**

CS 4395

Application of software engineering techniques to a comprehensive computer software development project. Prerequisite: CS 3340 and Senior standing or higher.

# ELECTRICAL ENGINEERING

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Engineering

## Department Chair

Bahman Rezaie, Ph.D. [brezaie@stmarytx.edu](mailto:brezaie@stmarytx.edu)

## Description of Program/Major

The electrical engineering program at St. Mary's University is best known for its high academic standards and innovative student projects. Every engineering senior completes a year-long design project, some of which have even been patented. The curriculum emphasizes new research findings and industry advances, including computer-aided design tools.

Students become well-versed in science and mathematics; current and relevant technical knowledge; extensive, practical hands-on experience in laboratories; and the opportunity to participate in faculty research projects.

Unique facilities available to electrical engineering students include an electrical engineering laboratory accessible 24-hours a day; an energy conversion laboratory for motors, generators and transformers; a manufacturing and robotics laboratory; and a research laboratory equipped with both UNIX and Windows workstations.

The B.S. in Electrical Engineering is accredited by the Engineering Accreditation Commission of ABET.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

# ELECTRICAL ENGINEERING

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# ELECTRICAL ENGINEERING

St. Mary's University

BS Electrical Engineering (EE) Degree Plan – ABET Accredited Program

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
	Fall	Hr		Spring	Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1311 Foundations of Reflection: Self	3
—	EN 1311 Rhetoric & Composition <sup>2</sup>	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	EG 1101 Intro to Electrical Engineering I	1	—	EG 1301 Engineering Graphics & Design <sup>4</sup>	3
—	EG 1302 Programming for Engineers	3	—	EG 1102 Intro to Electrical Engineering II	1
—	MT 2412 Univariate Calculus I	4	—	MT 2413 Univariate Calculus II	4
—	PY1404 Mechanics, Heat, Acoustics	4	—	PY2404 Electricity, Magnetism, Optics	4
—	ND 0101 Personal & Academic Development	0			
	Total	18		Total	18
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 1314 Foundations of Reflection: God	3
—	EG 2141 Logic Design Lab	1	—	SMC 2301 Foundations of Practice: Ethics	3
—	EG 2307 Engineering Mechanics	3	—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
—	EG 2341 Logic Design	3	—	EG 2152 Circuit Analysis Lab	1
—	EG 2352 Circuit Analysis I	3	—	EG 2353 Circuit Analysis II	3
—	MT 3311 Differential Equations	3	—	MT 3315 Advanced Engineering Math	3
	Total	16		Total	16
Third Year Courses					
—	CH 1401 General Chemistry I	4	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	EG 3156 Electronics I Lab	1	—	EG 3157 Electronics II Lab	1
—	EG 3356 Electronics I	3	—	EG 3357 Electronics II	3
—	EG 3363 Microprocessors I	3	—	EG 3364 Microprocessors II	3
—	EG 3372 Signals and Systems	3	—	EG 3366 Electromagnetic Theory	3
—	MT 4331 Probability and Statistics I	3	—	EG 4350 Digital Signal Processing	3
	Total	17		Total	16
Fourth Year Courses					
—	SMC 2304 Foundation of Practice: Literature Advanced Theology <sup>5</sup>	3	—	SMC 4301 Capstone Seminar-Senior Design Project II	3
—	EG 4360 Energy Conversion	3	—	EG 3334 Engineering Economy <sup>3</sup>	3
—	EG 4362 Senior Design Project I <sup>1</sup>	3	—	EG 3368 Semiconductor Devices	3
—	EG 4366 Advanced Electronic Design	3	—	EG 4160 Energy Conversion Lab	1
—	EG 4369 Control Systems	3	—	EG 4166 Advanced Electronic Design Lab	1
	Total	18		Total	14

Total Hours 133

<sup>1</sup>Speech Requirement: EG 4362 Senior Design Project 1

<sup>2</sup>Rhetoric and Composition Requirement (Must be "C" or better): EN 1311 or EN 1313 (international students)

<sup>3</sup>Social Science Requirement: EG 3334 Engineering Economy

<sup>4</sup>Fine Arts Requirement: EG 1301 Engineering Graphics & Design

<sup>5</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Foreign Languages – Computer, Electrical, and Industrial Engineering majors are exempt from the foreign language requirement.

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# ELECTRICAL ENGINEERING

St. Mary's University  
BS Electrical Engineering (EE) Degree Plan – ABET Accredited Program – 2010  
133 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization (Senior Design Project II)	3

## School of Science, Engineering, and Technology Specific Core (15 Hours)

Foreign Languages – Computer, Electrical, and Industrial Engineering majors are exempt from the foreign language requirement.

__ <b>Composition and Rhetoric (grade of "C" or better)</b> – EN 1311, EN 1313 (for international students)	3
__ Fine Arts – EG 1301 Graphics Design	3
__ Social Science – EG 3334 Engineering Economy	3
__ Speech – EG 4362 Senior Design Project 1	3
__ Theology – Advanced Theology 33XX	3

## BS Electrical Engineering Major Courses (88 hours)

**Engineering students must make a grade of "C" or better** in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". **Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.**

__ CH 1401 – General Chemistry I	4
__ EG 1101 – Introduction to Electrical Engineering I	1
__ EG 1102 – Introduction to Electrical Engineering II	1
__ EG 1302 – Programming for Engineers	3
__ EG 2141 – Logic Design Lab	1
__ EG 2152 – Circuit Analysis Lab	1
__ EG 2307 – Engineering Mechanics	3
__ EG 2341 – Logic Design	3
__ EG 2352 – Circuit Analysis I	3
__ EG 2353 – Circuit Analysis II	3
__ EG 3156 – Electronics I Lab	1
__ EG 3157 – Electronics II Lab	1
__ EG 3356 – Electronics I	3
__ EG 3357 – Electronics II	3
__ EG 3363 – Microprocessors I	3
__ EG 3364 – Microprocessors II	3
__ EG 3366 – Electromagnetic Theory	3
__ EG 3368 – Semiconductor Devices	3
__ EG 3372 – Signals and Systems	3
__ EG 4160 – Energy Conversion Lab	1
__ EG 4166 – Advanced Electronic Design Lab	1
__ EG 4350 – Digital Signal Processing	3
__ EG 4360 – Energy Conversion	3
__ EG 4366 – Advanced Electronic Design	3
__ EG 4369 – Control Systems	3
__ EG 4370 – Communication Theory	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3311 – Differential Equations	3
__ MT 3315 – Advanced Engineering Mathematics	3
__ MT 4331 – Probability and Statistics I	3
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4

## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# ELECTRICAL ENGINEERING

## Department Courses and Descriptions

### **Intro to Computer/Ele E I (1)**

EG 1101

Introduction to electrical/computer engineering consist of two 1-hour course sequence directed at incoming freshmen. The two courses focus on MATLAB and its application to engineering problems. In the first course, EG1101, the basic MATLAB features are covered. This includes MATLAB help utility, MATLAB environment and desktop, all MATLAB windows and their functionalities, solving simple problems using MATLAB, preliminary graphing capabilities of MATLAB, m-file development, debugging m-files with MATLAB, solving more sophisticated engineering problems with MATLAB. Pre-requisite: none.

### **Intro to Computer/ EE II (1)**

EG 1102

Introduction to electrical/computer engineering consist of two 1-hour course sequence directed at incoming freshmen. The two courses focus on MATLAB and its application to engineering problems. In the second course, EG1102, the more advanced MATLAB features are covered. This includes m-file and its debugging features, flow control in MATLAB, more advanced usage of MATLAB help utilities, more advanced MATLAB commands, MATLAB toolboxes, solving advanced engineering and scientific problems using MATLAB, more advanced graphing capabilities of MATLAB. Pre-requisite: EG 1101.

### **Engineering Graphics and Design (3)**

EG 1301

Introduction to drawing instruments, lettering, and sketching. Work drawings: pictorials, orthographic projection, dimensioning, sections, and auxiliary views. Descriptive geometry: points, lines, planes, revolutions, intersections, etc. Use of Computer Aided Design (CAD) software. Introduction to engineering design. Several design projects are developed. Prerequisite: none.

### **Programming for Engineers (3)**

EG 1302

The goal of this course is to provide students with a working knowledge of C programming language as defined by the ANSI standard. This class does not just focus on the C language syntax and program constructs. It will also emphasize good programming habits in developing a well-structured code. The concepts that will be presented in this course include: programming environment; basic C program structure; variables, constants and operators; looping with for, while, and do while statements; decision-making constructs (if, if/else, switch, and conditional expression statements); using and writing functions; using arrays, pointers and combination thereof; string operations/functions; performing file I/O; using the preprocessor directives; and using modular development methodology. Prerequisite: none.

### **Object-Oriented Program & Desig (3)**

EG 1305

Introduction to object-oriented programming, classes, objects, data members (class attributes), methods (member functions or class behavior), data abstraction, and encapsulation. Software reuse. Constructors, destructors, and inheritance. Operator overloading. Virtual functions and polymorphism. Stream Input/Output. The preprocessor. Object-oriented analysis and design methodologies and their role in the software development process. The Unified Modeling Language (UML) as a design and development

# ELECTRICAL ENGINEERING

tool. Extensive use of OOP programming is required. A class project is included requiring use of the UML to develop a sizable software application. A professional oral presentation and a well-written report are required. Prerequisite: EG 1302 or EG 1304 or CS 1410.

## **Engineering Seminars (0)**

EG 2010

The engineering seminars provides students exposure to outside speakers and a review of recent developments in science and engineering. Prerequisite: none.

## **Logic Design Laboratory (1)**

EG 2141

This lab introduces the basic principles of digital electronic design using standard TTL devices. Experiments illustrate the principles learned in the Fundamentals of Logic Design (EG 2341) class. The first part of this laboratory focuses on the design of combinational networks. This includes the basic operation of various logic gates; verification of truth tables; minimization of logic functions; realization of digital functions using multiple stage networks, decoders, multiplexer, and read-only memory. The second part of this lab emphasizes the design of sequential network. Here, students are introduced to various types of flip-flops, counters; design of digital circuits using Finite State Machines. Co-requisite: EG 2341.

## **Circuit Analysis Laboratory (1)**

EG 2152

This lab is geared towards students who are taking electrical engineering laboratory for the first time. The lab is divided into two parts: First part covers introductory concepts and basic measurements in electrical circuits. Second part is dedicated to circuit theorems; transient response of circuits composed of resistors, capacitors, and inductors; AC steady state; frequency response (PHASORS); and the characteristics of operational amplifiers in electrical circuits. Co-requisite: EG 2353.

## **Digital Systems Design Lab (1)**

EG 2181

Experiments illustrate the principles learned in the Digital Systems Design (EG 2382) class. The first part of this laboratory focuses on the design of sequential networks using 7400 series TTL and CMOS devices. This includes comparing the electric characteristics; drive capability and fan-out of TTL and CMOS devices; Tri-state buffers, and Open-collector outputs. The second part of this laboratory emphasizes the more recent digital systems design techniques that use modern CAD tools that support Hardware Design Languages such as VHDL. Many laboratory experiments introduce students to various VHDL sequential and concurrent constructs. Students learn how to simulate, verify, and synthesize their designs using state-of-the-art CAD tools. Prerequisites: EG 2341 and EG 2141W; Co-requisite: EG 2382.

## **High Technology & Society (3)**

EG 2300

Exploration of the social, economic, and political impact of modern science and technology. The ethical nature of scientific research and technological development. Exploration of recent scientific discoveries and technological applications. This course may be counted for physical science credit for social science majors and social science credit for SET majors.

# ELECTRICAL ENGINEERING

## **Principles of Materials Scienc (3)**

EG 2306

A study of the atomic and crystalline structure of solids including the theory of X-ray diffraction, solid solutions, diffusion, and phase transformations. The behavior of matters based on their mechanical, electrical, thermal, magnetic, and optical properties. Point defects, dislocation theory. Prerequisites: CH 1401, PY 2404, MT 2412.

## **Engineering Mechanics (3)**

EG 2307

Fundamentals of statics, vector methods, concentrated and distributed force systems, methods of moments for extended rigid structures, static equilibrium of structures. Prerequisites: PY 1404, MT 2412.

## **Strength of Materials (3)**

EG 2308

Mechanical properties of materials: normal and shear stress, normal and shear strain. Separate treatments of axial load, torsion, and bending. Bending and shearing stresses in beams. Deflection in homogeneous beams. Design of members by strength criteria. Prerequisite: EG 2307, MT2413.

## **Fluid Mechanics (3)**

EG 2309

Forces and energy generated by liquids and gasses at rest and in motion. Fundamental laws of fluid behavior: conservation of mass, energy, and momentum. Differential and finite control volume approaches for flow analysis. Steady, incompressible flow. Prerequisites: MT 3311, PY 2404, EG 2307.

## **Human Computer Interaction (3)**

EG 2310

The goal of this course is to teach the fundamentals of human-computer interface in software design and development. Students learn to design, implement and evaluate effective and usable graphical computer interfaces. Design of windows, menus, and commands. Voice and natural language I/O. Response time and feedback. Color, icons, and sound. Students work on individual and team projects to de sign, implement and evaluate computer interfaces. Prerequisite: EG1302 or EG1304 or CS 1410.

## **Software Requirement Eng (3)**

EG 2311

This course provides an introduction to the fundamentals of software requirements management. Topics covered include requirements gathering, system modeling and software specifications. The major emphasis is on using a variety of modeling tools and techniques to define a system specification. Languages and models for representing requirements. Analysis and valida tion techniques, including need, goal, and use case analysis. Students participate in a group project on software requirements. Prerequisite: EG 1302 or EG 1304 or CS 1410.

## **Work Design & Product Measure (3)**

EG 2322

Industrial engineering tools and concepts for engineering problem solving. Work design and methods engineering. Work measurement and work sampling, productivity measurement, incentives, standard time techniques. In-class labs and design projects are required. Prerequisites: none.



# ELECTRICAL ENGINEERING

## **Industrial Automation & Control (3)**

EG 2325

Logic-structured and icon-driven programming. Introduction to industrial field devices for control and automation. Number systems and codes. Digital and analogue signals. Interposing relay control. Timers, counters, and data compare instructions. In-class labs and design projects are required. Prerequisite: EG1302, EG1304, CS1410, or CS 1411.

## **Fundamentals of Logic Design (3)**

EG 2341

The first half of this course focuses on combinational network design. This includes the number systems and conversion; Boolean algebra; minimization of switching functions using Karnaugh maps; multi-level gate networks; multi-output networks; realizing Boolean functions using multiplexers, decoders, read-only memories, and programmable logic devices. The second half of this course focuses on the analysis and the design of sequential network. Topics covered in this part of the course include flip-flops; designing counters using different type of flip-flops; analysis of sequential networks; derivation of state graphs and tables; introduction to Finite State Machines; minimization of state tables; guidelines for state assignment; derivation of flip-flop input equations, and realization of sequential networks. Co-requisite: EG 2141W.

## **Data Structures & Algorithms (3)**

EG 2342

This course provides an introduction to the design and analysis of computer data structures and algorithms, focusing in particular on techniques for achieving high performance software in computer systems. Students will learn the necessary mathematical background to carry out algorithm analysis, such as time and space complexity, worst-case and average-case analysis, tractability & intractability, and design techniques. It discusses recursion and recurrence relations, asymptotic notations, basic data structures, dynamic dictionaries, balanced trees, priority queues, and graphs. The specific data structures which will be discussed in class include linked lists, stack, heaps, self-organizing lists, binary search trees, hash tables, AVL trees, red-black trees, balanced trees, leftist trees, minimum spanning trees, and others. Prerequisite: EG1302 or EG1304

## **Circuit Analysis I (3)**

EG 2352

Basic circuit elements and models; resistive circuits; circuit theorems; loop and nodal analysis of resistive networks; techniques of analysis of operational amplifiers; analysis of circuits with energy storage elements (capacitors and inductors); natural and step response of RL; RC; and RLC circuits. Prerequisite: PY2404. Co-requisite: MT3311.

## **Circuit Analysis II (3)**

EG 2353

The goal of this course is to provide students with a working knowledge of phasor diagrams; sinusoidal steady-state power analysis and complex load matching; series and parallel resonance; Laplace transform and its applications in circuit analysis: the step function, the impulse function, inverse transforms, initial and final value theorems, and circuit analysis in the s-domain. Transfer functions and Bode diagrams are also included. Prerequisites: EG 2352, MT 3311.

# ELECTRICAL ENGINEERING

## **Digital Systems Design (3)**

EG 2382

The first part of this course presents a quick review of sequential network design concepts as presented in the pre-requisite course on Fundamentals of Logic Design (EG 2341); iterative networks; integrated circuit logic families and their electric characteristics; drive capability and fan-out of TTL and CMOS devices; Tri-state buffers, and Open-collector outputs. Mixing logic families; Hazard detection and prevention; designing digital systems using Programmable Logic Devices (PLD); digital systems design using Algorithmic State Machine (ASM) charts. The second part of this course focuses on the design of combinational and sequential networks using VHDL. Students will learn how to use the top-down design techniques to analyze, design, simulate, verify, and synthesize complex digital circuits using modern CAD tools. Prerequisites: EG 2341 and EG 2141W; Co-requisite: EG 2181W.

## **Artificial Intelligence (3)**

EG 2390

Introduction to Artificial Intelligence. Search techniques, knowledge representation, game playing, predicate logic. Knowledge representation using rules, expert systems, neural networks, and genetic algorithms. Coverage of an AI-specific programming language and/or AI integrated software. Prerequisite: EG 1304 or EG 1302.

## **Expert Systems and Applications (3)**

EG 2393

Fundamentals of expert systems. Knowledge representation using production rules. Knowledge acquisition and development of a knowledge base. Backward and forward chaining. Uncertainty. Development, testing, and validation of expert systems. Prerequisite: EG 1302 or EG 1304.

## **Circuits and Systems Lab (1)**

EG 3145

Basis of electrical measurements and technical report writing. Experimental verification and applications of circuit theorems and laws including the current divider, the voltage divider, and Thevenin's theorem; the application of the cathode ray oscilloscope; the analysis of the transient response of RC and RL circuits; applications of operational amplifiers in the design of summing, amplification, and comparator circuits; design of diode-clamping circuits; implementation and analysis of frequency response of filter circuits. This is a writing-intensive course. This course cannot be taken for credit by electrical engineering or computer engineering majors. Prerequisite: EG 3345

## **Electronics I Lab (1)**

EG 3156

DC circuits; the diode as a nonlinear device; the oscilloscope; RC circuits; RC filters; LC resonant circuit; rectifier; signal diodes; diode clamp; emitter follower; current source; common emitter amplifier; transistor as a switch; op-amp open-loop gain; inverting and non-inverting op-amps; op-amp follower and current source; summing amplifier; op-amp as an integrator, a differentiator, an active rectifier, and an active clamp; FET transistor; FET current source and source follower; FET as a voltage-controlled resistance; amplitude modulation and AM radio; input and output characteristics of integrated gates: TTL and CMOS. Pre-requisite: EG 2152W; corequisite: EG 3356.

# ELECTRICAL ENGINEERING

## **Electronics II Lab (1)**

EG 3157

Flip-flops; counters; shift registers; the cascading 16-bit counter with added display and keypad; programmable divide-by-n counters; period meters; capacitance meters; memory; RAM; divide-by-3; memory-based state machines; the dynamic diode curve tracer; the grounded emitter amplifier; current sources; the Ebers-Moll model; push-pull amplifiers; differential amplifiers; the bootstrap circuit; the Miller effect; the Darlington pair; the super beta; the analog switch and its applications: chopper circuits; sample-and-hold circuits; switched capacitor filters; voltage inverter circuits; A/D and D/A converters; the phase-locked loop circuit; the frequency multiplier. Prerequisite: EG 3156W; Co-requisite: EG 3357.

## **Human Factors (3)**

EG 3316

Integration of the human component into the design, development, and evaluation of human-machine systems. Ergonomic and human factors research methodology. A term project featuring the design of a human-machine system from an ergonomic/human factors perspective is required.

## **Industrial Statistics (3)**

EG 3322

Introduction to probability and statistics; descriptive statistics; random variables; sampling; distributions; hypothesis testing; linear regression and correlation; goodness-of-fit tests; design of experiments and analysis of variance. Pre-requisite: MT2413

## **Lean Production Systems (3)**

EG 3333

Principles and methods of analysis and design of service, production, and manufacturing facilities. Plant layout. Assembly line balancing. Material handling. Lean and just-in-time. Forecasting. Inventory control. Aggregate planning. Materials requirement planning. Theory of constraints. Prerequisite: MT 2413.

## **Engineering Economy (3)**

EG 3334

Overview of finance/accounting concepts. Fundamental principles and methods for economic analysis of technical alternatives leading to decision making under deterministic and uncertain conditions. The effects of interest, taxation, depreciation, and inflation. Prerequisite: MT 2413 Calculus II.

## **Optimization (3)**

EG 3335

Introduction to mathematical programming. Linear program formulations. Optimization of linear programs using the graphical method, simplex method and special implementations of the simplex method. Duality. Sensitivity analysis. Transportation and assignment problems. Introduction to integer programming. Integer program formulations. Co-requisite: MT 2413.

## **Applied Optimi. & Analysis (3)**

EG 3336

Introduction to network optimization. Network representation and solution algorithms for minimum spanning tree, shortest path, minimum cost network flow and maximum flow - minimum cut problems.

# ELECTRICAL ENGINEERING

Scheduling of projects using CPM/PERT. Formulation and solution of dynamic programming problems. Introduction to heuristics and meta-heuristics. Introduction to stochastic modeling. Markov chains, Chapman-Kolmogorov equations and classification of states. Introduction to queuing systems. Birth-death processes, queuing networks and queuing decision models. Prerequisites: EG 3332 or MT 4331.

## **Supply Chain Management (3)**

EG 3337

Fundamental concepts and theory for the treatment of the principles, models, and techniques for supply chain management planning, analysis, and design. Supply chain business processes, process metrics, and common, good and best practices in supply chain management. Multi-echelon inventory models, channel coordination, supply contracts and negotiations, supply chain disruptions/risk management, pricing, logistics network design, vehicle routing, reverse logistics, closed-loop supply chains, global manufacturing & distribution, supply chain profitability optimization. Decision making under uncertainty for optimal profitability in the context of global outsourcing, international logistics, and international trade treaties. Prerequisite: EG 3333

## **Circuits and Systems (3)**

EG 3345

An introduction to the theory and applications of electrical circuits, devices and systems; review of basic physics involving resistors, inductors, and capacitors; electrical units and measurements; analysis of dc circuits; analysis of the transient response to RL and RC switching circuits; introduction to ac circuit analysis; the frequency response; diodes, rectifiers and wave-shaping circuits; applications of operational amplifiers. This course may not be taken for credit by electrical engineering or computer engineering majors. Prerequisite: PY 2404; Co-requisite: MT 3311

## **Software Design & Archi (3)**

EG 3350

This course introduces basic concepts and principles about software design and software architecture. Study of design concepts and notations. Architecture, middleware architectures, design patterns, frameworks and components. Designing for qualities such as performance, security, reusability, reliability. Techniques for designing, building, and evaluating software architectures. Prerequisite: CS 3340 and EG 2311.

## **Software Project Management (3)**

EG 3351

This course introduces concepts deemed central to effective management of software projects. Software systems engineering, process management and control, and project planning and management. Using specifications and descriptions, making use of structured and object-oriented techniques, completing reviews and audits, confirming product development with planned verifications, and validations and testing. Management of expectations. Release and configuration management. Software process standards and process implementation. Software contracts and intellectual property. Prerequisite: CS 3340.

## **Software Qual Assurance & Test (3)**

EG 3352

This course provides an introduction to software quality assurance and testing. Quality assurance process and its role in software development. Measuring software quality and software quality standards. In

# ELECTRICAL ENGINEERING

spections and formal technical reviews. Testing, verification, and validation techniques. Black-box and white-box testing. The automation of software testing. A team-based software development project is required in which students apply learned techniques. Prerequisite: CS3340.

## **Electronics I (3)**

EG 3356

Physical properties of diodes and p-n junctions; Diode circuits; physical properties of Metal-Oxide Field Effect Transistors (MOSFET); amplification circuits using MOSFET; NMOS; PMOS and CMOS devices; physical properties of Junction Field Effect Transistors (JFET); electronic circuits using JFET; physical properties of Bipolar Junction Transistors (BJT); amplification circuits using BJT; switching circuits using cut off and saturation modes of BJT. Prerequisite: EG2352.

## **Electronics II (3)**

EG 3357

The second part of a two-semester course sequence, which focuses on analog electronic circuits. Differential and multi-stage amplifiers; feed back in amplifier circuits; frequency response of different amplifiers; the four basic feedback topologies in amplifiers; various output stages; power amplifiers; and the complete analysis of the 741 operational amplifier circuit. The MultiSIM circuit analyzer software package is heavily utilized. Prerequisite: EG 3356; co-requisite: EG 3157W.

## **Microprocessors I (3)**

EG 3363

This is the first part of a two-semester course sequence that is intended to familiarize students with the development of microcontroller-based products. The first goal of the course is to teach students the skills of assembly language programming in general and the HCS12 Motorola microcontroller in particular. The second goal of the course is to introduce and familiarize students with different architecture and hardware design in microcontrollers using HCS12 as a model. The course is accompanied by laboratory assignments throughout the semester. Prerequisites: EG 1302/04, EG 2341.

## **Microprocessors II (3)**

EG 3364

The second part of a two-semester course sequence is intended to familiarize students with the development of microcontroller-based products. Concepts covered in this course include interfacing; timing diagrams and synchronization for handshake purposes. The course utilizes all the onboard functionalities of the Mc9S12DP256 microcontroller such as the A/D converter; synchronous and asynchronous serial interfaces; a timer module with input capture, output compare, and pulse accumulator capabilities; PWM; controller area network (CAN); and a variety of input and output ports. The course includes six or seven practical data acquisition and control projects based on the HCS12 microcontroller. Pre-requisites: EG 3363.

## **Electromagnetic Theory (3)**

EG 3366

Review of vector analysis, complex vectors, applications of Stokes' theorem and the divergence theorem, Maxwell's equations, the Lorentz force law, Poynting's theorem, electrostatics, introduction to magnetostatics, Faraday's law, time-varying electromagnetic fields, propagation of time-harmonic plane waves, wave attenuation in conductive and dissipative media, dispersion. Introduction to transmission

# ELECTRICAL ENGINEERING

lines. Prerequisites: PY2404, MT3311, MT3315, EG2352. Co-requisite: EG2353

## **Semiconductor Devices (3)**

EG 3368

Review of quantum mechanics; introduction to crystallography; energy band and charge carriers; physical properties of the p-n junction; physical properties of diodes; physical behavior of Bipolar Junction Transistors (BJT) in active, saturation and cut-off modes. Prerequisites: EG3356 and senior standing.

## **Signals and Systems (3)**

EG 3372

Continuous signal and system modeling, properties of linear, time-independent systems, BIBO stability, response of continuous systems to periodic and non-periodic signals, the convolution integral, theory and applications of Fourier series and Fourier transforms, power spectrum of periodic signals, energy spectrum of non-periodic signals, modulation. Prerequisite: MT3311, EG2353.

## **Computer Organi & Architecture (3)**

EG 3374

Instruction set architecture: instruction types, data types, addressing modes, instruction formats, and RISC versus CISC architectures. Basic computer organization: Central processing unit, system buses, memory subsystems, and computer peripherals. Processor design: hardwired versus micro-programmed control unit, arithmetic logic unit, pipeline design, pipeline hazards, branch prediction, register windowing, register renaming, and instruction level parallelism. Memory hierarchy: cache organizations, cache placement and replacement policies, main memory, virtual memory, and memory protection. Performance measurements. Prerequisites: EG2341, EG2382.

## **Java and Applications (3)**

EG 3392

Introduction to Java applications and Applets. Control structures. Methods of Java API packages. Declaring and allocating arrays. Object-oriented programming. Constructors and finalizers. Inheritance, super classes, and subclasses. Private, protected, and public members. Polymorphism. strings and characters. Graphics and Java 2D. Graphical User Interface (GUI) components. Layout managers. Event-driven programming. Exception handling. Multithreading. Files and streams. Networking. Accessing databases with JDBC. Servlets. Java Server Pages (JSP). Extensive use of Java programming. A term-project is required. Prerequisites: EG 1302 or EG 1304 or CS 1410, and EG 1305.

## **Computer Aided Manf&Rob Lab (1)**

EG 4132

Operations and programming of stepper and servomotors; integration of discrete-event sensors with microcomputer interfaces. Programming, simulation, implementation, and applications of industrial robots and microcontrollers. Experiments on computer numerical control (CNC) programming and coordinate measuring machines (CMM). Solid modeling on CAD. Weekly written reports on experiments are required. Co-requisite: EG 4332.

## **Energy Conversion Lab (1)**

EG 4160

Laboratory examination of the design, construction and operating characteristics of transformers and

# ELECTRICAL ENGINEERING

various types of motors and generators. Measurement of transformer parameters. The experimental investigation of the ac generator (alternator); the series, shunt, and compound dc motors; the synchronous motor; the induction motor; and the universal motor. This is a writing-intensive course. Co-requisite: EG4360

## **Adv Electronics Design Lab (1)**

EG 4166

This course includes individual design, construction and testing of analog, digital, and mixed electronics subsystems. Typical exercises include power control, oscillators, instrumentation amplifiers and applications, digital and mixed systems, communications circuits and electromechanical control systems. Prerequisite: EG 3357; Co-requisite: EG 4366.

## **Quality Control & Reliability (3)**

EG 4330

Statistical process control, interpretation of data, troubleshooting, control charts, process control, acceptance sampling. Fundamental reliability concepts, reliability functions, probabilistic engineering design. Relationship between statistical process control and total quality management (TQM). Malcolm Baldrige National Quality Award. ISO 9000. The quality gurus: Deming, Crosby, and Juran. Benchmarking. Quality function deployment. Prerequisite: MT4331 or EG3322 .

## **Manufacturing Processes (3)**

EG 4331

Geometric dimensioning and tolerancing standards. Economical and environmental considerations in manufacturing. Selection of materials. Processing methods: casting, injection molding, assembling, machining, etc. Measuring and inspection equipment and techniques. Product data management. Product design and redesign. Rapid prototyping. In-class labs and design projects are required. Prerequisite: EG2325.

## **Computer Aided Manufacturing (3)**

EG 4332

Modern manufacturing systems including automation, computer integrated manufacturing, robotics, and programmable logic controllers. Use of CAD/CAM/CAE software in analyzing industrial robots and manipulators. Design projects are required. Prerequisite: EG2325

## **Computer Simulation (3)**

EG 4337

Discrete-event simulation. Extensive use of Monte Carlo Simulation Software. Model verification and validation. Statistics of simulation. Prerequisites: EG 3322 or MT 4331

## **Special Topics I (3)**

EG 4338

## **Special Topics II (3)**

EG 4339

# ELECTRICAL ENGINEERING

## **Industrial Senior Design Proj I (3)**

EG 4340

The first course in the six-hour senior design sequence for IE, EM, SECA, and ES majors. Industry-university cooperation is required. Intended to foster a thorough understanding of the iterative engineering design process, including the recognition of needs, requirements planning, analysis and design, implementation, testing, validation, and impact on society. Prerequisites for IE majors: completion of at least 18 hours out of the following set: EG 2322, EG3333, EG3334, EG3335, EG3336, EG4132, EG4330, EG4331, EG4332, EG4337, EG3316, and either EG3322 or MT4331

## **Industrial Snr Dsgn Prjet II (3)**

EG 4341

This course is a continuation of EG4340W. Prerequisite: EG 4340W.

## **Digital Signal Processing (3)**

EG 4350

Discrete time signals & systems, z-transform, discrete Fourier transform, flow graph and matrix representation of digital filters, digital filter design techniques and computation of the fast Fourier transform (FFT). MATLAB software package is heavily utilized in this course. Prerequisite: EG 3372

## **Formal Methods of Software Eng (3)**

EG 4351

The goal of this course is to teach the formal methods of specifying and verifying software. Review of mathematical foundation for formal methods. Formal languages and techniques for specification and design, including specifying syntax using grammars and finite state machines. Analysis and verification of specification and designs. Use of assertion and proofs. Automated program and design transformation. Prerequisite: MT 3323.

## **Software Maint & Evolution (3)**

EG 4352

This course introduces maintenance methodologies and the evolution of software systems. Concepts and techniques for modifying software in evolving environments. Designing and implementing software to increase maintainability and reuse; evaluating software for change; and validating software changes. Evolution of legacy software systems. Software re-engineering, data reverse engineering. Prerequisite: CS 3340.

## **Computer Networks (3)**

EG 4356

Principles of layered communication architecture: application layer protocols, transport layer services, network layer and routing, data link layer, and physical layer. Local area networks: IEEE standard 802 for LANs (Ethernet, Token Bus, Token Ring,), Asynchronous Transfer Mode (ATM), hubs, bridges, and switches, high speed LANs, satellite and wireless LANs. Circuit switching, packet switching, and message switching, Error detection, error correction, security in computer networks, multimedia networking, and performance modeling. Prerequisite: junior standing

## **Energy Conversion (3)**



# ELECTRICAL ENGINEERING

EG 4360

Three-phase circuits, magnetic circuits, transformers, electrical-mechanical transducers, dc motors, synchronous motors, induction motors, ac generators. Theoretical principles, mathematical models, operating characteristics, and practical applications of transformers, motors, and generators are emphasized. Prerequisites: PY1404, PY2404, MT3311, EG2352, EG2353.

## **Comp & Elect Snr Design Proj I (3)**

EG 4362

This is a first course in the six-hour senior design sequence for EE and CE majors. It is intended to foster a thorough understanding of the engineering design process, from the recognition of a need and the definition of design objectives through implementation and troubleshooting. Industry-university cooperation is encouraged. This course requires proposal submission, alternative design consideration, status briefings, implementation, budgeting, and the preparation of a comprehensive final written report and oral presentation by the students. Prerequisites: Senior standing; EG 3357; EG 3364.

## **Comp & Elect Snr Design Prj II (3)**

EG 4363

This course is a continuation of EG 4362W. Prerequisite: EG 4362W.

## **Advanced Elec Design (3)**

EG 4366

This is a practical design course at the integrated circuit level. The topics include operational amplifier applications, feedback, active filters, oscillators, voltage regulators, linear and switching power supplies, precision and low noise techniques, and digital circuits. Prerequisite: EG 3357.

## **Control Systems (3)**

EG 4369

Introduction to the fundamentals of automatic control systems including the analysis and design of control systems for various engineering applications. Topics include modeling of physical systems using both transfer function and state space models. System responses, performance and design criteria. Control system characteristics, stability, sensitivity, steady state errors and transient response. Stability analyses using Routh-Hurwitz, Root-locus, Nyquist, and Bode methods. Lead and lag compensators and PID controllers design using root-locus method; Frequency-response analysis. MATLAB and SIMULINK are used to aid in the analysis and design of control systems. The laboratory work is designed to introduce the student to modern techniques needed for the design and implementation of automatic control systems. Prerequisite: EG3372 Signals and Systems

## **Communication Theory (3)**

EG 4370

Introductory information theory; frequency response of linear systems; analog-to-digital conversion; time multiplexing of signals; Pulse Amplitude Modulation (PAM); Pulse Code Modulation (PCM); quantization noise; Amplitude Modulation (AM) and Frequency Modulation (FM) techniques. Prerequisite: EG3372

## **SECA & ES Senior Dsgn Proj I (3)**

EG 4395

# ELECTRICAL ENGINEERING

The first course in the six-hour senior design project sequence for Software Engineering and Engineering Science majors. It fosters a thorough understanding of a comprehensive effort, iterative and incremental in nature, involving problem identification, requirements planning, proposal preparation, analysis, preliminary design, detailed design, development, implementation, and testing. Frequent oral presentations and written report upgrades are expected. Industry-University cooperation is encouraged. Students have a final professional oral presentation and submit a comprehensive report. Prerequisites: senior standing and consent of the academic adviser.

## **SECA & ES Senior Dsgn Proj II (3)**

EG 4396

Continuation of EG 4395W. Prerequisite: EG 4395W.

# ENGINEERING MANAGEMENT

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Engineering

## Department Chair

Bahman Rezaie, Ph.D. [brezaie@stmarytx.edu](mailto:brezaie@stmarytx.edu)

## Description of Program/Major

Successful engineering managers- in manufacturing, the military, or other industries- use powerful analytic metrics and methods to solve complex problems. The engineering management program at St. Mary's University provides an opportunity for future engineers and scientists to enhance their knowledge in the area of scientific management.

Graduates apply their skills in engineering management to solve problems; assess an engineering management study; and lead decision-making processes.

Unique facilities available to engineering management students include an electrical engineering laboratory accessible 24-hours a day; an energy conversion laboratory for motors, generators and transformers; a manufacturing and robotics laboratory; and a research laboratory equipped with both UNIX and Windows workstations.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3

# ENGINEERING MANAGEMENT

SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# ENGINEERING MANAGEMENT

St. Mary's University

BS Engineering Management (EM) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
	Fall	Hr		Spring	Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1311 Foundations of Reflection: Self	3
—	EN 1311 Rhetoric & Composition <sup>2</sup>	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	EG 1304 Engineering Programming	3	—	EG 1301 Engineering Graphics & Design <sup>4</sup>	3
—	MT 2412 Univariate Calculus I	4	—	MT 2413 Univariate Calculus II	4
—	PY1404 Mechanics, Heat, Acoustics	4	—	PY2404 Electricity, Magnetism, Optics	4
—	ND 0101 Personal & Academic Development	0	—		
	Total	17		Total	17
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	SMC 1314 Foundations of Reflection: God	3	—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
—	AC 2310 Introduction to Accounting I	3	—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
—	EG 2307 Engineering Mechanics	3	—	AC 2320 Introduction to Accounting II	3
—	EG Block #1	3	—	EG Block #2	3
	Total	15		Total	15
Third Year Courses					
—	EG 3345 Circuits & Systems I	3	—	SMC 2304 Foundation of Practice: Literature Advanced Theology <sup>5</sup>	3
—	EG 4330 Quality Control & Reliability	3	—	EG 3145 Circuits & Systems Lab	1
—	FN 3310 Corporate Finance	3	—	MK 3310 Principles of Marketing	3
—	MT 4331 Probability and Statistics I	3	—	MN 3330 Organizational Behavior	3
—	BA Block #1	3	—	BA Block #2	3
	Total	15		Total	16
Fourth Year Courses					
—	Foreign Language <sup>6</sup>	3	—	SMC 4301 Capstone Seminar-Senior Design Project II	3
—	EG 3333 Production Planning and Design	3	—	Foreign Language <sup>6</sup>	3
—	EG 4362 Senior Design Project I <sup>1</sup>	3	—	EG 3334 Engineering Economy <sup>3</sup>	3
—	MN 3320 Business Communications	3	—	BA Block #3	3
—	QM 3340 Project Management	3	—	EG Block #3	3
	Total	15		Total	15

Total Hours 125

<sup>1</sup>Speech Requirement: EG 4362 Senior Design Project 1

<sup>2</sup>Rhetoric and Composition Requirement (Must be "C" or better): EN 1311 or EN 1313 (international students)

<sup>3</sup>Social Science Requirement: EG 3334 Engineering Economy

<sup>4</sup>Fine Arts Requirement: EG 1301 Engineering Graphics & Design

<sup>5</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

<sup>6</sup>Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school. Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge. Or, 12 hours of CLEP credit.

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

EG Block : Students will choose 9-10 hours from EG2322, 3335, 3336, 4337, 4331, 4332, 4332 lab

BA Block Options: Students will choose 9 hours from the following, with no more than six hours from any one area.

Accounting – 3310, 3320, 3341, 4306, 4350, 4360

Finance – 3330, 3340, 4320, 4360, 4380

Entrepreneurial St. – 4100, 4110, 4120, 4130, 4140, 4150, 4160, 4170, 4180, 4190, 4195, 4391, 4396

Information System Management – 3342, 3360, 4340

Marketing – 3340, 3370, 3380, 4300, 4320

Management – 3360 (Leadership), 3380 (Innovation), 4300 (Topics), 4330 (neg/conflict), 4360 (Dec. Making), 4370 (service man)

International Business – 3321W and 4351, 4352, 4355, 4358, 436x, 4372

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# ENGINEERING MANAGEMENT

St. Mary's University  
BS Engineering Management (EM) Degree Plan – 2010  
125 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization (Senior Design Project II)	3

## School of Science, Engineering, and Technology Specific Core (21 Hours)

__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Fine Arts – EG 1301 Graphics Design	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit.	6
__ Social Science – EG 3334 Engineering Economy	3
__ Speech – EG 4362 Senior Design Project 1	3
__ Theology – Advanced Theology 33XX	3

## BS Engineering Management Major Courses (74 hours)

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

__ AC 2310 – Introduction to Accounting I	3
__ AC 2320 – Introduction to Accounting II	3
__ EG 1304 – Engineering Programming	3
__ EG 2307 – Engineering Mechanics	3
__ EG 3145 – Circuits and Systems Lab	1
__ EG 3333 – Production Planning and Design	3
__ EG 3345 – Circuits and Systems	3
__ EG 4330 – Quality Control and Reliability	3
__ FN 3310 – Corporate Finance	3
__ MK 3310 – Principles of Marketing	3
__ MN 3320 – Business Communications	3
__ MN 3330 – Organizational Behavior	3
__ QM 3340 – Project Management	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 4331 – Probability and Statistics I	3
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4
__ EG Block #1	3
__ EG Block #2	3
__ EG Block #3	3
__ BA Block #1	3
__ BA Block #2	3
__ BA Block #3	3

## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# ENGINEERING MANAGEMENT

## Department Courses and Descriptions

### **Intro to Computer/Ele E I (1)**

EG 1101

Introduction to electrical/computer engineering consist of two 1-hour course sequence directed at incoming freshmen. The two courses focus on MATLAB and its application to engineering problems. In the first course, EG1101, the basic MATLAB features are covered. This includes MATLAB help utility, MATLAB environment and desktop, all MATLAB windows and their functionalities, solving simple problems using MATLAB, preliminary graphing capabilities of MATLAB, m-file development, debugging m-files with MATLAB, solving more sophisticated engineering problems with MATLAB. Pre-requisite: none.

### **Intro to Computer/ EE II (1)**

EG 1102

Introduction to electrical/computer engineering consist of two 1-hour course sequence directed at incoming freshmen. The two courses focus on MATLAB and its application to engineering problems. In the second course, EG1102, the more advanced MATLAB features are covered. This includes m-file and its debugging features, flow control in MATLAB, more advanced usage of MATLAB help utilities, more advanced MATLAB commands, MATLAB toolboxes, solving advanced engineering and scientific problems using MATLAB, more advanced graphing capabilities of MATLAB. Pre-requisite: EG 1101.

### **Engineering Graphics and Design (3)**

EG 1301

Introduction to drawing instruments, lettering, and sketching. Work drawings: pictorials, orthographic projection, dimensioning, sections, and auxiliary views. Descriptive geometry: points, lines, planes, revolutions, intersections, etc. Use of Computer Aided Design (CAD) software. Introduction to engineering design. Several design projects are developed. Prerequisite: none.

### **Programming for Engineers (3)**

EG 1302

The goal of this course is to provide students with a working knowledge of C programming language as defined by the ANSI standard. This class does not just focus on the C language syntax and program constructs. It will also emphasize good programming habits in developing a well-structured code. The concepts that will be presented in this course include: programming environment; basic C program structure; variables, constants and operators; looping with for, while, and do while statements; decision-making constructs (if, if/else, switch, and conditional expression statements); using and writing functions; using arrays, pointers and combination thereof; string operations/functions; performing file I/O; using the preprocessor directives; and using modular development methodology. Prerequisite: none.

### **Object-Oriented Program & Desig (3)**

EG 1305

Introduction to object-oriented programming, classes, objects, data members (class attributes), methods (member functions or class behavior), data abstraction, and encapsulation. Software reuse. Constructors, destructors, and inheritance. Operator overloading. Virtual functions and polymorphism. Stream Input/Output. The preprocessor. Object-oriented analysis and design methodologies and their role in the software development process. The Unified Modeling Language (UML) as a design and development

# ENGINEERING MANAGEMENT

tool. Extensive use of OOP programming is required. A class project is included requiring use of the UML to develop a sizable software application. A professional oral presentation and a well-written report are required. Prerequisite: EG 1302 or EG 1304 or CS 1410.

## **Engineering Seminars (0)**

EG 2010

The engineering seminars provides students exposure to outside speakers and a review of recent developments in science and engineering. Prerequisite: none.

## **Logic Design Laboratory (1)**

EG 2141

This lab introduces the basic principles of digital electronic design using standard TTL devices. Experiments illustrate the principles learned in the Fundamentals of Logic Design (EG 2341) class. The first part of this laboratory focuses on the design of combinational networks. This includes the basic operation of various logic gates; verification of truth tables; minimization of logic functions; realization of digital functions using multiple stage networks, decoders, multiplexer, and read-only memory. The second part of this lab emphasizes the design of sequential network. Here, students are introduced to various types of flip-flops, counters; design of digital circuits using Finite State Machines. Co-requisite: EG 2341.

## **Circuit Analysis Laboratory (1)**

EG 2152

This lab is geared towards students who are taking electrical engineering laboratory for the first time. The lab is divided into two parts: First part covers introductory concepts and basic measurements in electrical circuits. Second part is dedicated to circuit theorems; transient response of circuits composed of resistors, capacitors, and inductors; AC steady state; frequency response (PHASORS); and the characteristics of operational amplifiers in electrical circuits. Co-requisite: EG 2353.

## **Digital Systems Design Lab (1)**

EG 2181

Experiments illustrate the principles learned in the Digital Systems Design (EG 2382) class. The first part of this laboratory focuses on the design of sequential networks using 7400 series TTL and CMOS devices. This includes comparing the electric characteristics; drive capability and fan-out of TTL and CMOS devices; Tri-state buffers, and Open-collector outputs. The second part of this laboratory emphasizes the more recent digital systems design techniques that use modern CAD tools that support Hardware Design Languages such as VHDL. Many laboratory experiments introduce students to various VHDL sequential and concurrent constructs. Students learn how to simulate, verify, and synthesize their designs using state-of-the-art CAD tools. Prerequisites: EG 2341 and EG 2141W; Co-requisite: EG 2382.

## **High Technology & Society (3)**

EG 2300

Exploration of the social, economic, and political impact of modern science and technology. The ethical nature of scientific research and technological development. Exploration of recent scientific discoveries and technological applications. This course may be counted for physical science credit for social science majors and social science credit for SET majors.



# ENGINEERING MANAGEMENT

## **Principles of Materials Scienc (3)**

EG 2306

A study of the atomic and crystalline structure of solids including the theory of X-ray diffraction, solid solutions, diffusion, and phase transformations. The behavior of matters based on their mechanical, electrical, thermal, magnetic, and optical properties. Point defects, dislocation theory. Prerequisites: CH 1401, PY 2404, MT 2412.

## **Engineering Mechanics (3)**

EG 2307

Fundamentals of statics, vector methods, concentrated and distributed force systems, methods of moments for extended rigid structures, static equilibrium of structures. Prerequisites: PY 1404, MT 2412.

## **Strength of Materials (3)**

EG 2308

Mechanical properties of materials: normal and shear stress, normal and shear strain. Separate treatments of axial load, torsion, and bending. Bending and shearing stresses in beams. Deflection in homogeneous beams. Design of members by strength criteria. Prerequisite: EG 2307, MT2413.

## **Fluid Mechanics (3)**

EG 2309

Forces and energy generated by liquids and gasses at rest and in motion. Fundamental laws of fluid behavior: conservation of mass, energy, and momentum. Differential and finite control volume approaches for flow analysis. Steady, incompressible flow. Prerequisites: MT 3311, PY 2404, EG 2307.

## **Human Computer Interaction (3)**

EG 2310

The goal of this course is to teach the fundamentals of human-computer interface in software design and development. Students learn to design, implement and evaluate effective and usable graphical computer interfaces. Design of windows, menus, and commands. Voice and natural language I/O. Response time and feedback. Color, icons, and sound. Students work on individual and team projects to de sign, implement and evaluate computer interfaces. Prerequisite: EG1302 or EG1304 or CS 1410.

## **Software Requirement Eng (3)**

EG 2311

This course provides an introduction to the fundamentals of software requirements management. Topics covered include requirements gathering, system modeling and software specifications. The major emphasis is on using a variety of modeling tools and techniques to define a system specification. Languages and models for representing requirements. Analysis and valida tion techniques, including need, goal, and use case analysis. Students participate in a group project on software requirements. Prerequisite: EG 1302 or EG 1304 or CS 1410.

## **Work Design & Product Measure (3)**

EG 2322

Industrial engineering tools and concepts for engineering problem solving. Work design and methods engineering. Work measurement and work sampling, productivity measurement, incentives, standard time techniques. In-class labs and design projects are required. Prerequisites: none.

# ENGINEERING MANAGEMENT

## **Industrial Automation & Control (3)**

EG 2325

Logic-structured and icon-driven programming. Introduction to industrial field devices for control and automation. Number systems and codes. Digital and analogue signals. Interposing relay control. Timers, counters, and data compare instructions. In-class labs and design projects are required. Prerequisite: EG1302, EG1304, CS1410, or CS 1411.

## **Fundamentals of Logic Design (3)**

EG 2341

The first half of this course focuses on combinational network design. This includes the number systems and conversion; Boolean algebra; minimization of switching functions using Karnaugh maps; multi-level gate networks; multi-output networks; realizing Boolean functions using multiplexers, decoders, read-only memories, and programmable logic devices. The second half of this course focuses on the analysis and the design of sequential network. Topics covered in this part of the course include flip-flops; designing counters using different type of flip-flops; analysis of sequential networks; derivation of state graphs and tables; introduction to Finite State Machines; minimization of state tables; guidelines for state assignment; derivation of flip-flop input equations, and realization of sequential networks. Co-requisite: EG 2141W.

## **Data Structures & Algorithms (3)**

EG 2342

This course provides an introduction to the design and analysis of computer data structures and algorithms, focusing in particular on techniques for achieving high performance software in computer systems. Students will learn the necessary mathematical background to carry out algorithm analysis, such as time and space complexity, worst-case and average-case analysis, tractability & intractability, and design techniques. It discusses recursion and recurrence relations, asymptotic notations, basic data structures, dynamic dictionaries, balanced trees, priority queues, and graphs. The specific data structures which will be discussed in class include linked lists, stack, heaps, self-organizing lists, binary search trees, hash tables, AVL trees, red-black trees, balanced trees, leftist trees, minimum spanning trees, and others. Prerequisite: EG1302 or EG1304

## **Circuit Analysis I (3)**

EG 2352

Basic circuit elements and models; resistive circuits; circuit theorems; loop and nodal analysis of resistive networks; techniques of analysis of operational amplifiers; analysis of circuits with energy storage elements (capacitors and inductors); natural and step response of RL; RC; and RLC circuits. Prerequisite: PY2404. Co-requisite: MT3311.

## **Circuit Analysis II (3)**

EG 2353

The goal of this course is to provide students with a working knowledge of phasor diagrams; sinusoidal steady-state power analysis and complex load matching; series and parallel resonance; Laplace transform and its applications in circuit analysis: the step function, the impulse function, inverse transforms, initial and final value theorems, and circuit analysis in the s-domain. Transfer functions and Bode diagrams are also included. Prerequisites: EG 2352, MT 3311.

# ENGINEERING MANAGEMENT

## **Digital Systems Design (3)**

EG 2382

The first part of this course presents a quick review of sequential network design concepts as presented in the pre-requisite course on Fundamentals of Logic Design (EG 2341); iterative networks; integrated circuit logic families and their electric characteristics; drive capability and fan-out of TTL and CMOS devices; Tri-state buffers, and Open-collector outputs. Mixing logic families; Hazard detection and prevention; designing digital systems using Programmable Logic Devices (PLD); digital systems design using Algorithmic State Machine (ASM) charts. The second part of this course focuses on the design of combinational and sequential networks using VHDL. Students will learn how to use the top-down design techniques to analyze, design, simulate, verify, and synthesize complex digital circuits using modern CAD tools. Prerequisites: EG 2341 and EG 2141W; Co-requisite: EG 2181W.

## **Artificial Intelligence (3)**

EG 2390

Introduction to Artificial Intelligence. Search techniques, knowledge representation, game playing, predicate logic. Knowledge representation using rules, expert systems, neural networks, and genetic algorithms. Coverage of an AI-specific programming language and/or AI integrated software. Prerequisite: EG 1304 or EG 1302.

## **Expert Systems and Applications (3)**

EG 2393

Fundamentals of expert systems. Knowledge representation using production rules. Knowledge acquisition and development of a knowledge base. Backward and forward chaining. Uncertainty. Development, testing, and validation of expert systems. Prerequisite: EG 1302 or EG 1304.

## **Circuits and Systems Lab (1)**

EG 3145

Basis of electrical measurements and technical report writing. Experimental verification and applications of circuit theorems and laws including the current divider, the voltage divider, and Thevenin's theorem; the application of the cathode ray oscilloscope; the analysis of the transient response of RC and RL circuits; applications of operational amplifiers in the design of summing, amplification, and comparator circuits; design of diode-clamping circuits; implementation and analysis of frequency response of filter circuits. This is a writing-intensive course. This course cannot be taken for credit by electrical engineering or computer engineering majors. Prerequisite: EG 3345

## **Electronics I Lab (1)**

EG 3156

DC circuits; the diode as a nonlinear device; the oscilloscope; RC circuits; RC filters; LC resonant circuit; rectifier; signal diodes; diode clamp; emitter follower; current source; common emitter amplifier; transistor as a switch; op-amp open-loop gain; inverting and non-inverting op-amps; op-amp follower and current source; summing amplifier; op-amp as an integrator, a differentiator, an active rectifier, and an active clamp; FET transistor; FET current source and source follower; FET as a voltage-controlled resistance; amplitude modulation and AM radio; input and output characteristics of integrated gates: TTL and CMOS. Pre-requisite: EG 2152W; corequisite: EG 3356.

# ENGINEERING MANAGEMENT

## **Electronics II Lab (1)**

EG 3157

Flip-flops; counters; shift registers; the cascading 16-bit counter with added display and keypad; programmable divide-by-n counters; period meters; capacitance meters; memory; RAM; divide-by-3; memory-based state machines; the dynamic diode curve tracer; the grounded emitter amplifier; current sources; the Ebers-Moll model; push-pull amplifiers; differential amplifiers; the bootstrap circuit; the Miller effect; the Darlington pair; the super beta; the analog switch and its applications: chopper circuits; sample-and-hold circuits; switched capacitor filters; voltage inverter circuits; A/D and D/A converters; the phase-locked loop circuit; the frequency multiplier. Prerequisite: EG 3156W; Co-requisite: EG 3357.

## **Human Factors (3)**

EG 3316

Integration of the human component into the design, development, and evaluation of human-machine systems. Ergonomic and human factors research methodology. A term project featuring the design of a human-machine system from an ergonomic/human factors perspective is required.

## **Industrial Statistics (3)**

EG 3322

Introduction to probability and statistics; descriptive statistics; random variables; sampling; distributions; hypothesis testing; linear regression and correlation; goodness-of-fit tests; design of experiments and analysis of variance. Pre-requisite: MT2413

## **Lean Production Systems (3)**

EG 3333

Principles and methods of analysis and design of service, production, and manufacturing facilities. Plant layout. Assembly line balancing. Material handling. Lean and just-in-time. Forecasting. Inventory control. Aggregate planning. Materials requirement planning. Theory of constraints. Prerequisite: MT 2413.

## **Engineering Economy (3)**

EG 3334

Overview of finance/accounting concepts. Fundamental principles and methods for economic analysis of technical alternatives leading to decision making under deterministic and uncertain conditions. The effects of interest, taxation, depreciation, and inflation. Prerequisite: MT 2413 Calculus II.

## **Optimization (3)**

EG 3335

Introduction to mathematical programming. Linear program formulations. Optimization of linear programs using the graphical method, simplex method and special implementations of the simplex method. Duality. Sensitivity analysis. Transportation and assignment problems. Introduction to integer programming. Integer program formulations. Co-requisite: MT 2413.

## **Applied Optimi. & Analysis (3)**

EG 3336

Introduction to network optimization. Network representation and solution algorithms for minimum spanning tree, shortest path, minimum cost network flow and maximum flow - minimum cut problems.

# ENGINEERING MANAGEMENT

Scheduling of projects using CPM/PERT. Formulation and solution of dynamic programming problems. Introduction to heuristics and meta-heuristics. Introduction to stochastic modeling. Markov chains, Chapman-Kolmogorov equations and classification of states. Introduction to queuing systems. Birth-death processes, queuing networks and queuing decision models. Prerequisites: EG 3332 or MT 4331.

## **Supply Chain Management (3)**

EG 3337

Fundamental concepts and theory for the treatment of the principles, models, and techniques for supply chain management planning, analysis, and design. Supply chain business processes, process metrics, and common, good and best practices in supply chain management. Multi-echelon inventory models, channel coordination, supply contracts and negotiations, supply chain disruptions/risk management, pricing, logistics network design, vehicle routing, reverse logistics, closed-loop supply chains, global manufacturing & distribution, supply chain profitability optimization. Decision making under uncertainty for optimal profitability in the context of global outsourcing, international logistics, and international trade treaties. Prerequisite: EG 3333

## **Circuits and Systems (3)**

EG 3345

An introduction to the theory and applications of electrical circuits, devices and systems; review of basic physics involving resistors, inductors, and capacitors; electrical units and measurements; analysis of dc circuits; analysis of the transient response to RL and RC switching circuits; introduction to ac circuit analysis; the frequency response; diodes, rectifiers and wave-shaping circuits; applications of operational amplifiers. This course may not be taken for credit by electrical engineering or computer engineering majors. Prerequisite: PY 2404; Co-requisite: MT 3311

## **Software Design & Archi (3)**

EG 3350

This course introduces basic concepts and principles about software design and software architecture. Study of design concepts and notations. Architecture, middleware architectures, design patterns, frameworks and components. Designing for qualities such as performance, security, reusability, reliability. Techniques for designing, building, and evaluating software architectures. Prerequisite: CS 3340 and EG 2311.

## **Software Project Management (3)**

EG 3351

This course introduces concepts deemed central to effective management of software projects. Software systems engineering, process management and control, and project planning and management. Using specifications and descriptions, making use of structured and object-oriented techniques, completing reviews and audits, confirming product development with planned verifications, and validations and testing. Management of expectations. Release and configuration management. Software process standards and process implementation. Software contracts and intellectual property. Prerequisite: CS 3340.

## **Software Qual Assurance & Test (3)**

EG 3352

This course provides an introduction to software quality assurance and testing. Quality assurance process and its role in software development. Measuring software quality and software quality standards. In

# ENGINEERING MANAGEMENT

spections and formal technical reviews. Testing, verification, and validation techniques. Black-box and white-box testing. The automation of software testing. A team-based software development project is required in which students apply learned techniques. Prerequisite: CS3340.

## **Electronics I (3)**

EG 3356

Physical properties of diodes and p-n junctions; Diode circuits; physical properties of Metal-Oxide Field Effect Transistors (MOSFET); amplification circuits using MOSFET; NMOS; PMOS and CMOS devices; physical properties of Junction Field Effect Transistors (JFET); electronic circuits using JFET; physical properties of Bipolar Junction Transistors (BJT); amplification circuits using BJT; switching circuits using cut off and saturation modes of BJT. Prerequisite: EG2352.

## **Electronics II (3)**

EG 3357

The second part of a two-semester course sequence, which focuses on analog electronic circuits. Differential and multi-stage amplifiers; feed back in amplifier circuits; frequency response of different amplifiers; the four basic feedback topologies in amplifiers; various output stages; power amplifiers; and the complete analysis of the 741 operational amplifier circuit. The MultiSIM circuit analyzer software package is heavily utilized. Prerequisite: EG 3356; co-requisite: EG 3157W.

## **Microprocessors I (3)**

EG 3363

This is the first part of a two-semester course sequence that is intended to familiarize students with the development of microcontroller-based products. The first goal of the course is to teach students the skills of assembly language programming in general and the HCS12 Motorola microcontroller in particular. The second goal of the course is to introduce and familiarize students with different architecture and hardware design in microcontrollers using HCS12 as a model. The course is accompanied by laboratory assignments throughout the semester. Prerequisites: EG 1302/04, EG 2341.

## **Microprocessors II (3)**

EG 3364

The second part of a two-semester course sequence is intended to familiarize students with the development of microcontroller-based products. Concepts covered in this course include interfacing; timing diagrams and synchronization for handshake purposes. The course utilizes all the onboard functionalities of the Mc9S12DP256 microcontroller such as the A/D converter; synchronous and asynchronous serial interfaces; a timer module with input capture, output compare, and pulse accumulator capabilities; PWM; controller area network (CAN); and a variety of input and output ports. The course includes six or seven practical data acquisition and control projects based on the HCS12 microcontroller. Pre-requisites: EG 3363.

## **Electromagnetic Theory (3)**

EG 3366

Review of vector analysis, complex vectors, applications of Stokes' theorem and the divergence theorem, Maxwell's equations, the Lorentz force law, Poynting's theorem, electrostatics, introduction to magnetostatics, Faraday's law, time-varying electromagnetic fields, propagation of time-harmonic plane waves, wave attenuation in conductive and dissipative media, dispersion. Introduction to transmission

# ENGINEERING MANAGEMENT

lines. Prerequisites: PY2404, MT3311, MT3315, EG2352. Co-requisite: EG2353

## **Semiconductor Devices (3)**

EG 3368

Review of quantum mechanics; introduction to crystallography; energy band and charge carriers; physical properties of the p-n junction; physical properties of diodes; physical behavior of Bipolar Junction Transistors (BJT) in active, saturation and cut-off modes. Prerequisites: EG3356 and senior standing.

## **Signals and Systems (3)**

EG 3372

Continuous signal and system modeling, properties of linear, time-independent systems, BIBO stability, response of continuous systems to periodic and non-periodic signals, the convolution integral, theory and applications of Fourier series and Fourier transforms, power spectrum of periodic signals, energy spectrum of non-periodic signals, modulation. Prerequisite: MT3311, EG2353.

## **Computer Organi & Architecture (3)**

EG 3374

Instruction set architecture: instruction types, data types, addressing modes, instruction formats, and RISC versus CISC architectures. Basic computer organization: Central processing unit, system buses, memory subsystems, and computer peripherals. Processor design: hardwired versus micro-programmed control unit, arithmetic logic unit, pipeline design, pipeline hazards, branch prediction, register windowing, register renaming, and instruction level parallelism. Memory hierarchy: cache organizations, cache placement and replacement policies, main memory, virtual memory, and memory protection. Performance measurements. Prerequisites: EG2341, EG2382.

## **Java and Applications (3)**

EG 3392

Introduction to Java applications and Applets. Control structures. Methods of Java API packages. Declaring and allocating arrays. Object-oriented programming. Constructors and finalizers. Inheritance, super classes, and subclasses. Private, protected, and public members. Polymorphism. strings and characters. Graphics and Java 2D. Graphical User Interface (GUI) components. Layout managers. Event-driven programming. Exception handling. Multithreading. Files and streams. Networking. Accessing databases with JDBC. Servlets. Java Server Pages (JSP). Extensive use of Java programming. A term-project is required. Prerequisites: EG 1302 or EG 1304 or CS 1410, and EG 1305.

## **Computer Aided Manf&Rob Lab (1)**

EG 4132

Operations and programming of stepper and servomotors; integration of discrete-event sensors with microcomputer interfaces. Programming, simulation, implementation, and applications of industrial robots and microcontrollers. Experiments on computer numerical control (CNC) programming and coordinate measuring machines (CMM). Solid modeling on CAD. Weekly written reports on experiments are required. Co-requisite: EG 4332.

## **Energy Conversion Lab (1)**

EG 4160

Laboratory examination of the design, construction and operating characteristics of transformers and

# ENGINEERING MANAGEMENT

various types of motors and generators. Measurement of transformer parameters. The experimental investigation of the ac generator (alternator); the series, shunt, and compound dc motors; the synchronous motor; the induction motor; and the universal motor. This is a writing-intensive course. Co-requisite: EG4360

## **Adv Electronics Design Lab (1)**

EG 4166

This course includes individual design, construction and testing of analog, digital, and mixed electronics subsystems. Typical exercises include power control, oscillators, instrumentation amplifiers and applications, digital and mixed systems, communications circuits and electromechanical control systems. Prerequisite: EG 3357; Co-requisite: EG 4366.

## **Quality Control & Reliability (3)**

EG 4330

Statistical process control, interpretation of data, troubleshooting, control charts, process control, acceptance sampling. Fundamental reliability concepts, reliability functions, probabilistic engineering design. Relationship between statistical process control and total quality management (TQM). Malcolm Baldrige National Quality Award. ISO 9000. The quality gurus: Deming, Crosby, and Juran. Benchmarking. Quality function deployment. Prerequisite: MT4331 or EG3322 .

## **Manufacturing Processes (3)**

EG 4331

Geometric dimensioning and tolerancing standards. Economical and environmental considerations in manufacturing. Selection of materials. Processing methods: casting, injection molding, assembling, machining, etc. Measuring and inspection equipment and techniques. Product data management. Product design and redesign. Rapid prototyping. In-class labs and design projects are required. Prerequisite: EG2325.

## **Computer Aided Manufacturing (3)**

EG 4332

Modern manufacturing systems including automation, computer integrated manufacturing, robotics, and programmable logic controllers. Use of CAD/CAM/CAE software in analyzing industrial robots and manipulators. Design projects are required. Prerequisite: EG2325

## **Computer Simulation (3)**

EG 4337

Discrete-event simulation. Extensive use of Monte Carlo Simulation Software. Model verification and validation. Statistics of simulation. Prerequisites: EG 3322 or MT 4331

## **Special Topics I (3)**

EG 4338

## **Special Topics II (3)**

EG 4339



# ENGINEERING MANAGEMENT

## **Industrial Senior Design Proj I (3)**

EG 4340

The first course in the six-hour senior design sequence for IE, EM, SECA, and ES majors. Industry-university cooperation is required. Intended to foster a thorough understanding of the iterative engineering design process, including the recognition of needs, requirements planning, analysis and design, implementation, testing, validation, and impact on society. Prerequisites for IE majors: completion of at least 18 hours out of the following set: EG 2322, EG3333, EG3334, EG3335, EG3336, EG4132, EG4330, EG4331, EG4332, EG4337, EG3316, and either EG3322 or MT4331

## **Industrial Snr Dsgn Prjet II (3)**

EG 4341

This course is a continuation of EG4340W. Prerequisite: EG 4340W.

## **Digital Signal Processing (3)**

EG 4350

Discrete time signals & systems, z-transform, discrete Fourier transform, flow graph and matrix representation of digital filters, digital filter design techniques and computation of the fast Fourier transform (FFT). MATLAB software package is heavily utilized in this course. Prerequisite: EG 3372

## **Formal Methods of Software Eng (3)**

EG 4351

The goal of this course is to teach the formal methods of specifying and verifying software. Review of mathematical foundation for formal methods. Formal languages and techniques for specification and design, including specifying syntax using grammars and finite state machines. Analysis and verification of specification and designs. Use of assertion and proofs. Automated program and design transformation. Prerequisite: MT 3323.

## **Software Maint & Evolution (3)**

EG 4352

This course introduces maintenance methodologies and the evolution of software systems. Concepts and techniques for modifying software in evolving environments. Designing and implementing software to increase maintainability and reuse; evaluating software for change; and validating software changes. Evolution of legacy software systems. Software re-engineering, data reverse engineering. Prerequisite: CS 3340.

## **Computer Networks (3)**

EG 4356

Principles of layered communication architecture: application layer protocols, transport layer services, network layer and routing, data link layer, and physical layer. Local area networks: IEEE standard 802 for LANs (Ethernet, Token Bus, Token Ring,), Asynchronous Transfer Mode (ATM), hubs, bridges, and switches, high speed LANs, satellite and wireless LANs. Circuit switching, packet switching, and message switching, Error detection, error correction, security in computer networks, multimedia networking, and performance modeling. Prerequisite: junior standing

## **Energy Conversion (3)**

# ENGINEERING MANAGEMENT

EG 4360

Three-phase circuits, magnetic circuits, transformers, electrical-mechanical transducers, dc motors, synchronous motors, induction motors, ac generators. Theoretical principles, mathematical models, operating characteristics, and practical applications of transformers, motors, and generators are emphasized. Prerequisites: PY1404, PY2404, MT3311, EG2352, EG2353.

## **Comp & Elect Snr Design Proj I (3)**

EG 4362

This is a first course in the six-hour senior design sequence for EE and CE majors. It is intended to foster a thorough understanding of the engineering design process, from the recognition of a need and the definition of design objectives through implementation and troubleshooting. Industry-university cooperation is encouraged. This course requires proposal submission, alternative design consideration, status briefings, implementation, budgeting, and the preparation of a comprehensive final written report and oral presentation by the students. Prerequisites: Senior standing; EG 3357; EG 3364.

## **Comp & Elect Snr Design Prj II (3)**

EG 4363

This course is a continuation of EG 4362W. Prerequisite: EG 4362W.

## **Advanced Elec Design (3)**

EG 4366

This is a practical design course at the integrated circuit level. The topics include operational amplifier applications, feedback, active filters, oscillators, voltage regulators, linear and switching power supplies, precision and low noise techniques, and digital circuits. Prerequisite: EG 3357.

## **Control Systems (3)**

EG 4369

Introduction to the fundamentals of automatic control systems including the analysis and design of control systems for various engineering applications. Topics include modeling of physical systems using both transfer function and state space models. System responses, performance and design criteria. Control system characteristics, stability, sensitivity, steady state errors and transient response. Stability analyses using Routh-Hurwitz, Root-locus, Nyquist, and Bode methods. Lead and lag compensators and PID controllers design using root-locus method; Frequency-response analysis. MATLAB and SIMULINK are used to aid in the analysis and design of control systems. The laboratory work is designed to introduce the student to modern techniques needed for the design and implementation of automatic control systems. Prerequisite: EG3372 Signals and Systems

## **Communication Theory (3)**

EG 4370

Introductory information theory; frequency response of linear systems; analog-to-digital conversion; time multiplexing of signals; Pulse Amplitude Modulation (PAM); Pulse Code Modulation (PCM); quantization noise; Amplitude Modulation (AM) and Frequency Modulation (FM) techniques. Prerequisite: EG3372

## **SECA & ES Senior Dsgn Proj I (3)**

EG 4395

# ENGINEERING MANAGEMENT

The first course in the six-hour senior design project sequence for Software Engineering and Engineering Science majors. It fosters a thorough understanding of a comprehensive effort, iterative and incremental in nature, involving problem identification, requirements planning, proposal preparation, analysis, preliminary design, detailed design, development, implementation, and testing. Frequent oral presentations and written report upgrades are expected. Industry-University cooperation is encouraged. Students have a final professional oral presentation and submit a comprehensive report. Prerequisites: senior standing and consent of the academic adviser.

## **SECA & ES Senior Dsgn Proj II (3)**

EG 4396

Continuation of EG 4395W. Prerequisite: EG 4395W.

# ENGINEERING SCIENCE

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Engineering

## Department Chair

Bahman Rezaie, Ph.D. [brezaie@stmarytx.edu](mailto:brezaie@stmarytx.edu)

## Description of Program/Major

Engineering science at St. Mary's University provides greater flexibility than traditional programs, especially in choosing engineering electives, so that students gain a tailored education.

The program prepares students to pursue careers in multidisciplinary fields such as biomedical engineering, environmental engineering, materials sciences, pre-medicine, or other secondary areas. Engineering science is the only engineering program that allows the student to have a minor in a variety of areas. Every engineering senior also completes a year-long design project, some of which have even been patented.

Unique facilities available to engineering science students include an electrical engineering laboratory accessible 24-hours a day; an energy conversion laboratory for motors, generators and transformers; a manufacturing and robotics laboratory; and a research laboratory equipped with both UNIX and Windows workstations.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3

# ENGINEERING SCIENCE

SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# ENGINEERING SCIENCE

St. Mary's University

BS Engineering Science (ES) Degree Plan

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

**St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.**

First Year Courses					
	Fall	Hr		Spring	Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	EN 1311 Rhetoric & Composition <sup>2</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	EG 1304 Engineering Programming	3	___	EG 1301 Engineering Graphics & Design <sup>4</sup>	3
___	MT 2412 Univariate Calculus I	4	___	MT 2413 Univariate Calculus II	4
___	PY1404 Mechanics, Heat, Acoustics	4	___	PY2404 Electricity, Magnetism, Optics	4
___	ND 0101 Personal & Academic Development	0			
	Total	17		Total	17
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	CH 1401 General Chemistry I	4	___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
___	EG 2307 Engineering Mechanics	3	___	CH 1402 General Chemistry II	4
___	MT 3311 Differential Equations	3	___	EG 2308 Strength of Materials	3
___	Engineering Science Elective #1	3	___	Engineering Science Elective #2	3
	Total	16		Total	16
Third Year Courses					
___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	___	SMC 2301 Foundations of Practice: Ethics Advanced Theology <sup>5</sup>	3
___	Foreign Language <sup>6</sup>	3	___	Foreign Language <sup>6</sup>	3
___	EG 3345 Circuits and Systems	3	___	EG 3145 Circuits and Systems Lab	1
___	MT 4331 Probability and Statistics I	3	___	EG 2306 Materials Science	3
___	Engineering Science Elective #3	3	___	Engineering Science Elective #4	3
	Total	15		Total	16
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature	3	___	SMC 4301 Capstone Seminar-Senior Design Project II	3
___	EG 4362 Senior Design Project I <sup>1</sup>	3	___	EG 3334 Engineering Economy <sup>3</sup>	3
___	EG 3335 Operations Research I	3	___	EG 2309 Fluid Mechanics	3
___	Engineering Science Elective #5	3	___	Engineering Science Elective #7	3
___	Engineering Science Elective #6	3	___	Engineering Science Elective #8	3
	Total	15		Total	15

Total Hours 127

<sup>1</sup>Speech Requirement: EG 4362 Senior Design Project 1

<sup>2</sup>Rhetoric and Composition Requirement (Must be "C" or better): EN 1311 or EN 1313 (international students)

<sup>3</sup>Social Science Requirement: EG 3334 Engineering Economy

<sup>4</sup>Fine Arts Requirement: EG 1301 Engineering Graphics & Design

<sup>5</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

<sup>6</sup>Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school. Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge. Or, 12 hours of CLEP credit.

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# ENGINEERING SCIENCE

St. Mary's University  
BS Engineering Science (ES) Degree Plan – 2010  
127 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization (Senior Design Project II)	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ <b>Composition and Rhetoric (grade of "C" or better)</b> – EN 1311, EN 1313 (for international students)	3
__ Fine Arts – EG 1301 Graphics Design	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit.	6
__ Social Science – EG 3334 Engineering Economy	3
__ Speech – EG 4362 Senior Design Project 1	3
__ Theology – Advanced Theology 33XX	3

## **BS Engineering Science Major Courses (76 hours)**

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ EG 1304 – Engineering Programming	3
__ EG 2306 – Materials Science	3
__ EG 2307 – Engineering Mechanics	3
__ EG 2308 – Strength of Materials	3
__ EG 2309 – Fluid Mechanics	3
__ EG 3145 – Circuits and Systems Lab	1
__ EG 3335 – Operations Research I	3
__ EG 3345 – Circuits and Systems	3
__ Engineering Elective #1	3
__ Engineering Elective #2	3
__ Engineering Elective #3	3
__ Engineering Elective #4	3
__ Engineering Elective #5	3
__ Engineering Elective #6	3
__ Engineering Elective #7	3
__ Engineering Elective #8	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3311 – Differential Equations	3
__ MT 4331 – Probability and Statistics I	3
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4

## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# ENGINEERING SCIENCE

St. Mary's University

BS Engineering Science (ES) Degree Plan – Concentration in Environmental Science

*This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

First Year Courses					
	Fall	Hr		Spring	Hr
—	SMC 1301 Foundations of Civilization	3	—	SMC 1311 Foundations of Reflection: Self	3
—	EN 1311 Rhetoric & Composition <sup>2</sup>	3	—	SMC 1312 Foundations of Reflection: Nature	3
—	EG 1304 Engineering Programming	3	—	EG 1301 Engineering Graphics & Design <sup>4</sup>	3
—	MT 2412 Univariate Calculus I	4	—	MT 2413 Univariate Calculus II	4
—	PY1404 Mechanics, Heat, Acoustics	4	—	PY2404 Electricity, Magnetism, Optics	4
—	ND 0101 Personal & Academic Development	0			
	Total	17		Total	17
Second Year Courses					
—	SMC 1313 Foundations of Reflection: Others	3	—	SMC 1314 Foundations of Reflection: God	3
—	CH 1401 General Chemistry I	4	—	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
—	EG 2307 Engineering Mechanics	3	—	CH 1402 General Chemistry II	4
—	MT 3311 Differential Equations	3	—	EG 2308 Strength of Materials	3
—	ES 1300 General Geology	3	—	ES 1373 Intro to Environmental Science	3
—	ES 1100 General Geology Lab	1	—	ES 1173 Intro to Environmental Science Lab	1
	Total	17		Total	17
Third Year Courses					
—	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	—	SMC 2301 Foundations of Practice: Ethics	3
—	Foreign Language <sup>6</sup>	3	—	Foreign Language <sup>6</sup>	3
—	EG 3345 Circuits and Systems	3	—	EG 3145 Circuits and Systems Lab	1
—	MT 4331 Probability and Statistics I	3	—	EG 2306 Materials Science	3
—	ES 3350 Engineering Geology	3	—	ES 2450 Environmental Geology	3
—			—	ES 2450L Environmental Geology	1
	Total	15		Total	14
Fourth Year Courses					
—	SMC 2304 Foundation of Practice: Literature Advanced Theology <sup>5</sup>	3	—	SMC 4301 Capstone Seminar-Senior Design Project II	3
—	EG 3335 Operations Research I	3	—	EG 2309 Fluid Mechanics	3
—	EG 4362 Senior Design Project I <sup>1</sup>	3	—	EG 3334 Engineering Economy <sup>3</sup>	3
—	Engineering Science Elective #1	3	—	Engineering Science Elective #2	3
—			—	Engineering Science Elective #3	3
	Total	15		Total	15

Total Hours 127

<sup>1</sup>Speech Requirement: EG 4362 Senior Design Project 1

<sup>2</sup>Rhetoric and Composition Requirement (Must be "C" or better): EN 1311 or EN 1313 (international students)

<sup>3</sup>Social Science Requirement: EG 3334 Engineering Economy

<sup>4</sup>Fine Arts Requirement: EG 1301 Engineering Graphics & Design

<sup>5</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing coursework within the degree plan.



# ENGINEERING SCIENCE

St. Mary's University  
BS Engineering Science (ES) Degree Plan – Concentration in Environmental Science – 2010  
127 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization (Senior Design Project II)	3

## School of Science, Engineering, and Technology Specific Core (21 Hours)

__ Composition and Rhetoric (grade of "C" or better) – EN 1311, EN 1313 (for international students)	3
__ Fine Arts – EG 1301 Graphics Design	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – EG 3334 Engineering Economy	3
__ Speech – EG 4362 Senior Design Project 1	3
__ Theology – Advanced Theology 33XX	3

## BS Engineering Science Major (Environmental Science) Courses (76 hours)

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ EG 1304 – Engineering Programming	3
__ EG 2306 – Materials Science	3
__ EG 2307 – Engineering Mechanics	3
__ EG 2308 – Strength of Materials	3
__ EG 2309 – Fluid Mechanics	3
__ EG 3145 – Circuits and Systems Lab	1
__ EG 3335 – Operations Research I	3
__ EG 3345 – Circuits and Systems	3
__ ES 1300 – General Geology	3
__ ES 1100 – General Geology Lab	1
__ ES 1373 – Introduction Environmental Science	3
__ ES 1173 – Introduction Environmental Science Lab	1
__ ES 2450 – Environmental Geology	3
__ ES 2450L – Environmental Geology Lab	1
__ ES 3350 – Engineering Geology	3
__ Engineering Elective #1	3
__ Engineering Elective #2	3
__ Engineering Elective #3	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3311 – Differential Equations	3
__ MT 4331 – Probability and Statistics I	3
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4

## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# ENGINEERING SCIENCE

St. Mary's University

BS Engineering Science (ES) Degree Plan – Concentration in Pre-Med

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
	Fall	Hr		Spring	Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	EN 1311 Rhetoric & Composition <sup>2</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	EG 1304 Engineering Programming	3	___	EG 1301 Engineering Graphics & Design <sup>4</sup>	3
___	MT 2412 Univariate Calculus I	4	___	MT 2413 Univariate Calculus II	4
___	PY1404 Mechanics, Heat, Acoustics	4	___	PY2404 Electricity, Magnetism, Optics	4
___	ND 0101 Personal & Academic Development	0			
	Total	17		Total	17
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	BL 1401 General Biology I	4	___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
___	CH 1401 General Chemistry I	4	___	BL 1401 General Biology I	4
___	EG 2307 Engineering Mechanics	3	___	CH 1402 General Chemistry II	4
___	MT 3311 Differential Equations	3	___	EG 2308 Strength of Materials	3
	Total	17		Total	17
Third Year Courses					
___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	Foreign Language <sup>6</sup>	3	___	Foreign Language <sup>6</sup>	3
___	BL 3434 Comparative Physiology	4	___	BL 3492 Cell Biology	4
___	CH 3411 Organic Chemistry I	4	___	CH 3412 Organic Chemistry II	4
___	MT 4331 Probability and Statistics I	3	___	EG 2306 Materials Science	3
	Total	17		Total	17
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature Advanced Theology <sup>5</sup>	3	___	SMC 4301 Capstone Seminar-Senior Design Project II	3
___	BL 4451 Biochemistry I	3	___	BL 4452 Biochemistry II	3
___	EG 3345 Circuits and Systems	4	___	EG 2309 Fluid Mechanics	4
___	EG 4362 Senior Design Project I <sup>1</sup>	3	___	EG 3145 Circuits and Systems Lab	1
			___	EG 3334 Engineering Economy <sup>3</sup>	3
	Total	16		Total	14

Total Hours 132

<sup>1</sup>Speech Requirement: EG 4362 Senior Design Project 1

<sup>2</sup>Rhetoric and Composition Requirement (Must be "C" or better): EN 1311 or EN 1313 (international students)

<sup>3</sup>Social Science Requirement: EG 3334 Engineering Economy

<sup>4</sup>Fine Arts Requirement: EG 1301 Engineering Graphics & Design

<sup>5</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# ENGINEERING SCIENCE

St. Mary's University  
BS Engineering Science (ES) Degree Plan – Concentration in Pre-Med – 2010  
132 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization (Senior Design Project II)	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ <b>Composition and Rhetoric (grade of "C" or better)</b> – EN 1311, EN 1313 (for international students)	3
__ Fine Arts – EG 1301 Graphics Design	3
__ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit.	6
__ Social Science – EG 3334 Engineering Economy	3
__ Speech – EG 4362 Senior Design Project 1	3
__ Theology – Advanced Theology 33XX	3

## **BS Engineering Science Major (Pre-Med) Courses (81 hours)**

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

__ BL 1401 – General Biology I	4
__ BL 1402 – General Biology II	4
__ BL 3434 – Comparative Physiology	4
__ BL 3492 – Cell Biology	4
__ BL 4451 – Biochemistry I	4
__ BL 4452 – Biochemistry II	4
__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ CH 3411 – Organic Chemistry I	4
__ CH 3412 – Organic Chemistry II	4
__ EG 1304 – Engineering Programming	3
__ EG 2306 – Materials Science	3
__ EG 2307 – Engineering Mechanics	3
__ EG 2308 – Strength of Materials	3
__ EG 2309 – Fluid Mechanics	3
__ EG 3145 – Circuits and Systems Lab	1
__ EG 3345 – Circuits and Systems	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3311 – Differential Equations	3
__ MT 4331 – Probability and Statistics I	3
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4

## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# ENGINEERING SCIENCE

## Department Courses and Descriptions

### **Intro to Computer/Ele E I (1)**

EG 1101

Introduction to electrical/computer engineering consist of two 1-hour course sequence directed at incoming freshmen. The two courses focus on MATLAB and its application to engineering problems. In the first course, EG1101, the basic MATLAB features are covered. This includes MATLAB help utility, MATLAB environment and desktop, all MATLAB windows and their functionalities, solving simple problems using MATLAB, preliminary graphing capabilities of MATLAB, m-file development, debugging m-files with MATLAB, solving more sophisticated engineering problems with MATLAB. Pre-requisite: none.

### **Intro to Computer/ EE II (1)**

EG 1102

Introduction to electrical/computer engineering consist of two 1-hour course sequence directed at incoming freshmen. The two courses focus on MATLAB and its application to engineering problems. In the second course, EG1102, the more advanced MATLAB features are covered. This includes m-file and its debugging features, flow control in MATLAB, more advanced usage of MATLAB help utilities, more advanced MATLAB commands, MATLAB toolboxes, solving advanced engineering and scientific problems using MATLAB, more advanced graphing capabilities of MATLAB. Pre-requisite: EG 1101.

### **Engineering Graphics and Design (3)**

EG 1301

Introduction to drawing instruments, lettering, and sketching. Work drawings: pictorials, orthographic projection, dimensioning, sections, and auxiliary views. Descriptive geometry: points, lines, planes, revolutions, intersections, etc. Use of Computer Aided Design (CAD) software. Introduction to engineering design. Several design projects are developed. Prerequisite: none.

### **Programming for Engineers (3)**

EG 1302

The goal of this course is to provide students with a working knowledge of C programming language as defined by the ANSI standard. This class does not just focus on the C language syntax and program constructs. It will also emphasize good programming habits in developing a well-structured code. The concepts that will be presented in this course include: programming environment; basic C program structure; variables, constants and operators; looping with for, while, and do while statements; decision-making constructs (if, if/else, switch, and conditional expression statements); using and writing functions; using arrays, pointers and combination thereof; string operations/functions; performing file I/O; using the preprocessor directives; and using modular development methodology. Prerequisite: none.

### **Object-Oriented Program & Desig (3)**

EG 1305

Introduction to object-oriented programming, classes, objects, data members (class attributes), methods (member functions or class behavior), data abstraction, and encapsulation. Software reuse. Constructors, destructors, and inheritance. Operator overloading. Virtual functions and polymorphism. Stream Input/Output. The preprocessor. Object-oriented analysis and design methodologies and their role in the software development process. The Unified Modeling Language (UML) as a design and development

# ENGINEERING SCIENCE

tool. Extensive use of OOP programming is required. A class project is included requiring use of the UML to develop a sizable software application. A professional oral presentation and a well-written report are required. Prerequisite: EG 1302 or EG 1304 or CS 1410.

## **Engineering Seminars (0)**

EG 2010

The engineering seminars provides students exposure to outside speakers and a review of recent developments in science and engineering. Prerequisite: none.

## **Logic Design Laboratory (1)**

EG 2141

This lab introduces the basic principles of digital electronic design using standard TTL devices. Experiments illustrate the principles learned in the Fundamentals of Logic Design (EG 2341) class. The first part of this laboratory focuses on the design of combinational networks. This includes the basic operation of various logic gates; verification of truth tables; minimization of logic functions; realization of digital functions using multiple stage networks, decoders, multiplexer, and read-only memory. The second part of this lab emphasizes the design of sequential network. Here, students are introduced to various types of flip-flops, counters; design of digital circuits using Finite State Machines. Co-requisite: EG 2341.

## **Circuit Analysis Laboratory (1)**

EG 2152

This lab is geared towards students who are taking electrical engineering laboratory for the first time. The lab is divided into two parts: First part covers introductory concepts and basic measurements in electrical circuits. Second part is dedicated to circuit theorems; transient response of circuits composed of resistors, capacitors, and inductors; AC steady state; frequency response (PHASORS); and the characteristics of operational amplifiers in electrical circuits. Co-requisite: EG 2353.

## **Digital Systems Design Lab (1)**

EG 2181

Experiments illustrate the principles learned in the Digital Systems Design (EG 2382) class. The first part of this laboratory focuses on the design of sequential networks using 7400 series TTL and CMOS devices. This includes comparing the electric characteristics; drive capability and fan-out of TTL and CMOS devices; Tri-state buffers, and Open-collector outputs. The second part of this laboratory emphasizes the more recent digital systems design techniques that use modern CAD tools that support Hardware Design Languages such as VHDL. Many laboratory experiments introduce students to various VHDL sequential and concurrent constructs. Students learn how to simulate, verify, and synthesize their designs using state-of-the-art CAD tools. Prerequisites: EG 2341 and EG 2141W; Co-requisite: EG 2382.

## **High Technology & Society (3)**

EG 2300

Exploration of the social, economic, and political impact of modern science and technology. The ethical nature of scientific research and technological development. Exploration of recent scientific discoveries and technological applications. This course may be counted for physical science credit for social science majors and social science credit for SET majors.

# ENGINEERING SCIENCE

## **Principles of Materials Scienc (3)**

EG 2306

A study of the atomic and crystalline structure of solids including the theory of X-ray diffraction, solid solutions, diffusion, and phase transformations. The behavior of matters based on their mechanical, electrical, thermal, magnetic, and optical properties. Point defects, dislocation theory. Prerequisites: CH 1401, PY 2404, MT 2412.

## **Engineering Mechanics (3)**

EG 2307

Fundamentals of statics, vector methods, concentrated and distributed force systems, methods of moments for extended rigid structures, static equilibrium of structures. Prerequisites: PY 1404, MT 2412.

## **Strength of Materials (3)**

EG 2308

Mechanical properties of materials: normal and shear stress, normal and shear strain. Separate treatments of axial load, torsion, and bending. Bending and shearing stresses in beams. Deflection in homogeneous beams. Design of members by strength criteria. Prerequisite: EG 2307, MT2413.

## **Fluid Mechanics (3)**

EG 2309

Forces and energy generated by liquids and gasses at rest and in motion. Fundamental laws of fluid behavior: conservation of mass, energy, and momentum. Differential and finite control volume approaches for flow analysis. Steady, incompressible flow. Prerequisites: MT 3311, PY 2404, EG 2307.

## **Human Computer Interaction (3)**

EG 2310

The goal of this course is to teach the fundamentals of human-computer interface in software design and development. Students learn to design, implement and evaluate effective and usable graphical computer interfaces. Design of windows, menus, and commands. Voice and natural language I/O. Response time and feedback. Color, icons, and sound. Students work on individual and team projects to de sign, implement and evaluate computer interfaces. Prerequisite: EG1302 or EG1304 or CS 1410.

## **Software Requirement Eng (3)**

EG 2311

This course provides an introduction to the fundamentals of software requirements management. Topics covered include requirements gathering, system modeling and software specifications. The major emphasis is on using a variety of modeling tools and techniques to define a system specification. Languages and models for representing requirements. Analysis and valida tion techniques, including need, goal, and use case analysis. Students participate in a group project on software requirements. Prerequisite: EG 1302 or EG 1304 or CS 1410.

## **Work Design & Product Measure (3)**

EG 2322

Industrial engineering tools and concepts for engineering problem solving. Work design and methods engineering. Work measurement and work sampling, productivity measurement, incentives, standard time techniques. In-class labs and design projects are required. Prerequisites: none.

# ENGINEERING SCIENCE

## **Industrial Automation & Control (3)**

EG 2325

Logic-structured and icon-driven programming. Introduction to industrial field devices for control and automation. Number systems and codes. Digital and analogue signals. Interposing relay control. Timers, counters, and data compare instructions. In-class labs and design projects are required. Prerequisite: EG1302, EG1304, CS1410, or CS 1411.

## **Fundamentals of Logic Design (3)**

EG 2341

The first half of this course focuses on combinational network design. This includes the number systems and conversion; Boolean algebra; minimization of switching functions using Karnaugh maps; multi-level gate networks; multi-output networks; realizing Boolean functions using multiplexers, decoders, read-only memories, and programmable logic devices. The second half of this course focuses on the analysis and the design of sequential network. Topics covered in this part of the course include flip-flops; designing counters using different type of flip-flops; analysis of sequential networks; derivation of state graphs and tables; introduction to Finite State Machines; minimization of state tables; guidelines for state assignment; derivation of flip-flop input equations, and realization of sequential networks. Co-requisite: EG 2141W.

## **Data Structures & Algorithms (3)**

EG 2342

This course provides an introduction to the design and analysis of computer data structures and algorithms, focusing in particular on techniques for achieving high performance software in computer systems. Students will learn the necessary mathematical background to carry out algorithm analysis, such as time and space complexity, worst-case and average-case analysis, tractability & intractability, and design techniques. It discusses recursion and recurrence relations, asymptotic notations, basic data structures, dynamic dictionaries, balanced trees, priority queues, and graphs. The specific data structures which will be discussed in class include linked lists, stack, heaps, self-organizing lists, binary search trees, hash tables, AVL trees, red-black trees, balanced trees, leftist trees, minimum spanning trees, and others. Prerequisite: EG1302 or EG1304

## **Circuit Analysis I (3)**

EG 2352

Basic circuit elements and models; resistive circuits; circuit theorems; loop and nodal analysis of resistive networks; techniques of analysis of operational amplifiers; analysis of circuits with energy storage elements (capacitors and inductors); natural and step response of RL; RC; and RLC circuits. Prerequisite: PY2404. Co-requisite: MT3311.

## **Circuit Analysis II (3)**

EG 2353

The goal of this course is to provide students with a working knowledge of phasor diagrams; sinusoidal steady-state power analysis and complex load matching; series and parallel resonance; Laplace transform and its applications in circuit analysis: the step function, the impulse function, inverse transforms, initial and final value theorems, and circuit analysis in the s-domain. Transfer functions and Bode diagrams are also included. Prerequisites: EG 2352, MT 3311.

# ENGINEERING SCIENCE

## **Digital Systems Design (3)**

EG 2382

The first part of this course presents a quick review of sequential network design concepts as presented in the pre-requisite course on Fundamentals of Logic Design (EG 2341); iterative networks; integrated circuit logic families and their electric characteristics; drive capability and fan-out of TTL and CMOS devices; Tri-state buffers, and Open-collector outputs. Mixing logic families; Hazard detection and prevention; designing digital systems using Programmable Logic Devices (PLD); digital systems design using Algorithmic State Machine (ASM) charts. The second part of this course focuses on the design of combinational and sequential networks using VHDL. Students will learn how to use the top-down design techniques to analyze, design, simulate, verify, and synthesize complex digital circuits using modern CAD tools. Prerequisites: EG 2341 and EG 2141W; Co-requisite: EG 2181W.

## **Artificial Intelligence (3)**

EG 2390

Introduction to Artificial Intelligence. Search techniques, knowledge representation, game playing, predicate logic. Knowledge representation using rules, expert systems, neural networks, and genetic algorithms. Coverage of an AI-specific programming language and/or AI integrated software. Prerequisite: EG 1304 or EG 1302.

## **Expert Systems and Applications (3)**

EG 2393

Fundamentals of expert systems. Knowledge representation using production rules. Knowledge acquisition and development of a knowledge base. Backward and forward chaining. Uncertainty. Development, testing, and validation of expert systems. Prerequisite: EG 1302 or EG 1304.

## **Circuits and Systems Lab (1)**

EG 3145

Basis of electrical measurements and technical report writing. Experimental verification and applications of circuit theorems and laws including the current divider, the voltage divider, and Thevenin's theorem; the application of the cathode ray oscilloscope; the analysis of the transient response of RC and RL circuits; applications of operational amplifiers in the design of summing, amplification, and comparator circuits; design of diode-clamping circuits; implementation and analysis of frequency response of filter circuits. This is a writing-intensive course. This course cannot be taken for credit by electrical engineering or computer engineering majors. Prerequisite: EG 3345

## **Electronics I Lab (1)**

EG 3156

DC circuits; the diode as a nonlinear device; the oscilloscope; RC circuits; RC filters; LC resonant circuit; rectifier; signal diodes; diode clamp; emitter follower; current source; common emitter amplifier; transistor as a switch; op-amp open-loop gain; inverting and non-inverting op-amps; op-amp follower and current source; summing amplifier; op-amp as an integrator, a differentiator, an active rectifier, and an active clamp; FET transistor; FET current source and source follower; FET as a voltage-controlled resistance; amplitude modulation and AM radio; input and output characteristics of integrated gates: TTL and CMOS. Pre-requisite: EG 2152W; corequisite: EG 3356.



# ENGINEERING SCIENCE

## **Electronics II Lab (1)**

EG 3157

Flip-flops; counters; shift registers; the cascading 16-bit counter with added display and keypad; programmable divide-by-n counters; period meters; capacitance meters; memory; RAM; divide-by-3; memory-based state machines; the dynamic diode curve tracer; the grounded emitter amplifier; current sources; the Ebers-Moll model; push-pull amplifiers; differential amplifiers; the bootstrap circuit; the Miller effect; the Darlington pair; the super beta; the analog switch and its applications: chopper circuits; sample-and-hold circuits; switched capacitor filters; voltage inverter circuits; A/D and D/A converters; the phase-locked loop circuit; the frequency multiplier. Prerequisite: EG 3156W; Co-requisite: EG 3357.

## **Human Factors (3)**

EG 3316

Integration of the human component into the design, development, and evaluation of human-machine systems. Ergonomic and human factors research methodology. A term project featuring the design of a human-machine system from an ergonomic/human factors perspective is required.

## **Industrial Statistics (3)**

EG 3322

Introduction to probability and statistics; descriptive statistics; random variables; sampling; distributions; hypothesis testing; linear regression and correlation; goodness-of-fit tests; design of experiments and analysis of variance. Pre-requisite: MT2413

## **Lean Production Systems (3)**

EG 3333

Principles and methods of analysis and design of service, production, and manufacturing facilities. Plant layout. Assembly line balancing. Material handling. Lean and just-in-time. Forecasting. Inventory control. Aggregate planning. Materials requirement planning. Theory of constraints. Prerequisite: MT 2413.

## **Engineering Economy (3)**

EG 3334

Overview of finance/accounting concepts. Fundamental principles and methods for economic analysis of technical alternatives leading to decision making under deterministic and uncertain conditions. The effects of interest, taxation, depreciation, and inflation. Prerequisite: MT 2413 Calculus II.

## **Optimization (3)**

EG 3335

Introduction to mathematical programming. Linear program formulations. Optimization of linear programs using the graphical method, simplex method and special implementations of the simplex method. Duality. Sensitivity analysis. Transportation and assignment problems. Introduction to integer programming. Integer program formulations. Co-requisite: MT 2413.

## **Applied Optimi. & Analysis (3)**

EG 3336

Introduction to network optimization. Network representation and solution algorithms for minimum spanning tree, shortest path, minimum cost network flow and maximum flow - minimum cut problems.

# ENGINEERING SCIENCE

Scheduling of projects using CPM/PERT. Formulation and solution of dynamic programming problems. Introduction to heuristics and meta-heuristics. Introduction to stochastic modeling. Markov chains, Chapman-Kolmogorov equations and classification of states. Introduction to queuing systems. Birth-death processes, queuing networks and queuing decision models. Prerequisites: EG 3332 or MT 4331.

## **Supply Chain Management (3)**

EG 3337

Fundamental concepts and theory for the treatment of the principles, models, and techniques for supply chain management planning, analysis, and design. Supply chain business processes, process metrics, and common, good and best practices in supply chain management. Multi-echelon inventory models, channel coordination, supply contracts and negotiations, supply chain disruptions/risk management, pricing, logistics network design, vehicle routing, reverse logistics, closed-loop supply chains, global manufacturing & distribution, supply chain profitability optimization. Decision making under uncertainty for optimal profitability in the context of global outsourcing, international logistics, and international trade treaties. Prerequisite: EG 3333

## **Circuits and Systems (3)**

EG 3345

An introduction to the theory and applications of electrical circuits, devices and systems; review of basic physics involving resistors, inductors, and capacitors; electrical units and measurements; analysis of dc circuits; analysis of the transient response to RL and RC switching circuits; introduction to ac circuit analysis; the frequency response; diodes, rectifiers and wave-shaping circuits; applications of operational amplifiers. This course may not be taken for credit by electrical engineering or computer engineering majors. Prerequisite: PY 2404; Co-requisite: MT 3311

## **Software Design & Archi (3)**

EG 3350

This course introduces basic concepts and principles about software design and software architecture. Study of design concepts and notations. Architecture, middleware architectures, design patterns, frameworks and components. Designing for qualities such as performance, security, reusability, reliability. Techniques for designing, building, and evaluating software architectures. Prerequisite: CS 3340 and EG 2311.

## **Software Project Management (3)**

EG 3351

This course introduces concepts deemed central to effective management of software projects. Software systems engineering, process management and control, and project planning and management. Using specifications and descriptions, making use of structured and object-oriented techniques, completing reviews and audits, confirming product development with planned verifications, and validations and testing. Management of expectations. Release and configuration management. Software process standards and process implementation. Software contracts and intellectual property. Prerequisite: CS 3340.

## **Software Qual Assurance & Test (3)**

EG 3352

This course provides an introduction to software quality assurance and testing. Quality assurance process and its role in software development. Measuring software quality and software quality standards. In

# ENGINEERING SCIENCE

spections and formal technical reviews. Testing, verification, and validation techniques. Black-box and white-box testing. The automation of software testing. A team-based software development project is required in which students apply learned techniques. Prerequisite: CS3340.

## **Electronics I (3)**

EG 3356

Physical properties of diodes and p-n junctions; Diode circuits; physical properties of Metal-Oxide Field Effect Transistors (MOSFET); amplification circuits using MOSFET; NMOS; PMOS and CMOS devices; physical properties of Junction Field Effect Transistors (JFET); electronic circuits using JFET; physical properties of Bipolar Junction Transistors (BJT); amplification circuits using BJT; switching circuits using cut off and saturation modes of BJT. Prerequisite: EG2352.

## **Electronics II (3)**

EG 3357

The second part of a two-semester course sequence, which focuses on analog electronic circuits. Differential and multi-stage amplifiers; feed back in amplifier circuits; frequency response of different amplifiers; the four basic feedback topologies in amplifiers; various output stages; power amplifiers; and the complete analysis of the 741 operational amplifier circuit. The MultiSIM circuit analyzer software package is heavily utilized. Prerequisite: EG 3356; co-requisite: EG 3157W.

## **Microprocessors I (3)**

EG 3363

This is the first part of a two-semester course sequence that is intended to familiarize students with the development of microcontroller-based products. The first goal of the course is to teach students the skills of assembly language programming in general and the HCS12 Motorola microcontroller in particular. The second goal of the course is to introduce and familiarize students with different architecture and hardware design in microcontrollers using HCS12 as a model. The course is accompanied by laboratory assignments throughout the semester. Prerequisites: EG 1302/04, EG 2341.

## **Microprocessors II (3)**

EG 3364

The second part of a two-semester course sequence is intended to familiarize students with the development of microcontroller-based products. Concepts covered in this course include interfacing; timing diagrams and synchronization for handshake purposes. The course utilizes all the onboard functionalities of the Mc9S12DP256 microcontroller such as the A/D converter; synchronous and asynchronous serial interfaces; a timer module with input capture, output compare, and pulse accumulator capabilities; PWM; controller area network (CAN); and a variety of input and output ports. The course includes six or seven practical data acquisition and control projects based on the HCS12 microcontroller. Pre-requisites: EG 3363.

## **Electromagnetic Theory (3)**

EG 3366

Review of vector analysis, complex vectors, applications of Stokes' theorem and the divergence theorem, Maxwell's equations, the Lorentz force law, Poynting's theorem, electrostatics, introduction to magnetostatics, Faraday's law, time-varying electromagnetic fields, propagation of time-harmonic plane waves, wave attenuation in conductive and dissipative media, dispersion. Introduction to transmission

# ENGINEERING SCIENCE

lines. Prerequisites: PY2404, MT3311, MT3315, EG2352. Co-requisite: EG2353

## **Semiconductor Devices (3)**

EG 3368

Review of quantum mechanics; introduction to crystallography; energy band and charge carriers; physical properties of the p-n junction; physical properties of diodes; physical behavior of Bipolar Junction Transistors (BJT) in active, saturation and cut-off modes. Prerequisites: EG3356 and senior standing.

## **Signals and Systems (3)**

EG 3372

Continuous signal and system modeling, properties of linear, time-independent systems, BIBO stability, response of continuous systems to periodic and non-periodic signals, the convolution integral, theory and applications of Fourier series and Fourier transforms, power spectrum of periodic signals, energy spectrum of non-periodic signals, modulation. Prerequisite: MT3311, EG2353.

## **Computer Organi & Architecture (3)**

EG 3374

Instruction set architecture: instruction types, data types, addressing modes, instruction formats, and RISC versus CISC architectures. Basic computer organization: Central processing unit, system buses, memory subsystems, and computer peripherals. Processor design: hardwired versus micro-programmed control unit, arithmetic logic unit, pipeline design, pipeline hazards, branch prediction, register windowing, register renaming, and instruction level parallelism. Memory hierarchy: cache organizations, cache placement and replacement policies, main memory, virtual memory, and memory protection. Performance measurements. Prerequisites: EG2341, EG2382.

## **Java and Applications (3)**

EG 3392

Introduction to Java applications and Applets. Control structures. Methods of Java API packages. Declaring and allocating arrays. Object-oriented programming. Constructors and finalizers. Inheritance, super classes, and subclasses. Private, protected, and public members. Polymorphism. strings and characters. Graphics and Java 2D. Graphical User Interface (GUI) components. Layout managers. Event-driven programming. Exception handling. Multithreading. Files and streams. Networking. Accessing databases with JDBC. Servlets. Java Server Pages (JSP). Extensive use of Java programming. A term-project is required. Prerequisites: EG 1302 or EG 1304 or CS 1410, and EG 1305.

## **Computer Aided Manf&Rob Lab (1)**

EG 4132

Operations and programming of stepper and servomotors; integration of discrete-event sensors with microcomputer interfaces. Programming, simulation, implementation, and applications of industrial robots and microcontrollers. Experiments on computer numerical control (CNC) programming and coordinate measuring machines (CMM). Solid modeling on CAD. Weekly written reports on experiments are required. Co-requisite: EG 4332.

## **Energy Conversion Lab (1)**

EG 4160

Laboratory examination of the design, construction and operating characteristics of transformers and

# ENGINEERING SCIENCE

various types of motors and generators. Measurement of transformer parameters. The experimental investigation of the ac generator (alternator); the series, shunt, and compound dc motors; the synchronous motor; the induction motor; and the universal motor. This is a writing-intensive course. Co-requisite: EG4360

## **Adv Electronics Design Lab (1)**

EG 4166

This course includes individual design, construction and testing of analog, digital, and mixed electronics subsystems. Typical exercises include power control, oscillators, instrumentation amplifiers and applications, digital and mixed systems, communications circuits and electromechanical control systems. Prerequisite: EG 3357; Co-requisite: EG 4366.

## **Quality Control & Reliability (3)**

EG 4330

Statistical process control, interpretation of data, troubleshooting, control charts, process control, acceptance sampling. Fundamental reliability concepts, reliability functions, probabilistic engineering design. Relationship between statistical process control and total quality management (TQM). Malcolm Baldrige National Quality Award. ISO 9000. The quality gurus: Deming, Crosby, and Juran. Benchmarking. Quality function deployment. Prerequisite: MT4331 or EG3322 .

## **Manufacturing Processes (3)**

EG 4331

Geometric dimensioning and tolerancing standards. Economical and environmental considerations in manufacturing. Selection of materials. Processing methods: casting, injection molding, assembling, machining, etc. Measuring and inspection equipment and techniques. Product data management. Product design and redesign. Rapid prototyping. In-class labs and design projects are required. Prerequisite: EG2325.

## **Computer Aided Manufacturing (3)**

EG 4332

Modern manufacturing systems including automation, computer integrated manufacturing, robotics, and programmable logic controllers. Use of CAD/CAM/CAE software in analyzing industrial robots and manipulators. Design projects are required. Prerequisite: EG2325

## **Computer Simulation (3)**

EG 4337

Discrete-event simulation. Extensive use of Monte Carlo Simulation Software. Model verification and validation. Statistics of simulation. Prerequisites: EG 3322 or MT 4331

## **Special Topics I (3)**

EG 4338

## **Special Topics II (3)**

EG 4339

# ENGINEERING SCIENCE

## **Industrial Senior Design Proj I (3)**

EG 4340

The first course in the six-hour senior design sequence for IE, EM, SECA, and ES majors. Industry-university cooperation is required. Intended to foster a thorough understanding of the iterative engineering design process, including the recognition of needs, requirements planning, analysis and design, implementation, testing, validation, and impact on society. Prerequisites for IE majors: completion of at least 18 hours out of the following set: EG 2322, EG3333, EG3334, EG3335, EG3336, EG4132, EG4330, EG4331, EG4332, EG4337, EG3316, and either EG3322 or MT4331

## **Industrial Snr Dsgn Prjet II (3)**

EG 4341

This course is a continuation of EG4340W. Prerequisite: EG 4340W.

## **Digital Signal Processing (3)**

EG 4350

Discrete time signals & systems, z-transform, discrete Fourier transform, flow graph and matrix representation of digital filters, digital filter design techniques and computation of the fast Fourier transform (FFT). MATLAB software package is heavily utilized in this course. Prerequisite: EG 3372

## **Formal Methods of Software Eng (3)**

EG 4351

The goal of this course is to teach the formal methods of specifying and verifying software. Review of mathematical foundation for formal methods. Formal languages and techniques for specification and design, including specifying syntax using grammars and finite state machines. Analysis and verification of specification and designs. Use of assertion and proofs. Automated program and design transformation. Prerequisite: MT 3323.

## **Software Maint & Evolution (3)**

EG 4352

This course introduces maintenance methodologies and the evolution of software systems. Concepts and techniques for modifying software in evolving environments. Designing and implementing software to increase maintainability and reuse; evaluating software for change; and validating software changes. Evolution of legacy software systems. Software re-engineering, data reverse engineering. Prerequisite: CS 3340.

## **Computer Networks (3)**

EG 4356

Principles of layered communication architecture: application layer protocols, transport layer services, network layer and routing, data link layer, and physical layer. Local area networks: IEEE standard 802 for LANs (Ethernet, Token Bus, Token Ring,), Asynchronous Transfer Mode (ATM), hubs, bridges, and switches, high speed LANs, satellite and wireless LANs. Circuit switching, packet switching, and message switching, Error detection, error correction, security in computer networks, multimedia networking, and performance modeling. Prerequisite: junior standing

## **Energy Conversion (3)**

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EG 4360

Three-phase circuits, magnetic circuits, transformers, electrical-mechanical transducers, dc motors, synchronous motors, induction motors, ac generators. Theoretical principles, mathematical models, operating characteristics, and practical applications of transformers, motors, and generators are emphasized. Prerequisites: PY1404, PY2404, MT3311, EG2352, EG2353.

## **Comp & Elect Snr Design Proj I (3)**

EG 4362

This is a first course in the six-hour senior design sequence for EE and CE majors. It is intended to foster a thorough understanding of the engineering design process, from the recognition of a need and the definition of design objectives through implementation and troubleshooting. Industry-university cooperation is encouraged. This course requires proposal submission, alternative design consideration, status briefings, implementation, budgeting, and the preparation of a comprehensive final written report and oral presentation by the students. Prerequisites: Senior standing; EG 3357; EG 3364.

## **Comp & Elect Snr Design Prj II (3)**

EG 4363

This course is a continuation of EG 4362W. Prerequisite: EG 4362W.

## **Advanced Elec Design (3)**

EG 4366

This is a practical design course at the integrated circuit level. The topics include operational amplifier applications, feedback, active filters, oscillators, voltage regulators, linear and switching power supplies, precision and low noise techniques, and digital circuits. Prerequisite: EG 3357.

## **Control Systems (3)**

EG 4369

Introduction to the fundamentals of automatic control systems including the analysis and design of control systems for various engineering applications. Topics include modeling of physical systems using both transfer function and state space models. System responses, performance and design criteria. Control system characteristics, stability, sensitivity, steady state errors and transient response. Stability analyses using Routh-Hurwitz, Root-locus, Nyquist, and Bode methods. Lead and lag compensators and PID controllers design using root-locus method; Frequency-response analysis. MATLAB and SIMULINK are used to aid in the analysis and design of control systems. The laboratory work is designed to introduce the student to modern techniques needed for the design and implementation of automatic control systems. Prerequisite: EG3372 Signals and Systems

## **Communication Theory (3)**

EG 4370

Introductory information theory; frequency response of linear systems; analog-to-digital conversion; time multiplexing of signals; Pulse Amplitude Modulation (PAM); Pulse Code Modulation (PCM); quantization noise; Amplitude Modulation (AM) and Frequency Modulation (FM) techniques. Prerequisite: EG3372

## **SECA & ES Senior Dsgn Proj I (3)**

EG 4395

# ENGINEERING SCIENCE

The first course in the six-hour senior design project sequence for Software Engineering and Engineering Science majors. It fosters a thorough understanding of a comprehensive effort, iterative and incremental in nature, involving problem identification, requirements planning, proposal preparation, analysis, preliminary design, detailed design, development, implementation, and testing. Frequent oral presentations and written report upgrades are expected. Industry-University cooperation is encouraged. Students have a final professional oral presentation and submit a comprehensive report. Prerequisites: senior standing and consent of the academic adviser.

## **SECA & ES Senior Dsgn Proj II (3)**

EG 4396

Continuation of EG 4395W. Prerequisite: EG 4395W.



# ENVIRONMENTAL SCIENCE

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Physics and Earth Sciences

## Department Chair

Richard Cardenas, Ph.D. [rcardenas@stmarytx.edu](mailto:rcardenas@stmarytx.edu)

## Description of Program/Major

The Environmental Science is a multidisciplinary field based on the nature of the complex environmental problems that need to be resolved. The St. Mary's Environmental Science degrees were designed to meet the demands of an ever increasing global population which brings about urbanization issues and the depletion of natural resources. This program aims to give students a foundation of scientific knowledge and professional skills that will enable them to assess a variety of environmental issues, and pose potential solutions. The degree plans allow the student to gain experience in one specialization, such as geosciences, chemistry, or ecology.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process	3

# ENVIRONMENTAL SCIENCE

	(Formerly FA 1101, FA 1102, FA 1103)	
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# ENVIRONMENTAL SCIENCE

St. Mary's University

BA Environmental Science (EVSC) Degree Plan - 2011

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	SMC 1311 Foundations of Reflection: Self	3	___	BL 1402 General Biology II	4
___	BL 1401 General Biology I	4	___	EN 13XX Rhetoric & Composition <sup>2</sup>	3
___	ES 1100 General Geology Lab	1	___	ES 1173 Intro Environmental Science Lab	1
___	ES 1300 Introductory Geology	3	___	ES 1300 Intro Environmental Science	3
___	ND 0101 Personal & Academic Development	0			
	Total	14		Total	14
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	SMC 1314 Foundations of Reflection: God	3	___	SMC 2304 Foundation of Practice: Literature	3
___	CH 1401 General Chemistry I	4	___	ES 2300 Global Change	3
___	ES 2320 General Ecology	3	___	ES 2325 Energy Resources & the Environment	3
___	ES 2345 Experimental Design	3	___	ES 2450 Environmental Geology	4
	Total	16		Total	16
Third Year Courses					
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
___	Foreign Language <sup>6</sup>	3	___	Foreign Language <sup>6</sup>	3
___	ES 3100 Environmental Science Seminar	1	___	ES 3100 Environmental Science Seminar	1
___	EA 3342 Technical Writing	3	___	ES 3330 Information Technology for Majors	3
___	Major Elective*	3	___	Major Elective*	3
___	Major Elective*	3	___	Major Elective*	3
	Total	16		Total	16
Fourth Year Courses					
___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	ES 3320 Environmental Regulations	3
___	Social Science/History <sup>3</sup>	3	___	Major Elective*	3
___	Speech/Communication <sup>1</sup>	3	___	Major Elective*	3
___	ES 3100 Environmental Science Seminar	1	___	Major Elective*	3
	Total	13		Total	15

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: Any EN 23XX literature course

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

\* Major Electives may be selected from the following courses (21 hours): ES 1303, ES 3325, ES 3340, ES 3360, ES 3365, ES 3400, ES 4325, PY 1401, PY 1402, SC 2331, SC 3362

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing ES 2345 with a "C" or higher.

# ENVIRONMENTAL SCIENCE

St. Mary's University  
BA Environmental Science (EVSC) Degree Plan – 2011  
120 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## School of Science, Engineering, and Technology Specific Core (21 Hours)

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or any EN 23XX literature course	3

## BA Environmental Science Major Courses (69 hours)

__ BL 1401 – General Biology I	4
__ BL 1402 – General Biology II	4
__ CH 1401 – General Chemistry I	4
__ EA 3342 – Technical Writing	3
__ ES 1100 – General Geology Lab	1
__ ES 1173 – Introduction to Environmental Science Lab	1
__ ES 1300 – Introductory Geology	3
__ ES 1373 – Introduction to Environmental Science	3
__ ES 2300 – Global Change	3
__ ES 2320 – General Ecology	3
__ ES 2325 – Energy Resources and the Environment	3
__ ES 2345 – Experimental Design	3
__ ES 2450 – Environmental Geology	4
__ ES 3100 – Environmental Science Seminar	1
__ ES 3100 – Environmental Science Seminar	1
__ ES 3100 – Environmental Science Seminar	1
__ ES 3320 – Environmental Regulations	3
__ ES 3330 – Information Technology for Majors	3
__ Major Electives – 21 hours from: ES 1303, 3325, 3340, 3360, 3365, 3400, 4325; PY 1401, 1402, 1404, 2404; SC 2331, 3362 (Biophysics Options requires: PY 1404, 2404, ES 3325 plus 10 hours from Major Electives)	21

## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be fulfilled by successfully completing **ES 2345 with a "C" or higher**.

# ENVIRONMENTAL SCIENCE

St. Mary's University

BS Environmental Science (EVSC) Degree Plan - 2011

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	SMC 1311 Foundations of Reflection: Self	3	___	BL 1402 General Biology II	4
___	BL 1401 General Biology I	4	___	EN 13XX Rhetoric & Composition <sup>2</sup>	3
___	ES 1100 General Geology Lab	1	___	ES 1173 Intro Environmental Science Lab	1
___	ES 1300 Introductory Geology	3	___	ES 1300 Intro Environmental Science	3
___	ND 0101 Personal & Academic Development	0			
	Total	14		Total	14
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	SMC 1314 Foundations of Reflection: God	3	___	SMC 2304 Foundation of Practice: Literature	3
___	CH 1401 General Chemistry I	4	___	ES 2300 Global Change	3
___	ES 2320 General Ecology	3	___	ES 2325 Energy Resources & the Environment	3
___	ES 2345 Experimental Design	3	___	ES 2450 Environmental Geology	4
	Total	16		Total	16
Third Year Courses					
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
___	Foreign Language <sup>6</sup>	3	___	Foreign Language <sup>6</sup>	3
___	ES 3100 Environmental Science Seminar	1	___	ES 3100 Environmental Science Seminar	1
___	EA 3342 Technical Writing	3	___	ES 3330 Information Technology for Majors	3
___	MT 2412 Univariate Calculus I	4	___	MT 2413 Univariate Calculus II	4
___	Major Elective*	3	___	Major Elective*	3
	Total	17		Total	17
Fourth Year Courses					
___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3	___	Social Science/History <sup>3</sup>	3
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	Speech/Communication <sup>1</sup>	3	___	ES 3320 Environmental Regulations	3
___	ES 3100 Environmental Science Seminar	1	___	Major Elective*	3
___	Major Elective*	3			
___	Major Elective*	3			
	Total	16		Total	15

Total Hours 125

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: Any EN 23XX literature course

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

\* Major Electives may be selected from the following courses: ES 1303, ES 3325, ES 3340, ES 3360, ES 3365, ES 3400, ES 4325, PY 1401, PY 1402, SC 2331, SC 3362

OR

\* Geophysics Option: PY 1404, PY 2404, ES 3325 plus 7 hours from: ES 1303, ES 3340, ES 3360, ES 3365, ES 3400, ES 4325, PY 1401, PY 1402, SC 2331, SC 3362

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing ES 2345 with a "C" or higher.

# ENVIRONMENTAL SCIENCE

St. Mary's University  
BS Environmental Science (EVSC) Degree Plan – 2011  
125 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of “C” or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or any EN 23XX literature course	3

## **BS Environmental Science Major Courses (74 hours)**

__ BL 1401 – General Biology I	4
__ BL 1402 – General Biology II	4
__ CH 1401 – General Chemistry I	4
__ EA 3342 – Technical Writing	3
__ ES 1100 – General Geology Lab	1
__ ES 1173 – Introduction to Environmental Science Lab	1
__ ES 1300 – Introductory Geology	3
__ ES 1373 – Introduction to Environmental Science	3
__ ES 2300 – Global Change	3
__ ES 2320 – General Ecology	3
__ ES 2325 – Energy Resources and the Environment	3
__ ES 2345 – Experimental Design	3
__ ES 2450 – Environmental Geology	4
__ ES 3100 – Environmental Science Seminar	1
__ ES 3100 – Environmental Science Seminar	1
__ ES 3100 – Environmental Science Seminar	1
__ ES 3320 – Environmental Regulations	3
__ ES 3330 – Information Technology for Majors	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ Major Electives – 21 hours from: ES 1303, 3325, 3340, 3360, 3365, 3400, 4325; PY 1401, 1402, 1404, 2404; SC 2331, 3362 (Biophysics Options requires: PY 1404, 2404, ES 3325 plus 10 hours from Major Electives)	21

## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing **ES 2345 with a “C” or higher.**

# ENVIRONMENTAL SCIENCE

## Department Courses and Descriptions

### **General Geology Laboratory ()**

ES 1100

Laboratory study of earth materials (minerals and rocks), introduction to maps, historical geology (fossils), and plate tectonics exercise. (2 hours per week)

### **Environmental Science Lab (1)**

ES 1173

### **General Geology (3)**

ES 1300

A survey course covering the physical aspects of geology (minerals, rocks, geologic agents, plate tectonics) and the geological history of the earth and development of life (fossils). (field trip)

### **Physical Geology (3)**

ES 1301

Minerals and rocks and work of agents of geology; water (rivers, ground water, oceans), wind, ice and vulcanism; dynamics of the earth's crust as seen by use of maps and observation. (Lecture 2 hours, lab 2 hours, field trip.)

### **Geology of Earth Resources (3)**

ES 1303

Explores the nature, origin, distribution, use, conservation and future availability of valuable earth materials such as minerals, rocks, soils and water. Earth materials and activities will be used in class where appropriate. (field trip)

### **Geology of Energy Resources (3)**

ES 1304

Explores the nature, origin, distribution, use, conservation and future availability of petroleum and natural gas, coal and nuclear fuels. The probable impact of alternative energy sources will also be considered. Energy materials and activities will be used in class where appropriate. (field trip)

### **Physical Geography (3)**

ES 1305

A survey course which considers the entire world in terms of location, mapping, time zones, weather and climate, soils and vegetation, land forms, surface processes, and oceanography. (Candidates for Teacher Certification only)

### **Oceanography (3)**

ES 1342

A broad-based introductory course on every facet of ocean study: biologic, geologic, hydrologic, physical and chemical. (Saturday field trip) Prerequisite: ES 1300, 1301 or other natural science.

### **Intro. Environmental Science (3)**

# ENVIRONMENTAL SCIENCE

ES 1373

Investigation of man's relationship to the earth; earth resources and conservation, pollution problems, geological hazards (earthquakes, volcanoes, land-slides). Designed to benefit students majoring in any field. (field trip)

## **Global Change (3)**

ES 2300

The main objective of this course will be to provide students with a perspective of the geological history of the earth, and the natural changes the planet has endured. Learning about the history of environmental changes and events such as species extinctions and causes will give students a background to understand how recent environmental changes compare the past changes on the planet. Prerequisites: ES 1300 and ES 1373.

## **General Ecology (3)**

ES 2320

The main objective of this course will be to will learn about the fundamentals of ecology by studying the hierarchy of life, adaptations, population ecology and community ecology. Prerequisites: ES 1373 and ES 1173. Concurrent enrollment in MT 2303 recommended.

## **Energy Resources and the Environment (3)**

ES 2325

This course will help students understand and appreciate the importance of geology in controlling the nature, origins, and distribution of energy resources. Students will also examine economic and political factors that influence both the present and future development of these resources, as well as the associated potential environmental impacts. Alternative energy resources such as solar, wind, geothermal, biofuels, and hydropower will also be discussed. Key concepts are reinforced by giving students hands on experience through classroom demonstrations and projects using case studies and materials from the extensive collections of the Department of Physics and Earth Sciences (Field Trip). Prerequisites: ES1300 or with permission of the instructor.

## **Experimental Design (3)**

ES 2345

This class will be an applied statistics course that focuses on the design and analysis of experiments typical to research in environmental science. Students will learn the steps required to set up a sound experiment and then study the various methods used in single factor and multifactor analysis. Topics will include: ANOVAs, Confidence Intervals, the f-statistic, Pairwise Comparisons and Orthogonality. The course will require use of statistical software to analyze data sets. Prerequisite: MT 2303.

## **Environmental Geology (4)**

ES 2450

## **Seminar in Environmental Science (1)**

ES 3100

Presentation and discussion of current research in the environmental sciences will be covered in this course. Students will be expected to take 3 semesters of this course to meet the requirements of the major.



# ENVIRONMENTAL SCIENCE

## **Special Topics (1)**

ES 3103

Subject matter varies. Topic must be stated precisely on transcript, e.g., energy resources, petroleum geology, geophysics. May include lab and field work. Prerequisites: ES 1300, 1301 or permission of instructor.

## **Special Topics (2)**

ES 3203

Subject matter varies. Topic must be stated precisely on transcript, e.g., energy resources, petroleum geology, geophysics. May include lab and field work. Prerequisites: ES 1300, 1301 or permission of instructor.

## **Earth Science for Teachers (3)**

ES 3300

Activity-oriented review of basic concepts of geology, astronomy, oceanography and meteorology. Emphasis on design of experimental units and development of resource files in each of these areas. Prerequisite: Science teaching experience or approval of the instructor. (Lecture-laboratory 3 hours, field trip)

## **Essential Elmnts of Life-Erth (3)**

ES 3301

Includes essential elements in the following areas: classification, morphology and evolutions of life forms; characteristics, processes and evolution of the earth's lithosphere, oceans and atmosphere; and characteristics and evolution of the solar system and universe. Emphasis on learning through inquiry and discovery. No prerequisites. (Candidates for Teacher Certification only.)

## **Special Topics (3)**

ES 3303

Subject matter varies. Topic must be stated precisely on transcript, e.g., energy resources, petroleum geology, geophysics. May include lab and field work. Prerequisites: ES 1300, 1301 or permission of instructor.

## **Environmental Policy and Regulation (3)**

ES 3320

This course is designed to acquaint the student with numerous issues and perspectives confronting society and environmental scientists, and their influence on the development of environmental policy and regulation. This course is intended as a practical overview of environmental regulation, focusing on using case studies and examples to illustrate selected statutes and regulations that commonly shape the career of an environmental professional. Pre-requisites: ES 1373 or permission of the instructor.

## **Geophysics (3)**

ES 3325

This course covers Physics of the Earth's Interior, where students learn about examining Earth structure, plate tectonics, and earthquakes. Students will also study methods of exploring the makeup of the Earth's surface using seismic surveys, electrical methods, magnetics, gravity and well logging. Field

# ENVIRONMENTAL SCIENCE

demonstrations will be a required part of the course, which may require some Saturday meetings.

## **Information Technology for Environmental Science Majors (3)**

ES 3330

This course will teach the student the fundamentals of earth coordinate systems and collecting data with global positioning systems (GPS). Once the student is familiar with projection types and data collection systems they will begin using collected data to create maps with GIS technology, in order to better define and understand environmental problems. Map creation will also cover incorporating remotely sensed data, such as satellite imagery, showing how different layers of the mapping process can be used to display multiple maps in the GIS format, and examining ways the data can be interpreted using GIS software functions. Pre-requisites: ES1300 and ES1373 or permission of the instructor

## **Physical Hydrogeology (3)**

ES 3340

This class will give students a firm understanding of the way that geology influences the water resources that exist in the world. Physical studies of geologic environments will examine the science required to study the quantity and movement within surface and ground water systems. Hands on experience will be provided through classroom demonstrations and projects. Pre-requisites: ES1300 or with permission of the instructor.

## **Environmental Geochemistry (3)**

ES 3400

The principal objective for this course is to provide students with an understanding of the importance of chemistry in determining the quality of our environment. Students will learn about natural geochemical processes that occur in Earth's water, air, and soil systems, and explore how human activity can affect geochemical cycles in the environment. Fundamental concepts will be reinforced using examples at both a local and a global scale. Course content is largely based on applied geochemistry, with supporting content in theoretical geochemistry. Pre-requisites: ES1300, ES 1373, and CH 1402, or with permission of the instructor. ES 3400L must be taken concurrently.

## **Environmental Geochemistry Lab (0)**

ES 3400L

This laboratory will introduce students to the process of field sampling, data collection, data analysis, and data synthesis. The lab will use case studies of different geochemical systems based on real-world data either obtained by the students or gathered from databases maintained by federal and state government agencies. The lab may include some field studies involving sample collection and analysis. This lab will be required for all students working on a major in Environmental Science with a Chemistry Concentration. This lab must be taken concurrently with ES 3400.

# FORENSIC SCIENCE

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Chemistry

## Department Chair

Michael D. Losiewicz, Ph.D. [mlosiewicz@stmarytx.edu](mailto:mlosiewicz@stmarytx.edu)

## Description of Program/Major

St. Mary's newest major, forensic science is an exciting field and one of the country's fastest growing job markets. Solving crime requires knowledge of biological, chemical, physiological, social and individual factors. St. Mary's program integrates biological science, social science and professional preparation so students are uniquely prepared for this cuttingedge area of study.

Forensic science is the application of science to the law. It relies on the physical and behavioral sciences for investigating and solving crimes and examining physical trace evidence. The School's forensic science degree with a chemistry or biology option emphasizes the integration of academic preparation and realworld problem solving with a focus on ethical and professional commitment.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3

# FORENSIC SCIENCE

SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# FORENSIC SCIENCE

St. Mary's University

BS Forensic Science (BL) Biology Option Degree Plan

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

**St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.**

First Year Courses					
Fall		Hr	Spring		Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	BL 1401 General Biology I	4	___	BL 1402 General Biology II	4
___	CH 1401 General Chemistry I	4	___	CH 1402 General Chemistry II	4
___	MT 2303 Intro to Probability & Statistics	3	___	MT 2412 Univariate Calculus I	4
___	ND 0101 Personal & Academic Development	0			
	<b>Total</b>	<b>17</b>		<b>Total</b>	<b>18</b>
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	Social Science/History <sup>3</sup>	3	___	EN 13XX Rhetoric & Composition <sup>2</sup>	3
___	BL 3481 Microbiology	4	___	Speech/Communication <sup>1</sup>	3
___	BL 2233 Cell & Molecular Methods Lab CH	2	___	BL 2330 Genetic Principles or BL 2332 Cell	3
___	3411 Organic Chemistry I	4	___	Biology	
			___	CH 3412 Organic Chemistry II	4
	<b>Total</b>	<b>16</b>		<b>Total</b>	<b>16</b>
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics	3	___	SMC 2302 Foundations of Practice: Civic	3
___	Foreign Language <sup>6</sup>	3	___	Engagement & Social Action	
___	BL 4497 Genes & Genomes	4	___	SMC 2303 Foundation of Practice: Fine Arts &	3
___	BL 3141 Medical Terminology	1	___	Creative Process	
___	CR 3337 Forensic Criminology	3	___	Foreign Language <sup>6</sup>	3
___	PY 1401 General Physics I	4	___	BL 3440 Toxicology	4
			___	PY 1402 General Physics II	4
	<b>Total</b>	<b>18</b>		<b>Total</b>	<b>17</b>
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature	3	___	SMC 4301 Capstone Seminar: Prospects for	3
___	BL 3442 Human/Forensic Osteology	4	___	Community and Civilization	
___	BL 4451 Biochemistry I	4	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	CR 3335 Survey of Forensic Science	3	___	CH 3424 Instrumental Analysis	4
___	CR 4308 Internship in Forensic Sci. (optional)	(3)	___	CR 3336 Crime Scene Investigation	3
	<b>Total</b>	<b>14</b>		<b>Total</b>	<b>13</b>
		<b>(17)</b>			

Total Hours 129 (132)

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year: Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied: Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing BL 2233.

# FORENSIC SCIENCE

St. Mary's University  
BS Forensic Science (BL) Biology Option Degree Plan - 2010  
129-132 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## **BS Forensic Science (Biology Option) Major Courses (78-81 hours)**

__ BL 1401 – General Biology I	4
__ BL 1402 – General Biology II	4
__ BL 2233 – Cell and Molecular Methods Lab	2
__ BL 2330 – Genetic Principles or BL 2332 Cell Biology	3
__ BL 3141 – Medical Terminology	1
__ BL 3440 – Toxicology	4
__ BL 3442 – Human/Forensic Osteology	4
__ BL 3481 – Microbiology	4
__ BL 4451 – Biochemistry I	4
__ BL 4497 – Genes & Genomes	4
__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ CH 3411 – Organic Chemistry I	4
__ CH 3412 – Organic Chemistry II	4
__ CH 3424 – Instrumental Analysis	4
__ MT 2303 – Intro to Probability & Statistics	3
__ MT 2412 – Univariate Calculus I	4
__ PY 1401 – General Physics I	4
__ PY 1402 – General Physics II	4
__ CR 3335 – Survey of Forensic Science	3
__ CR 3336 – Crime Scene Investigation	3
__ CR 3337 – Forensic Criminology	3
__ CR 4308 – Internship in Forensic Sci. (optional)	3

## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing BL 2233.

# FORENSIC SCIENCE

St. Mary's University

BS Forensic Science (CH) Chemistry Option Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

**St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.**

First Year Courses					
Fall		Hr		Spring	
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	EN 13XX Rhetoric & Composition <sup>2</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	BL 1401 General Biology I	4	___	BL 1402 General Biology II	4
___	CH 1401 General Chemistry I	4	___	CH 1402 General Chemistry II	4
___	ND 0101 Personal & Academic Development	0	___	MT 2303 Intro to Probability & Statistics	3
Total		14		Total	17
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	Foreign Language <sup>6</sup>	3	___	Foreign Language <sup>6</sup>	3
___	CH 3411 Organic Chemistry I	4	___	CH 3412 Organic Chemistry II	4
___	MT 2412 Univariate Calculus I	4	___	MT 2413 Univariate Calculus II	4
___	PY 1401 General Physics I	4	___	PY 1402 General Physics II	4
Total		18		Total	18
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics	3	___	SMC 2302 Foundations of Practice: Civic	3
___	Social Science/History <sup>3</sup>	3	___	Engagement & Social Action	
___	BL 4451 Biochemistry I	4	___	SMC 2303 Foundation of Practice: Fine Arts &	3
___	CH 3423 Analytical Chemistry	4	___	Creative Process	
___	CR 3337 Forensic Criminology	3	___	BL 3341 Medical Terminology	3
___			___	CH3424 Instrumental Analysis	4
___			___	CR 3335 Survey of Forensic Science	3
Total		17		Total	16
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature	3	___	SMC 4301 Capstone Seminar: Prospects for	3
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	Community and Civilization	
___	CH3433 Physical Chemistry I	4	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	CR 3336 Crime Scene Investigation	3	___	Speech/Communication <sup>1</sup>	3
___	Advanced Biology Elective *	4	___	Advanced Biology Elective *	4
___			___	Advanced Biology Elective *	4
Total		17		Total	17

Total Hours 134

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

The Advanced Biology Electives may be selected from any junior and senior level science courses.

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

(Pending Information – Please see Chemistry Department)

# FORENSIC SCIENCE

St. Mary's University  
BS Forensic Science (CH) Chemistry Option Degree Plan - 2010  
134 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## **BS Forensic Science (Chemistry Option) Major Courses (83 hours)**

__ BL 1401 – General Biology I	4
__ BL 1402 – General Biology II	4
__ BL 4451 – Biochemistry	4
__ BL 3341 – Medical Terminology	3
__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ CH 3411 – Organic Chemistry I	4
__ CH 3412 – Organic Chemistry II	4
__ CH 3423 – Analytical Chemistry	4
__ CH 3424 – Instrumental Analysis	4
__ CH 3433 – Physical Chemistry I	4
__ MT 2303 – Intro to Probability & Statistics	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ PY 1401 – General Physics I	4
__ PY 1402 – General Physics II	4
__ CR 3335 – Survey of Forensic Science	3
__ CR 3336 – Crime Scene Investigation	3
__ CR 3337 – Forensic Criminology	3
__ Advanced Biology course	4
__ Advanced Biology course	4
__ Advanced Biology course	4

## **Proficiency in Information Technology and Information Literacy**

\_\_ (Pending Information – Please see Chemistry Department)



# FORENSIC SCIENCE

## Department Courses and Descriptions

### **Introductory Sociology (3)**

CR 1311

An introduction to the scope and methods of sociology, emphasizing the concepts of social structure, organization, institution, culture and socialization, and including analyses of primary and secondary groups, sex roles, social control, stratification, minorities, collective behavior, and population dynamics. Prerequisite for all courses in the Criminology program.

### **Police Role in Crime&Delinquen (3)**

CR 2308

Study of police strategies and practices in the prevention and control of crime among juveniles.

### **Topics in Criminal Justice (3)**

CR 2399

Topics in Criminal Justice (for elective credit only)

### **International Justice system (3)**

CR 3303

A cross-national study of crime and crime control.

### **Law and Society (3)**

CR 3305

Study of the interaction between the U.S. legal and social cultures.

### **Qualitative Research Methods (3)**

CR 3306

An introduction to the methods used to conduct qualitative research in natural social settings. An examination of the methods of ethnography, participant observation/non-participant observation, focus group, interview, and use of documentary sources included. Students may have the opportunity to engage in hands-on research. Additional topics include data coding, data analysis, and research ethics.

Prerequisites: Junior standing

### **Corrections in the Community (3)**

CR 3310

Study of probation, parole, and other community-reintegration procedures.

### **Correctional Counsel&Treatment (3)**

CR 3312

Study of the scope and purposes of correctional treatment and techniques of correctional counseling.

### **Correctional Institutions (3)**

CR 3313

Study of the philosophy, organizational structure and practices of correctional institutions.

### **Substance Abuse (3)**

# FORENSIC SCIENCE

CR 3314

Introduction to chemical dependency and the factors associated with the abusive use of chemicals; factors associated with helping the chemically dependent person.

## **Social Stratification (3)**

CR 3320

An analysis of social stratification utilizing social class as the unit of study. The course will focus on the structure of social classes in the U.S. as a major factor influencing individual and group life chances with regards to education, crime, health, and disease, world views and life styles.

## **Victimology (3)**

CR 3323

Study of crime victims and their interaction with offenders, criminal justice officials, and the public.

## **Juvenile Delinquency (3)**

CR 3324

An examination of juvenile delinquency in the U.S.: its nature, extent, causes, effects, prevention and rehabilitation. Sociological approaches to delinquency are emphasized, but psychological and legal approaches are also considered.

## **Criminology (3)**

CR 3325

An overview of the study of crime and the development of criminology. The nature, extent, causes, effects, rehabilitation and prevention of crime are examined from a sociological perspective. Psychological, legal, and philosophical approaches to crime are also considered.

## **Interviewing Techniques (3)**

CR 3326

An introduction to principles, strategies, techniques and practical skills involved in interviewing. Major types of interviews are considered, including information-gathering, information-providing, and counseling. Personal involvement and experience in conducting and evaluating actual interviews.

## **Mediation Techniques (3)**

CR 3327

Study of methods and techniques of conflict resolution, communications, mediation, and diversity awareness. Upon completion of CJ 3327, students wishing to receive a Certificate of Training as a mediator must complete either CJ 4303 (Internship) or 100 hours of volunteer service as a mediator in an appropriate setting approved by supervising faculty.

## **Research Methods Crim Justice (3)**

CR 3330

Study of methods and techniques of social research with an emphasis on criminology and criminal justice.

## **Computer Tech in Criminal Just (3)**

CR 3331

Inegrating computer application and research methods. Prerequisite: CJ 3330 or concurrently enrolled in

# FORENSIC SCIENCE

CJ 3330.

## **Statistics in Criminology (3)**

CR 3332

An introduction to inferential and descriptive statistics in the field of criminology. The course provides students with first-hand experience in the use of statistics and statistical packages.

## **Survey of Forensic Science (3)**

CR 3335

Course is designed to present an overview of the different areas of the Forensic Sciences. These areas include but are not limited to Pathology, Crime Scene Investigation, Ethics, Criminalistics, and Technology.

## **Crime Scene Investigation (3)**

CR 3336

Introduction to techniques of crime scene investigation. Emphasis will be on scene diagramming, search techniques, and presentation of different categories of evidence.

## **Forensic Criminology (3)**

CR 3337

This course blends the physical sciences with the science of criminology in the understanding, investigation, and the deterrence of crime.

## **Forensic Lab Techniques (3)**

CR 3338

Laboratory and field exercises pertaining to the forensic sciences.

## **Forensic Victimology (3)**

CR 3339

This course provides an understanding of the field of victimology as it is used to address investigative and forensic issues and problems.

## **The Family (3)**

CR 3343

A study of the family as an institution and social system, including discussions of dating and mate selection, premarital and extramarital sex, birth control, abortion, illegitimacy, family planning, spousal relationships, interracial and interfaith marriages, socialization, social control, and change.

## **Social Psychology (3)**

CR 3351

Theories and research on social factors in behavior, including such topics as attitudes, perception, leadership, and attraction.

## **Sex Crimes & Violent Crimes (3)**

CR 3360

The application of the forensic sciences to the investigation of sex crimes.

# FORENSIC SCIENCE

## **Urban Sociology (3)**

CR 3361

An analysis of cities, their historical development and social organization. Topics include urbanization in developed and developing societies, urban stratification and lifestyles, and urban, metropolitan and regional planning.

## **Demography and Ecology (3)**

CR 3362

The demographic study of human populations, including fertility, mortality, migration, age, sex, class composition. The ecological study of relations between human societies and their environments. Analysis of environmental problems and proposed solutions.

## **Minority Relations (3)**

CR 3371

A study of ethnic, religious and racial relations in the U.S. and other countries. Topics include power relationships, prejudice, discrimination, ethnic stratification, migration, assimilation and pluralism. Minorities to be considered include Blacks, Mexican-Americans and Native Americans.

## **Senior Seminar in Criminal Jus (3)**

CR 4302

Capstone course designed to evaluate knowledge and skills acquired by criminal justice and criminology students about their discipline. Students will design, analyze, write, and present a research project. The student must demonstrate knowledge of computer applications to research methodologies. In addition, the student must demonstrate critical thinking, problem-solving, oral and written communication skills, and the ability to effectively work within groups.

## **Internship in Crimi Just&Crimi (3)**

CR 4303

The student must acquire a minimum of 160 hours of practical experience in an approved criminal justice or social service agency. Unless an exception is made, this course is to be taken between the junior and senior years.

## **Indept Study in Criminology (3)**

CR 4304

Based on the student's professional and academic interest, the instructor will design an individualized reading course for the student.

## **Special Topics in Criminal Jus (3)**

CR 4305

Selected topics in criminal justice or criminology.

## **Internship in Forensic Science (3)**

CR 4308

Fieldwork experience in a criminal justice or related agency. A minimum of 160 hours of work experience is required.

# FORENSIC SCIENCE

# INDUSTRIAL ENGINEERING

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Engineering

## Department Chair

Bahman Rezaie, Ph.D. [brezaie@stmarytx.edu](mailto:brezaie@stmarytx.edu)

## Description of Program/Major

Industrial engineering students at St. Mary's University are trained as productivity and quality enhancement specialists. The industrial engineering program combines science, mathematics, and engineering coursework with laboratories and classes in communications, English, and other humanities and social sciences.

The same techniques used by industrial engineers in the production and manufacturing arenas can be used to improve quality in service industries. Industrial engineers are concerned with improving the interaction between humans and our equipment. They are experts when it comes to saving money and improving the workplace for fellow workers.

They may be found shortening production times, streamlining a hospital operating room, designing a comfortable workstation, distributing products worldwide, or manufacturing superior cars.

The B.S. in Industrial Engineering is accredited by the Engineering Accreditation Commission of ABET.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301      Foundations of Civilization

3

# INDUSTRIAL ENGINEERING

SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# INDUSTRIAL ENGINEERING

St. Mary's University

BS Industrial Engineering (IE) Degree Plan – ABET Accredited Program

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

First Year Courses					
	Fall	Hr		Spring	Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	EN 1311 Rhetoric & Composition <sup>2</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	EG 1304 Engineering Programming	3	___	EG 1301 Engineering Graphics & Design <sup>4</sup>	3
___	MT 2412 Univariate Calculus I	4	___	MT 2413 Univariate Calculus II	4
___	PY1404 Mechanics, Heat, Acoustics	4	___	PY2404 Electricity, Magnetism, Optics	4
___	ND 0101 Personal & Academic Development	0			
	Total	17		Total	17
Second Year Courses					
___	SMC 1314 Foundations of Reflection: God	3	___	SMC 1313 Foundations of Reflection: Others	3
___	CH 1401 General Chemistry I	4	___	SMC 2301 Foundations of Practice: Ethics	3
___	EG 2307 Engineering Mechanics	3	___	EG 2306 Principles of Materials Sciences	3
___	EG 2322 Work Design & Productivity Mgmt	3	___	EG 2325 Industrial Automation & Control	3
___	MT 3311 Differential Equations	3	___	Technical Elective*	3
	Total	16		Total	15
Third Year Courses					
___	EG 3335 Operations Research I	3	___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
___	EG 3345 Circuits & Systems I	3	___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
___	EG 4330 Quality Control & Reliability	3	___	EG 3145 Circuits & Systems Lab	1
___	EG 3333 Lean Production Systems	3	___	EG 3316 Human Factors	3
___	MT 4331 Probability and Statistics I	3	___	EG 3336 Operations Research II	3
			___	MT 4332 Probability and Statistics II	3
	Total	15		Total	16
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature Advanced Theology <sup>5</sup>	3	___	SMC 4301 Capstone Seminar-Senior Design Project II	3
___	EG 3337 Supply Chain Management	3	___	EG 3334 Engineering Economy <sup>3</sup>	3
___	EG 4331 Manufacturing Processes	3	___	EG 4132 CAM & Robotics Lab	1
___	EG 4362 Senior Design Project I <sup>1</sup>	3	___	EG 4332 CAM & Robotics	3
			___	EG 4337 Simulation	3
	Total	15		Total	13

Total Hours 124

<sup>1</sup>Speech Requirement: EG 4362 Senior Design Project 1

<sup>2</sup>Rhetoric and Composition Requirement (Must be "C" or better): EN 1311 or EN 1313 (international students)

<sup>3</sup>Social Science Requirement: EG 3334 Engineering Economy

<sup>4</sup>Fine Arts Requirement: EG 1301 Engineering Graphics & Design

<sup>5</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

\* Choose from: EG 2309 Fluid Mechanics or EG 2308 Strength of Materials

Foreign Languages – Computer, Electrical, and Industrial Engineering majors are exempt from the foreign language requirement.

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by passing coursework within the degree plan.



# INDUSTRIAL ENGINEERING

St. Mary's University  
BS Industrial Engineering (IE) Degree Plan – ABET Accredited Program – 2010  
124 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization (Senior Design Project II)	3

## **School of Science, Engineering, and Technology Specific Core (15 Hours)**

Foreign Languages – Computer, Electrical, and Industrial Engineering majors are exempt from the foreign language requirement.

__ Composition and Rhetoric (grade of "C" or better) – EN 1311, EN 1313 (for international students)	3
__ Fine Arts – EG 1301 Graphics Design	3
__ Social Science – EG 3334 Engineering Economy	3
__ Speech – EG 4362 Senior Design Project 1	3
__ Theology – Advanced Theology 33XX	3

## **BS Industrial Engineering Major Courses (79 hours)**

Engineering students must make a grade of "C" or better in all engineering courses and their prerequisites. One exception applies to the graduating senior who may petition his/her adviser to allow one grade of "D". Students are not permitted to take an engineering, science, or mathematics course unless all prerequisites are passed with a grade of "C" or better.

__ CH 1401 – General Chemistry I	4
__ EG 1304 – Engineering Programming	3
__ EG 2306 – Principles of Materials Sciences	3
__ EG 2307 – Engineering Mechanics	3
__ EG 2322 – Work Design & Productivity Management	3
__ EG 2325 – Industrial Automation & Control	3
__ EG 3145 – Circuits and Systems Lab	1
__ EG 3316 – Human Factors	3
__ EG 3333 – Lean Production Systems	3
__ EG 3335 – Operations Research I	3
__ EG 3336 – Operations Research II	3
__ EG 3337 – Supply Chain Management	3
__ EG 3345 – Circuits & Systems I	3
__ EG 4132 – CAM and Robotics Lab	1
__ EG 4330 – Quality Control and Reliability	3
__ EG 4331 – Manufacturing Processes	3
__ EG 4332 – CAM and Robotics	3
__ EG 4337 – Simulation	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3311 – Differential Equations	3
__ MT 4331 – Probability and Statistics I	3
__ MT 4332 – Probability and Statistics II	3
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4
__ Technical Elective (Choose from EG 2309 Fluid Mechanics or EG 2308 Strength of Materials)	4

## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by passing coursework within the degree plan.

# INDUSTRIAL ENGINEERING

## Department Courses and Descriptions

### **Intro to Computer/Ele E I (1)**

EG 1101

Introduction to electrical/computer engineering consist of two 1-hour course sequence directed at incoming freshmen. The two courses focus on MATLAB and its application to engineering problems. In the first course, EG1101, the basic MATLAB features are covered. This includes MATLAB help utility, MATLAB environment and desktop, all MATLAB windows and their functionalities, solving simple problems using MATLAB, preliminary graphing capabilities of MATLAB, m-file development, debugging m-files with MATLAB, solving more sophisticated engineering problems with MATLAB. Pre-requisite: none.

### **Intro to Computer/ EE II (1)**

EG 1102

Introduction to electrical/computer engineering consist of two 1-hour course sequence directed at incoming freshmen. The two courses focus on MATLAB and its application to engineering problems. In the second course, EG1102, the more advanced MATLAB features are covered. This includes m-file and its debugging features, flow control in MATLAB, more advanced usage of MATLAB help utilities, more advanced MATLAB commands, MATLAB toolboxes, solving advanced engineering and scientific problems using MATLAB, more advanced graphing capabilities of MATLAB. Pre-requisite: EG 1101.

### **Engineering Graphics and Design (3)**

EG 1301

Introduction to drawing instruments, lettering, and sketching. Work drawings: pictorials, orthographic projection, dimensioning, sections, and auxiliary views. Descriptive geometry: points, lines, planes, revolutions, intersections, etc. Use of Computer Aided Design (CAD) software. Introduction to engineering design. Several design projects are developed. Prerequisite: none.

### **Programming for Engineers (3)**

EG 1302

The goal of this course is to provide students with a working knowledge of C programming language as defined by the ANSI standard. This class does not just focus on the C language syntax and program constructs. It will also emphasize good programming habits in developing a well-structured code. The concepts that will be presented in this course include: programming environment; basic C program structure; variables, constants and operators; looping with for, while, and do while statements; decision-making constructs (if, if/else, switch, and conditional expression statements); using and writing functions; using arrays, pointers and combination thereof; string operations/functions; performing file I/O; using the preprocessor directives; and using modular development methodology. Prerequisite: none.

### **Object-Oriented Program & Desig (3)**

EG 1305

Introduction to object-oriented programming, classes, objects, data members (class attributes), methods (member functions or class behavior), data abstraction, and encapsulation. Software reuse. Constructors, destructors, and inheritance. Operator overloading. Virtual functions and polymorphism. Stream Input/Output. The preprocessor. Object-oriented analysis and design methodologies and their role in the software development process. The Unified Modeling Language (UML) as a design and development

# INDUSTRIAL ENGINEERING

tool. Extensive use of OOP programming is required. A class project is included requiring use of the UML to develop a sizable software application. A professional oral presentation and a well-written report are required. Prerequisite: EG 1302 or EG 1304 or CS 1410.

## **Engineering Seminars (0)**

EG 2010

The engineering seminars provides students exposure to outside speakers and a review of recent developments in science and engineering. Prerequisite: none.

## **Logic Design Laboratory (1)**

EG 2141

This lab introduces the basic principles of digital electronic design using standard TTL devices. Experiments illustrate the principles learned in the Fundamentals of Logic Design (EG 2341) class. The first part of this laboratory focuses on the design of combinational networks. This includes the basic operation of various logic gates; verification of truth tables; minimization of logic functions; realization of digital functions using multiple stage networks, decoders, multiplexer, and read-only memory. The second part of this lab emphasizes the design of sequential network. Here, students are introduced to various types of flip-flops, counters; design of digital circuits using Finite State Machines. Co-requisite: EG 2341.

## **Circuit Analysis Laboratory (1)**

EG 2152

This lab is geared towards students who are taking electrical engineering laboratory for the first time. The lab is divided into two parts: First part covers introductory concepts and basic measurements in electrical circuits. Second part is dedicated to circuit theorems; transient response of circuits composed of resistors, capacitors, and inductors; AC steady state; frequency response (PHASORS); and the characteristics of operational amplifiers in electrical circuits. Co-requisite: EG 2353.

## **Digital Systems Design Lab (1)**

EG 2181

Experiments illustrate the principles learned in the Digital Systems Design (EG 2382) class. The first part of this laboratory focuses on the design of sequential networks using 7400 series TTL and CMOS devices. This includes comparing the electric characteristics; drive capability and fan-out of TTL and CMOS devices; Tri-state buffers, and Open-collector outputs. The second part of this laboratory emphasizes the more recent digital systems design techniques that use modern CAD tools that support Hardware Design Languages such as VHDL. Many laboratory experiments introduce students to various VHDL sequential and concurrent constructs. Students learn how to simulate, verify, and synthesize their designs using state-of-the-art CAD tools. Prerequisites: EG 2341 and EG 2141W; Co-requisite: EG 2382.

## **High Technology & Society (3)**

EG 2300

Exploration of the social, economic, and political impact of modern science and technology. The ethical nature of scientific research and technological development. Exploration of recent scientific discoveries and technological applications. This course may be counted for physical science credit for social science majors and social science credit for SET majors.

# INDUSTRIAL ENGINEERING

## **Principles of Materials Scienc (3)**

EG 2306

A study of the atomic and crystalline structure of solids including the theory of X-ray diffraction, solid solutions, diffusion, and phase transformations. The behavior of matters based on their mechanical, electrical, thermal, magnetic, and optical properties. Point defects, dislocation theory. Prerequisites: CH 1401, PY 2404, MT 2412.

## **Engineering Mechanics (3)**

EG 2307

Fundamentals of statics, vector methods, concentrated and distributed force systems, methods of moments for extended rigid structures, static equilibrium of structures. Prerequisites: PY 1404, MT 2412.

## **Strength of Materials (3)**

EG 2308

Mechanical properties of materials: normal and shear stress, normal and shear strain. Separate treatments of axial load, torsion, and bending. Bending and shearing stresses in beams. Deflection in homogeneous beams. Design of members by strength criteria. Prerequisite: EG 2307, MT2413.

## **Fluid Mechanics (3)**

EG 2309

Forces and energy generated by liquids and gasses at rest and in motion. Fundamental laws of fluid behavior: conservation of mass, energy, and momentum. Differential and finite control volume approaches for flow analysis. Steady, incompressible flow. Prerequisites: MT 3311, PY 2404, EG 2307.

## **Human Computer Interaction (3)**

EG 2310

The goal of this course is to teach the fundamentals of human-computer interface in software design and development. Students learn to design, implement and evaluate effective and usable graphical computer interfaces. Design of windows, menus, and commands. Voice and natural language I/O. Response time and feedback. Color, icons, and sound. Students work on individual and team projects to de sign, implement and evaluate computer interfaces. Prerequisite: EG1302 or EG1304 or CS 1410.

## **Software Requirement Eng (3)**

EG 2311

This course provides an introduction to the fundamentals of software requirements management. Topics covered include requirements gathering, system modeling and software specifications. The major emphasis is on using a variety of modeling tools and techniques to define a system specification. Languages and models for representing requirements. Analysis and valida tion techniques, including need, goal, and use case analysis. Students participate in a group project on software requirements. Prerequisite: EG 1302 or EG 1304 or CS 1410.

## **Work Design & Product Measure (3)**

EG 2322

Industrial engineering tools and concepts for engineering problem solving. Work design and methods engineering. Work measurement and work sampling, productivity measurement, incentives, standard time techniques. In-class labs and design projects are required. Prerequisites: none.

# INDUSTRIAL ENGINEERING

## **Industrial Automation & Control (3)**

EG 2325

Logic-structured and icon-driven programming. Introduction to industrial field devices for control and automation. Number systems and codes. Digital and analogue signals. Interposing relay control. Timers, counters, and data compare instructions. In-class labs and design projects are required. Prerequisite: EG1302, EG1304, CS1410, or CS 1411.

## **Fundamentals of Logic Design (3)**

EG 2341

The first half of this course focuses on combinational network design. This includes the number systems and conversion; Boolean algebra; minimization of switching functions using Karnaugh maps; multi-level gate networks; multi-output networks; realizing Boolean functions using multiplexers, decoders, read-only memories, and programmable logic devices. The second half of this course focuses on the analysis and the design of sequential network. Topics covered in this part of the course include flip-flops; designing counters using different type of flip-flops; analysis of sequential networks; derivation of state graphs and tables; introduction to Finite State Machines; minimization of state tables; guidelines for state assignment; derivation of flip-flop input equations, and realization of sequential networks. Co-requisite: EG 2141W.

## **Data Structures & Algorithms (3)**

EG 2342

This course provides an introduction to the design and analysis of computer data structures and algorithms, focusing in particular on techniques for achieving high performance software in computer systems. Students will learn the necessary mathematical background to carry out algorithm analysis, such as time and space complexity, worst-case and average-case analysis, tractability & intractability, and design techniques. It discusses recursion and recurrence relations, asymptotic notations, basic data structures, dynamic dictionaries, balanced trees, priority queues, and graphs. The specific data structures which will be discussed in class include linked lists, stack, heaps, self-organizing lists, binary search trees, hash tables, AVL trees, red-black trees, balanced trees, leftist trees, minimum spanning trees, and others. Prerequisite: EG1302 or EG1304

## **Circuit Analysis I (3)**

EG 2352

Basic circuit elements and models; resistive circuits; circuit theorems; loop and nodal analysis of resistive networks; techniques of analysis of operational amplifiers; analysis of circuits with energy storage elements (capacitors and inductors); natural and step response of RL; RC; and RLC circuits. Prerequisite: PY2404. Co-requisite: MT3311.

## **Circuit Analysis II (3)**

EG 2353

The goal of this course is to provide students with a working knowledge of phasor diagrams; sinusoidal steady-state power analysis and complex load matching; series and parallel resonance; Laplace transform and its applications in circuit analysis: the step function, the impulse function, inverse transforms, initial and final value theorems, and circuit analysis in the s-domain. Transfer functions and Bode diagrams are also included. Prerequisites: EG 2352, MT 3311.

# INDUSTRIAL ENGINEERING

## **Digital Systems Design (3)**

EG 2382

The first part of this course presents a quick review of sequential network design concepts as presented in the pre-requisite course on Fundamentals of Logic Design (EG 2341); iterative networks; integrated circuit logic families and their electric characteristics; drive capability and fan-out of TTL and CMOS devices; Tri-state buffers, and Open-collector outputs. Mixing logic families; Hazard detection and prevention; designing digital systems using Programmable Logic Devices (PLD); digital systems design using Algorithmic State Machine (ASM) charts. The second part of this course focuses on the design of combinational and sequential networks using VHDL. Students will learn how to use the top-down design techniques to analyze, design, simulate, verify, and synthesize complex digital circuits using modern CAD tools. Prerequisites: EG 2341 and EG 2141W; Co-requisite: EG 2181W.

## **Artificial Intelligence (3)**

EG 2390

Introduction to Artificial Intelligence. Search techniques, knowledge representation, game playing, predicate logic. Knowledge representation using rules, expert systems, neural networks, and genetic algorithms. Coverage of an AI-specific programming language and/or AI integrated software. Prerequisite: EG 1304 or EG 1302.

## **Expert Systems and Applications (3)**

EG 2393

Fundamentals of expert systems. Knowledge representation using production rules. Knowledge acquisition and development of a knowledge base. Backward and forward chaining. Uncertainty. Development, testing, and validation of expert systems. Prerequisite: EG 1302 or EG 1304.

## **Circuits and Systems Lab (1)**

EG 3145

Basis of electrical measurements and technical report writing. Experimental verification and applications of circuit theorems and laws including the current divider, the voltage divider, and Thevenin's theorem; the application of the cathode ray oscilloscope; the analysis of the transient response of RC and RL circuits; applications of operational amplifiers in the design of summing, amplification, and comparator circuits; design of diode-clamping circuits; implementation and analysis of frequency response of filter circuits. This is a writing-intensive course. This course cannot be taken for credit by electrical engineering or computer engineering majors. Prerequisite: EG 3345

## **Electronics I Lab (1)**

EG 3156

DC circuits; the diode as a nonlinear device; the oscilloscope; RC circuits; RC filters; LC resonant circuit; rectifier; signal diodes; diode clamp; emitter follower; current source; common emitter amplifier; transistor as a switch; op-amp open-loop gain; inverting and non-inverting op-amps; op-amp follower and current source; summing amplifier; op-amp as an integrator, a differentiator, an active rectifier, and an active clamp; FET transistor; FET current source and source follower; FET as a voltage-controlled resistance; amplitude modulation and AM radio; input and output characteristics of integrated gates: TTL and CMOS. Pre-requisite: EG 2152W; corequisite: EG 3356.

# INDUSTRIAL ENGINEERING

## **Electronics II Lab (1)**

EG 3157

Flip-flops; counters; shift registers; the cascading 16-bit counter with added display and keypad; programmable divide-by-n counters; period meters; capacitance meters; memory; RAM; divide-by-3; memory-based state machines; the dynamic diode curve tracer; the grounded emitter amplifier; current sources; the Ebers-Moll model; push-pull amplifiers; differential amplifiers; the bootstrap circuit; the Miller effect; the Darlington pair; the super beta; the analog switch and its applications: chopper circuits; sample-and-hold circuits; switched capacitor filters; voltage inverter circuits; A/D and D/A converters; the phase-locked loop circuit; the frequency multiplier. Prerequisite: EG 3156W; Co-requisite: EG 3357.

## **Human Factors (3)**

EG 3316

Integration of the human component into the design, development, and evaluation of human-machine systems. Ergonomic and human factors research methodology. A term project featuring the design of a human-machine system from an ergonomic/human factors perspective is required.

## **Industrial Statistics (3)**

EG 3322

Introduction to probability and statistics; descriptive statistics; random variables; sampling; distributions; hypothesis testing; linear regression and correlation; goodness-of-fit tests; design of experiments and analysis of variance. Pre-requisite: MT2413

## **Lean Production Systems (3)**

EG 3333

Principles and methods of analysis and design of service, production, and manufacturing facilities. Plant layout. Assembly line balancing. Material handling. Lean and just-in-time. Forecasting. Inventory control. Aggregate planning. Materials requirement planning. Theory of constraints. Prerequisite: MT 2413.

## **Engineering Economy (3)**

EG 3334

Overview of finance/accounting concepts. Fundamental principles and methods for economic analysis of technical alternatives leading to decision making under deterministic and uncertain conditions. The effects of interest, taxation, depreciation, and inflation. Prerequisite: MT 2413 Calculus II.

## **Optimization (3)**

EG 3335

Introduction to mathematical programming. Linear program formulations. Optimization of linear programs using the graphical method, simplex method and special implementations of the simplex method. Duality. Sensitivity analysis. Transportation and assignment problems. Introduction to integer programming. Integer program formulations. Co-requisite: MT 2413.

## **Applied Optimi. & Analysis (3)**

EG 3336

Introduction to network optimization. Network representation and solution algorithms for minimum spanning tree, shortest path, minimum cost network flow and maximum flow - minimum cut problems.

# INDUSTRIAL ENGINEERING

Scheduling of projects using CPM/PERT. Formulation and solution of dynamic programming problems. Introduction to heuristics and meta-heuristics. Introduction to stochastic modeling. Markov chains, Chapman-Kolmogorov equations and classification of states. Introduction to queuing systems. Birth-death processes, queuing networks and queuing decision models. Prerequisites: EG 3332 or MT 4331.

## **Supply Chain Management (3)**

EG 3337

Fundamental concepts and theory for the treatment of the principles, models, and techniques for supply chain management planning, analysis, and design. Supply chain business processes, process metrics, and common, good and best practices in supply chain management. Multi-echelon inventory models, channel coordination, supply contracts and negotiations, supply chain disruptions/risk management, pricing, logistics network design, vehicle routing, reverse logistics, closed-loop supply chains, global manufacturing & distribution, supply chain profitability optimization. Decision making under uncertainty for optimal profitability in the context of global outsourcing, international logistics, and international trade treaties. Prerequisite: EG 3333

## **Circuits and Systems (3)**

EG 3345

An introduction to the theory and applications of electrical circuits, devices and systems; review of basic physics involving resistors, inductors, and capacitors; electrical units and measurements; analysis of dc circuits; analysis of the transient response to RL and RC switching circuits; introduction to ac circuit analysis; the frequency response; diodes, rectifiers and wave-shaping circuits; applications of operational amplifiers. This course may not be taken for credit by electrical engineering or computer engineering majors. Prerequisite: PY 2404; Co-requisite: MT 3311

## **Software Design & Archi (3)**

EG 3350

This course introduces basic concepts and principles about software design and software architecture. Study of design concepts and notations. Architecture, middleware architectures, design patterns, frameworks and components. Designing for qualities such as performance, security, reusability, reliability. Techniques for designing, building, and evaluating software architectures. Prerequisite: CS 3340 and EG 2311.

## **Software Project Management (3)**

EG 3351

This course introduces concepts deemed central to effective management of software projects. Software systems engineering, process management and control, and project planning and management. Using specifications and descriptions, making use of structured and object-oriented techniques, completing reviews and audits, confirming product development with planned verifications, and validations and testing. Management of expectations. Release and configuration management. Software process standards and process implementation. Software contracts and intellectual property. Prerequisite: CS 3340.

## **Software Qual Assurance & Test (3)**

EG 3352

This course provides an introduction to software quality assurance and testing. Quality assurance process and its role in software development. Measuring software quality and software quality standards. In



# INDUSTRIAL ENGINEERING

spections and formal technical reviews. Testing, verification, and validation techniques. Black-box and white-box testing. The automation of software testing. A team-based software development project is required in which students apply learned techniques. Prerequisite: CS3340.

## **Electronics I (3)**

EG 3356

Physical properties of diodes and p-n junctions; Diode circuits; physical properties of Metal-Oxide Field Effect Transistors (MOSFET); amplification circuits using MOSFET; NMOS; PMOS and CMOS devices; physical properties of Junction Field Effect Transistors (JFET); electronic circuits using JFET; physical properties of Bipolar Junction Transistors (BJT); amplification circuits using BJT; switching circuits using cut off and saturation modes of BJT. Prerequisite: EG2352.

## **Electronics II (3)**

EG 3357

The second part of a two-semester course sequence, which focuses on analog electronic circuits. Differential and multi-stage amplifiers; feed back in amplifier circuits; frequency response of different amplifiers; the four basic feedback topologies in amplifiers; various output stages; power amplifiers; and the complete analysis of the 741 operational amplifier circuit. The MultiSIM circuit analyzer software package is heavily utilized. Prerequisite: EG 3356; co-requisite: EG 3157W.

## **Microprocessors I (3)**

EG 3363

This is the first part of a two-semester course sequence that is intended to familiarize students with the development of microcontroller-based products. The first goal of the course is to teach students the skills of assembly language programming in general and the HCS12 Motorola microcontroller in particular. The second goal of the course is to introduce and familiarize students with different architecture and hardware design in microcontrollers using HCS12 as a model. The course is accompanied by laboratory assignments throughout the semester. Prerequisites: EG 1302/04, EG 2341.

## **Microprocessors II (3)**

EG 3364

The second part of a two-semester course sequence is intended to familiarize students with the development of microcontroller-based products. Concepts covered in this course include interfacing; timing diagrams and synchronization for handshake purposes. The course utilizes all the onboard functionalities of the Mc9S12DP256 microcontroller such as the A/D converter; synchronous and asynchronous serial interfaces; a timer module with input capture, output compare, and pulse accumulator capabilities; PWM; controller area network (CAN); and a variety of input and output ports. The course includes six or seven practical data acquisition and control projects based on the HCS12 microcontroller. Pre-requisites: EG 3363.

## **Electromagnetic Theory (3)**

EG 3366

Review of vector analysis, complex vectors, applications of Stokes' theorem and the divergence theorem, Maxwell's equations, the Lorentz force law, Poynting's theorem, electrostatics, introduction to magnetostatics, Faraday's law, time-varying electromagnetic fields, propagation of time-harmonic plane waves, wave attenuation in conductive and dissipative media, dispersion. Introduction to transmission

# INDUSTRIAL ENGINEERING

lines. Prerequisites: PY2404, MT3311, MT3315, EG2352. Co-requisite: EG2353

## **Semiconductor Devices (3)**

EG 3368

Review of quantum mechanics; introduction to crystallography; energy band and charge carriers; physical properties of the p-n junction; physical properties of diodes; physical behavior of Bipolar Junction Transistors (BJT) in active, saturation and cut-off modes. Prerequisites: EG3356 and senior standing.

## **Signals and Systems (3)**

EG 3372

Continuous signal and system modeling, properties of linear, time-independent systems, BIBO stability, response of continuous systems to periodic and non-periodic signals, the convolution integral, theory and applications of Fourier series and Fourier transforms, power spectrum of periodic signals, energy spectrum of non-periodic signals, modulation. Prerequisite: MT3311, EG2353.

## **Computer Organi & Architecture (3)**

EG 3374

Instruction set architecture: instruction types, data types, addressing modes, instruction formats, and RISC versus CISC architectures. Basic computer organization: Central processing unit, system buses, memory subsystems, and computer peripherals. Processor design: hardwired versus micro-programmed control unit, arithmetic logic unit, pipeline design, pipeline hazards, branch prediction, register windowing, register renaming, and instruction level parallelism. Memory hierarchy: cache organizations, cache placement and replacement policies, main memory, virtual memory, and memory protection. Performance measurements. Prerequisites: EG2341, EG2382.

## **Java and Applications (3)**

EG 3392

Introduction to Java applications and Applets. Control structures. Methods of Java API packages. Declaring and allocating arrays. Object-oriented programming. Constructors and finalizers. Inheritance, super classes, and subclasses. Private, protected, and public members. Polymorphism. strings and characters. Graphics and Java 2D. Graphical User Interface (GUI) components. Layout managers. Event-driven programming. Exception handling. Multithreading. Files and streams. Networking. Accessing databases with JDBC. Servlets. Java Server Pages (JSP). Extensive use of Java programming. A term-project is required. Prerequisites: EG 1302 or EG 1304 or CS 1410, and EG 1305.

## **Computer Aided Manf&Rob Lab (1)**

EG 4132

Operations and programming of stepper and servomotors; integration of discrete-event sensors with microcomputer interfaces. Programming, simulation, implementation, and applications of industrial robots and microcontrollers. Experiments on computer numerical control (CNC) programming and coordinate measuring machines (CMM). Solid modeling on CAD. Weekly written reports on experiments are required. Co-requisite: EG 4332.

## **Energy Conversion Lab (1)**

EG 4160

Laboratory examination of the design, construction and operating characteristics of transformers and

# INDUSTRIAL ENGINEERING

various types of motors and generators. Measurement of transformer parameters. The experimental investigation of the ac generator (alternator); the series, shunt, and compound dc motors; the synchronous motor; the induction motor; and the universal motor. This is a writing-intensive course. Co-requisite: EG4360

## **Adv Electronics Design Lab (1)**

EG 4166

This course includes individual design, construction and testing of analog, digital, and mixed electronics subsystems. Typical exercises include power control, oscillators, instrumentation amplifiers and applications, digital and mixed systems, communications circuits and electromechanical control systems. Prerequisite: EG 3357; Co-requisite: EG 4366.

## **Quality Control & Reliability (3)**

EG 4330

Statistical process control, interpretation of data, troubleshooting, control charts, process control, acceptance sampling. Fundamental reliability concepts, reliability functions, probabilistic engineering design. Relationship between statistical process control and total quality management (TQM). Malcolm Baldrige National Quality Award. ISO 9000. The quality gurus: Deming, Crosby, and Juran. Benchmarking. Quality function deployment. Prerequisite: MT4331 or EG3322 .

## **Manufacturing Processes (3)**

EG 4331

Geometric dimensioning and tolerancing standards. Economical and environmental considerations in manufacturing. Selection of materials. Processing methods: casting, injection molding, assembling, machining, etc. Measuring and inspection equipment and techniques. Product data management. Product design and redesign. Rapid prototyping. In-class labs and design projects are required. Prerequisite: EG2325.

## **Computer Aided Manufacturing (3)**

EG 4332

Modern manufacturing systems including automation, computer integrated manufacturing, robotics, and programmable logic controllers. Use of CAD/CAM/CAE software in analyzing industrial robots and manipulators. Design projects are required. Prerequisite: EG2325

## **Computer Simulation (3)**

EG 4337

Discrete-event simulation. Extensive use of Monte Carlo Simulation Software. Model verification and validation. Statistics of simulation. Prerequisites: EG 3322 or MT 4331

## **Special Topics I (3)**

EG 4338

## **Special Topics II (3)**

EG 4339

# INDUSTRIAL ENGINEERING

## **Industrial Senior Design Proj I (3)**

EG 4340

The first course in the six-hour senior design sequence for IE, EM, SECA, and ES majors. Industry-university cooperation is required. Intended to foster a thorough understanding of the iterative engineering design process, including the recognition of needs, requirements planning, analysis and design, implementation, testing, validation, and impact on society. Prerequisites for IE majors: completion of at least 18 hours out of the following set: EG 2322, EG3333, EG3334, EG3335, EG3336, EG4132, EG4330, EG4331, EG4332, EG4337, EG3316, and either EG3322 or MT4331

## **Industrial Snr Dsgn Prjct II (3)**

EG 4341

This course is a continuation of EG4340W. Prerequisite: EG 4340W.

## **Digital Signal Processing (3)**

EG 4350

Discrete time signals & systems, z-transform, discrete Fourier transform, flow graph and matrix representation of digital filters, digital filter design techniques and computation of the fast Fourier transform (FFT). MATLAB software package is heavily utilized in this course. Prerequisite: EG 3372

## **Formal Methods of Software Eng (3)**

EG 4351

The goal of this course is to teach the formal methods of specifying and verifying software. Review of mathematical foundation for formal methods. Formal languages and techniques for specification and design, including specifying syntax using grammars and finite state machines. Analysis and verification of specification and designs. Use of assertion and proofs. Automated program and design transformation. Prerequisite: MT 3323.

## **Software Maint & Evolution (3)**

EG 4352

This course introduces maintenance methodologies and the evolution of software systems. Concepts and techniques for modifying software in evolving environments. Designing and implementing software to increase maintainability and reuse; evaluating software for change; and validating software changes. Evolution of legacy software systems. Software re-engineering, data reverse engineering. Prerequisite: CS 3340.

## **Computer Networks (3)**

EG 4356

Principles of layered communication architecture: application layer protocols, transport layer services, network layer and routing, data link layer, and physical layer. Local area networks: IEEE standard 802 for LANs (Ethernet, Token Bus, Token Ring,), Asynchronous Transfer Mode (ATM), hubs, bridges, and switches, high speed LANs, satellite and wireless LANs. Circuit switching, packet switching, and message switching, Error detection, error correction, security in computer networks, multimedia networking, and performance modeling. Prerequisite: junior standing

## **Energy Conversion (3)**

# INDUSTRIAL ENGINEERING

EG 4360

Three-phase circuits, magnetic circuits, transformers, electrical-mechanical transducers, dc motors, synchronous motors, induction motors, ac generators. Theoretical principles, mathematical models, operating characteristics, and practical applications of transformers, motors, and generators are emphasized. Prerequisites: PY1404, PY2404, MT3311, EG2352, EG2353.

## **Comp & Elect Snr Design Proj I (3)**

EG 4362

This is a first course in the six-hour senior design sequence for EE and CE majors. It is intended to foster a thorough understanding of the engineering design process, from the recognition of a need and the definition of design objectives through implementation and troubleshooting. Industry-university cooperation is encouraged. This course requires proposal submission, alternative design consideration, status briefings, implementation, budgeting, and the preparation of a comprehensive final written report and oral presentation by the students. Prerequisites: Senior standing; EG 3357; EG 3364.

## **Comp & Elect Snr Design Prj II (3)**

EG 4363

This course is a continuation of EG 4362W. Prerequisite: EG 4362W.

## **Advanced Elec Design (3)**

EG 4366

This is a practical design course at the integrated circuit level. The topics include operational amplifier applications, feedback, active filters, oscillators, voltage regulators, linear and switching power supplies, precision and low noise techniques, and digital circuits. Prerequisite: EG 3357.

## **Control Systems (3)**

EG 4369

Introduction to the fundamentals of automatic control systems including the analysis and design of control systems for various engineering applications. Topics include modeling of physical systems using both transfer function and state space models. System responses, performance and design criteria. Control system characteristics, stability, sensitivity, steady state errors and transient response. Stability analyses using Routh-Hurwitz, Root-locus, Nyquist, and Bode methods. Lead and lag compensators and PID controllers design using root-locus method; Frequency-response analysis. MATLAB and SIMULINK are used to aid in the analysis and design of control systems. The laboratory work is designed to introduce the student to modern techniques needed for the design and implementation of automatic control systems. Prerequisite: EG3372 Signals and Systems

## **Communication Theory (3)**

EG 4370

Introductory information theory; frequency response of linear systems; analog-to-digital conversion; time multiplexing of signals; Pulse Amplitude Modulation (PAM); Pulse Code Modulation (PCM); quantization noise; Amplitude Modulation (AM) and Frequency Modulation (FM) techniques. Prerequisite: EG3372

## **SECA & ES Senior Dsgn Proj I (3)**

EG 4395

# INDUSTRIAL ENGINEERING

The first course in the six-hour senior design project sequence for Software Engineering and Engineering Science majors. It fosters a thorough understanding of a comprehensive effort, iterative and incremental in nature, involving problem identification, requirements planning, proposal preparation, analysis, preliminary design, detailed design, development, implementation, and testing. Frequent oral presentations and written report upgrades are expected. Industry-University cooperation is encouraged. Students have a final professional oral presentation and submit a comprehensive report. Prerequisites: senior standing and consent of the academic adviser.

## **SECA & ES Senior Dsgn Proj II (3)**

EG 4396

Continuation of EG 4395W. Prerequisite: EG 4395W.

# MATHEMATICAL SCIENCES

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Mathematics

## Department Chair

Mary Wagner-Krankel, Ph.D. [mwagnerkrankel@stmarytx.edu](mailto:mwagnerkrankel@stmarytx.edu)

## Description of Program/Major

Mathematics is more than just the theory of numbers. It discovers tools from which a quantitative understanding of our world is made possible. Moreover, the language of mathematics is truly a universal language, transcending ethnic, societal, and national boundaries. Finally, mathematics also is a critical filter, opening doors to exciting and high-paying careers in business, government, teaching and research.

Students majoring in mathematics at St. Mary's University are exposed to the theoretical foundations of mathematics and experience its applications in a variety of disciplines. Innovative teaching and learning environments allow students to develop critical thinking and general problem solving strategies. In addition, our mathematics graduates understand the power and usefulness of computers equipped with graphing and symbolic algebra. Classroom assignments enhance the students' abilities to communicate mathematics effectively—both orally and in writing. Students have the opportunity to hear about current research and present their own research at the undergraduate mathematics seminar.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3

# MATHEMATICAL SCIENCES

SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan



# MATHEMATICAL SCIENCES

St. Mary's University

B.S. in Mathematics Science Major in Mathematics (Minor required) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	EN 13XX Rhetoric & Composition <sup>2</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	MT 2412 Univariate Calculus I	4	___	Speech/Communication <sup>1</sup>	3
___	Required Science Minor course	4	___	MT 2413 Univariate Calculus II	4
___	Elective	3	___	Required Science Minor course	4
___	ND 0101 Personal & Academic Development	0			
	<b>Total</b>	<b>17</b>		<b>Total</b>	<b>17</b>
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	Foreign Language <sup>6</sup>	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	MT 3311 Differential Equations	3	___	Foreign Language <sup>6</sup>	3
___	Mathematics – Advanced course	3	___	MT3324 Linear Algebra	3
___	Required Science Minor course	3	___	MT 3372 Mathematical Modeling	3
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>15</b>
Third Year Courses					
___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	___	SMC 2304 Foundation of Practice: Literature Social Science/History <sup>3</sup>	3
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	MT 3414 Multivariate Calculus	4
___	TH 33xx Advanced Theology <sup>7</sup>	3	___	MT 4351 Numerical Analysis I	3
___	Mathematics – Advanced course	3	___	Required Science Minor course	3
___	Required Science Minor course	3			
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>16</b>
Fourth Year Courses					
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
___	MT 4331 Probability and Statistics I	3	___	MT 4332 Probability and Statistics II	3
___	MT 4395 Senior Mathematics Seminar	3	___	Elective	3
___	Required Science Minor course	3	___	Elective	3
___	Elective	3	___		
	<b>Total</b>	<b>15</b>		<b>Total</b>	<b>12</b>

Total Hours 122

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school. Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge. Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

The advanced Mathematics courses may be selected from any junior and senior level science courses.

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing **MT 4332 with a grade of "C" or higher**.

# MATHEMATICAL SCIENCES

St. Mary's University  
B.S. in Mathematics Science Major in Mathematics (Minor required) Degree Plan – 2010  
122 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## **BS Mathematics Science Minor Required Courses (59 hours)**

__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3311 – Differential Equations	3
__ MT 3324 – Linear Algebra	3
__ MT 3372 – Mathematical Modeling	3
__ MT 3414 – Multivariate Calculus	4
__ MT 4331 – Probability and Statistics I	3
__ MT 4332 – Probability and Statistics II	3
__ MT 4351 – Numerical Analysis I	3
__ MT 4395 – Senior Mathematics Seminar	3
__ Advanced Mathematics (Junior/Senior Level)	3
__ Advanced Mathematics (Junior/Senior Level)	3
__ Required Science Minor	4
__ Required Science Minor	4
__ Required Science Minor	3
__ Required Science Minor	3
__ Required Science Minor	3
__ Required Science Minor	3

## **Electives (12 hours)**

__ Electives - An elective can be any course taken from any discipline.	12
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## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing MT 4332 with a grade of "C" or higher.

# MATHEMATICAL SCIENCES

## Department Courses and Descriptions

### **Math Skills (4)**

MT 0401

A four-hour non-credit course combining review of fundamental mathematics and algebraic skills necessary for entry into college-level courses. AEP students enrolled in this course are not required to take the COMPASS Math test but must take the AEP's pre- and post-course diagnostic tests in algebra. Passing Math 0401 with a C or better allows students to enroll in credit math courses required by their major course of study. Strict adherence to the university attendance policy, including weekly participation in small-group study sessions led by a peer tutor, is necessary to complete this course.

### **Trigonometry (1)**

MT 1111

Trigonometric and inverse trigonometric functions; their basic properties and their graphs. Trigonometric identities and equations.

### **Concepts I (3)**

MT 1301

A mathematics course designed for liberal arts students. A variety of concepts are covered. The topics include networks, optimization algorithms, planning, scheduling, linear programming, coding, and web searching.

### **Concepts II (3)**

MT 1302

A mathematics course designed for liberal arts students. Elementary probability and statistics is the main focus of the course. Concepts I is not a prerequisite for Concepts II.

### **College Algebra (3)**

MT 1303

Linear and quadratic functions, graphing, inverse functions. Polynomial, exponential, logarithmic functions and their graphs. Linear and exponential regression models. Systems of equations, matrices and determinants.

### **Finite Mathematics (3)**

MT 1305

Systems of linear equations and matrices, mathematics of finance, probability, probability distributions and statistics. Excel software package will be used.

### **Calculus for Business (3)**

MT 1306

Differential and integral calculus of algebraic, exponential, and logarithmic functions and models with applications to business. Excel software package will be used. Prerequisite: MT 1303 or equivalent

### **College Algebra and Trigonomet (4)**

MT 1411

Functions, graphing, and inverse functions. Properties and graphs of exponential and logarithmic

# MATHEMATICAL SCIENCES

functions. Trigonometric functions of angles with right triangle applications. Trigonometric functions of real numbers, inverses, graphs. Trigonometric identities and equations, conic sections and polar coordinates. Prerequisite: MT 1303 or 1306 or equivalent.

## **Intro to Probability and Stati (3)**

MT 2303

This is a non-calculus introduction to the basic principles and practices of statistics. The course begins with the description and display of one - variable and two variable data sets, including histograms, stemplots, and scatterplots, as well as the computation and interpretation of mean, standard deviation, and correlation. Sufficient probability theory is developed to provide the foundation for the simpler inferential methods treated in the course: confidence intervals and tests of significance for one and two populations. A statistical software package is used throughout the course, including student homework projects. Prerequisite: MT 1303 or the equivalent.

## **Univariate Calculus I (4)**

MT 2412

Limits, continuity, derivatives, and integrals of algebraic, trigonometric, inverse trigonometric, exponential, and logarithmic functions; indeterminate forms; applications. Prerequisite: MT 1411 or equivalent.

## **Univariate Calculus II (4)**

MT 2413

Applications of integrals; formal integration techniques; numerical integration; improper integrals; sequences; series; power series; Taylor series; applications of series. Prerequisite: MT 2412 or equivalent

## **Intermediate Algebra (3)**

MT 301

Development of algebraic skills necessary as a prerequisite for students not meeting standards for entry into credit courses.

## **Essential Elements in Math I (3)**

MT 3304

A study of topics from elementary mathematics with a problem - solving approach. The course is designed for and is to be taken only by elementary education majors. Topics for the course include problem-solving, sets, numeration systems, the real numbers, number theory, probability, statistics, geometry, motion geometry, and concepts of measurement. Prerequisite: MT 1303

## **Essential Elements in Math II (3)**

MT 3305

Strategies for teaching are developed concurrently with content from the elementary mathematics curriculum. National and state educational standards in mathematics will be addressed. An in-depth analysis of the state assessment standards for both teachers and students will be included. Students will learn and experience research based instructional strategies that promote mathematical excellence in the classroom. This course is intended for Elementary Education majors.

## **Essential Elements of Mathematics III (3)**

# MATHEMATICAL SCIENCES

MT 3306

A study of topics from elementary mathematics with an inquiry-based learning approach. Topics for the course include foundations of geometry, measurement, area, volume, geometry of motion and change, probability and statistics, and pictorial representation of data. Technology will be integrated throughout the course. Prerequisite: MT 1303

## **Differential Equations (3)**

MT 3311

First-order equations; linear equations of second order and higher; applications; systems of linear differential equations; the Laplace Transform. Prerequisite: MT 2413.

## **Advanced Math for Engineers (3)**

MT 3312

Linear algebra; fundamental concepts of classical optimization; vector differential calculus, vector fields; complex variables; calculus of several variables. Prerequisite: MT 3311 or MT 3324 or consent of instructor.

## **Advanced Math for Indu Enginee (3)**

MT 3313

Multidimensional differential calculus with emphasis on real-valued functions. Fundamental concepts of classical optimization, non-linear programming and elementary linear algebra. Prerequisites: MT 3311 or MT 3324. Students can not receive credit for both MT 3313 and MT 3315.

## **Advanced Math for Ele Engineer (3)**

MT 3315

Vector differential calculus with emphasis on gradient, divergence and curl. Vector integral calculus with emphasis on Green's theorem, Stoke's theorem and the divergence theorem of Gauss. Elementary complex algebra and functions, Elementary linear algebra. Prerequisites: MT 2413. Students cannot receive credit for both MT 3313 and MT 3315.

## **Introduction to Modern Algebra (3)**

MT 3321

Algebraic structures with emphasis on the theory of groups. Prerequisite: MT 2413.

## **Discrete Math Structures (3)**

MT 3323

Logic, argument forms, methods of proof, proof writing, set theory, counting principles, recursion relations, graphs and trees. Prerequisite: MT 1303 or MT 1411.

## **Linear Algebra (3)**

MT 3324

Linear systems and matrices; determinants; vectors and vector spaces; linear transformations and matrices, eigenvalues and eigenvectors; applications. A computer software package is integrated throughout the course. Prerequisite: MT 2413.

## **History of Math (3)**

# MATHEMATICAL SCIENCES

MT 3361

The history of Mathematics is covered from the time of Pythagorus to the creation of non- Euclidean geometries in the mid- 19th century. This course could be taken by non- Majors.

## **Math Modeling (3)**

MT 3372

Creative model construction and the modeling process, model fitting and models requiring optimization, empirical model construction, modeling dynamic behavior.

## **Topics in Applied Statistics (3)**

MT 3384

One semester courses currently available under the following titles: 1) Introduction to Non- parametric Statistical Inference; 2) Introduction to Applied Regression and Correlation; 3) Fundamentals of Sampling; 4) Analysis of Variance. Prerequisite: An introductory statistics course such as PS, SC, 3381, MT 2303, or consent of the instructor. When different topics are treated, the number may be repeated for additional credit.

## **Elementary Math Analysis (3)**

MT 3392

Sequences, subsequences, convergence, Heine- Borel Theorem, functions, limits, continuity, uniform continuity, compactness, derivatives, Mean- Value Theorem, L'Hospital's Rule, Inverse Function Theorem, Riemann integration, and Fundamental Theorem of Calculus. Emphasis is on rigorous proof and communicating mathematics in verbal and written form. Prerequisites: At least one of MT 3321/3323/3324.

## **Multivariate Calculus (4)**

MT 3414

Partial derivatives, multiple integration, three- dimensional vector calculus. Prerequisite: MT 2413.

## **Complex Variables (3)**

MT 4311

Complex Numbers; Analytic Functions; Elementary Functions; Mapping by Elementary Functions; Integrals; Series; Residues and Poles. Prerequisites: MT 3414 or consent of Instructor.

## **Boundary Value Problems (3)**

MT 4312

Fourier Series, Fourier and Laplace transforms and boundary value problems of partial differential equations.

## **Probability and Statistics I (3)**

MT 4331

Discrete and continuous probability spaces; random variables and their distribution. Prerequisite: MT 2413.

## **Probability and Statistics II (3)**

MT 4332

# MATHEMATICAL SCIENCES

Descriptive statistics. Sampling distributions, estimation, tests of hypotheses, regression and correlation. Prerequisite: MT 4331 or consent of Instructor.

## **Modern Geometry (3)**

MT 4341

A study of elementary geometry from an advanced point of view. Designed primarily for secondary school teachers. Topics include the history of geometry, the axiomatic method and theorem proving, Euclidean constructions, non- Euclidean geometries, curriculum and learning issues involving geometry, and technology and the use of software in the teaching of geometry.

## **Topics in Geometry (3)**

MT 4342

When different topics are treated, MT 4342 may be repeated for additional credit on approval of the Chairperson.

## **Numerical Analysis I (3)**

MT 4351

Roots of Equations; interpolation and approximation; numerical differentiation and integration; solutions of linear systems of equations and matrix inversion. Prerequisite: MT 2413.

## **Numerical Analysis II (3)**

MT 4352

The numerical solution of ordinary differential equations; introduction to partial differential equations; numerical solutions of nonlinear systems of equations. Prerequisite: MT 3311 and MT 4351 or consent of instructor.

## **Senior Mathematics Seminar (3)**

MT 4395

A capstone course for mathematics majors in the Bachelor of Sciences programs. Each student selects a mathematical area of interest, researches the selected area, generates a reference list and research paper, and presents the paper to a seminar of faculty and students. Advanced mathematical topics will also be covered (topics may vary). Prerequisite: MT3324 and either MT3321 or MT3392 or MT4331.

## **Independent Study (1)**

MT 5160

Prerequisite: Consent of instructor and Chairperson.

## **Independent Study (2)**

MT 5260

Prerequisite: Consent of instructor and Chairperson.

## **Topics in Analysis (3)**

MT 5311

When different topics are treated, MT 5311 may be repeated for additional credit on approval of the Chairperson. Prerequisite: MT 3414 or consent of instructor.

# MATHEMATICAL SCIENCES

## **Independent Study (3)**

MT 5360

Prerequisite: Consent of instructor and Chairperson.



# MATHEMATICS

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Mathematics

## Department Chair

Mary Wagner-Krankel, Ph.D. [mwagnerkrankel@stmarytx.edu](mailto:mwagnerkrankel@stmarytx.edu)

## Description of Program/Major

Mathematics is more than just the theory of numbers. It discovers tools from which a quantitative understanding of our world is made possible. Moreover, the language of mathematics is truly a universal language, transcending ethnic, societal, and national boundaries. Finally, mathematics also is a critical filter, opening doors to exciting and high-paying careers in business, government, teaching and research.

Students majoring in mathematics at St. Mary's University are exposed to the theoretical foundations of mathematics and experience its applications in a variety of disciplines. Innovative teaching and learning environments allow students to develop critical thinking and general problemsolving strategies. In addition, our mathematics graduates understand the power and usefulness of computers equipped with graphing and symbolic algebra. Classroom assignments enhance the students' abilities to communicate mathematics effectively- both orally and in writing. Students have the opportunity to hear about current research and present their own research at the undergraduate mathematics seminar.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3
SMC 1312	Foundations of Reflection: Nature	3

# MATHEMATICS

SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# MATHEMATICS

St. Mary's University

BA in Mathematics (Minor Optional) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

First Year Courses					
Fall		Hr		Spring	
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	EN 13XX Rhetoric & Composition <sup>2</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	MT 2412 Univariate Calculus I	4	___	Speech/Communication <sup>1</sup>	3
___	Elective	3	___	MT 2413 Univariate Calculus II	4
___	Elective	3	___	Elective	3
___	ND 0101 Personal & Academic Development	0			
	Total	16		Total	16
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	Foreign Language <sup>6</sup>	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	Mathematics – Advanced course	3	___	Foreign Language <sup>6</sup>	3
___	Mathematics – Advanced course	3	___	MT3324 Linear Algebra	3
___	Elective	3	___	Elective	3
	Total	15		Total	15
Third Year Courses					
___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	___	SMC 2304 Foundation of Practice: Literature Social Science/History <sup>3</sup>	3
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	MT 3414 Multivariate Calculus	4
___	TH 33xx Advanced Theology <sup>7</sup>	3	___	Mathematics – Advanced course	3
___	Elective	3	___	Elective	3
___	Elective	3			
	Total	15		Total	16
Fourth Year Courses					
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
___	MT 4331 Probability and Statistics I	3	___	MT 4332 Probability and Statistics II	3
___	Elective	3	___	Elective	3
___	Elective	3	___	Elective	3
___	Elective	3	___	Elective	3
	Total	15		Total	12

Total Hours 120

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

The advanced Mathematics courses may be selected from any junior and senior level science courses.

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing MT 4332 with a grade of "C" or higher.

# MATHEMATICS

St. Mary's University  
BA in Mathematics (Minor Optional) Degree Plan – 2010  
120 Hours

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## **BA Mathematics Minor Optional Courses (30 hours)**

__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3324 – Linear Algebra	3
__ MT 3414 – Multivariate Calculus	4
__ MT 4331 – Probability and Statistics I	3
__ MT 4332 – Probability and Statistics II	3
__ Advanced Mathematics (Junior/Senior Level)	3
__ Advanced Mathematics (Junior/Senior Level)	3
__ Advanced Mathematics (Junior/Senior Level)	3

## **Electives (39 hours)**

__ Electives - An elective can be any course taken from any discipline.	39
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## **Proficiency in Information Technology and Information Literacy**

__ For this major, this requirement will be fulfilled by successfully completing MT 4332 with a grade of "C" or higher.	
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# MATHEMATICS

St. Mary's University

B.S. in Mathematics (Minor required) Degree Plan

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

**St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.**

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	EN 13XX Rhetoric & Composition <sup>2</sup>	3	___	SMC 1312 Foundations of Reflection: Nature	3
___	MT 2412 Univariate Calculus I	4	___	Speech/Communication <sup>1</sup>	3
___	Required Science Minor course	4	___	MT 2413 Univariate Calculus II	4
___	Elective	3	___	Required Science Minor course	4
___	ND 0101 Personal & Academic Development	0			
	Total	17		Total	17
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	Foreign Language <sup>6</sup>	3	___	SMC 2301 Foundations of Practice: Ethics	3
___	Mathematics – Advanced course	3	___	Foreign Language <sup>6</sup>	3
___	Mathematics – Advanced course	3	___	MT3324 Linear Algebra	3
___	Required Science Minor course	3	___	MT 3321 Introduction to Modern Algebra	3
	Total	15		Total	15
Third Year Courses					
___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3	___	SMC 2304 Foundation of Practice: Literature Social Science/History <sup>3</sup>	3
___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3	___	MT 3414 Multivariate Calculus	4
___	TH 33xx Advanced Theology <sup>7</sup>	3	___	Mathematics – Advanced course	3
___	MT 3392 Elementary Mathematical Analysis	3	___	Required Science Minor course	3
___	Required Science Minor course	3			
	Total	15		Total	16
Fourth Year Courses					
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
___	MT 4331 Probability and Statistics I	3	___	MT 4332 Probability and Statistics II	3
___	MT 4395 Senior Mathematics Seminar	3	___	Elective	3
___	Required Science Minor course	3	___	Elective	3
___	Elective	3	___		
	Total	15		Total	12

Total Hours 122

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

The advanced Mathematics courses may be selected from any junior and senior level science courses.

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing **MT 4332** with a grade of "C" or higher.

# MATHEMATICS

St. Mary's University  
B.S. in Mathematics (Minor required) Degree Plan – 2010  
122 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

___ SMC 1301 – Foundations of Civilization	3
___ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
___ SMC 1312 – Foundations of Reflection: Nature	3
___ SMC 1313 – Foundations of Reflection: Others	3
___ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
___ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
___ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
___ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
___ SMC 2304 – Foundations of Practice: Literature	3
___ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

___ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
___ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
___ Foreign Languages - Six hours of Second Year level (2311, 2312) in a language in which the student has prior knowledge or training, meaning he/she speaks the language or took it in high school; Or, 6 hours of Introductory level (1311, 1312) in which he/she has no prior training or knowledge; Or, 12 hours of CLEP credit.	6
___ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
___ Theology – Advanced Theology 33XX	3
___ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## **BS Mathematics Minor Required Courses (59 hours)**

___ MT 2412 – Univariate Calculus I	4
___ MT 2413 – Univariate Calculus II	4
___ MT 3324 – Linear Algebra	3
___ MT 3321 – Introduction to Modern Algebra	3
___ MT 3392 – Elementary Mathematical Analysis	3
___ MT 3414 – Multivariate Calculus	4
___ MT 4331 – Probability and Statistics I	3
___ MT 4332 – Probability and Statistics II	3
___ MT 4395 – Senior Mathematics Seminar	3
___ Advanced Mathematics (Junior/Senior Level)	3
___ Advanced Mathematics (Junior/Senior Level)	3
___ Advanced Mathematics (Junior/Senior Level)	3
___ Required Science Minor	4
___ Required Science Minor	4
___ Required Science Minor	3
___ Required Science Minor	3
___ Required Science Minor	3
___ Required Science Minor	3

## **Electives (12 hours)**

___ Electives - An elective can be any course taken from any discipline.	12
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## **Proficiency in Information Technology and Information Literacy**

\_\_\_ For this major, this requirement will be fulfilled by successfully completing MT 4332 with a grade of "C" or higher.

# MATHEMATICS

## Department Courses and Descriptions

### **Math Skills (4)**

MT 0401

A four-hour non-credit course combining review of fundamental mathematics and algebraic skills necessary for entry into college-level courses. AEP students enrolled in this course are not required to take the COMPASS Math test but must take the AEP's pre- and post-course diagnostic tests in algebra. Passing Math 0401 with a C or better allows students to enroll in credit math courses required by their major course of study. Strict adherence to the university attendance policy, including weekly participation in small-group study sessions led by a peer tutor, is necessary to complete this course.

### **Trigonometry (1)**

MT 1111

Trigonometric and inverse trigonometric functions; their basic properties and their graphs. Trigonometric identities and equations.

### **Concepts I (3)**

MT 1301

A mathematics course designed for liberal arts students. A variety of concepts are covered. The topics include networks, optimization algorithms, planning, scheduling, linear programming, coding, and web searching.

### **Concepts II (3)**

MT 1302

A mathematics course designed for liberal arts students. Elementary probability and statistics is the main focus of the course. Concepts I is not a prerequisite for Concepts II.

### **College Algebra (3)**

MT 1303

Linear and quadratic functions, graphing, inverse functions. Polynomial, exponential, logarithmic functions and their graphs. Linear and exponential regression models. Systems of equations, matrices and determinants.

### **Finite Mathematics (3)**

MT 1305

Systems of linear equations and matrices, mathematics of finance, probability, probability distributions and statistics. Excel software package will be used.

### **Calculus for Business (3)**

MT 1306

Differential and integral calculus of algebraic, exponential, and logarithmic functions and models with applications to business. Excel software package will be used. Prerequisite: MT 1303 or equivalent

### **College Algebra and Trigonomet (4)**

MT 1411

Functions, graphing, and inverse functions. Properties and graphs of exponential and logarithmic

# MATHEMATICS

functions. Trigonometric functions of angles with right triangle applications. Trigonometric functions of real numbers, inverses, graphs. Trigonometric identities and equations, conic sections and polar coordinates. Prerequisite: MT 1303 or 1306 or equivalent.

## **Intro to Probability and Stati (3)**

MT 2303

This is a non-calculus introduction to the basic principles and practices of statistics. The course begins with the description and display of one - variable and two variable data sets, including histograms, stemplots, and scatterplots, as well as the computation and interpretation of mean, standard deviation, and correlation. Sufficient probability theory is developed to provide the foundation for the simpler inferential methods treated in the course: confidence intervals and tests of significance for one and two populations. A statistical software package is used throughout the course, including student homework projects. Prerequisite: MT 1303 or the equivalent.

## **Univariate Calculus I (4)**

MT 2412

Limits, continuity, derivatives, and integrals of algebraic, trigonometric, inverse trigonometric, exponential, and logarithmic functions; indeterminate forms; applications. Prerequisite: MT 1411 or equivalent.

## **Univariate Calculus II (4)**

MT 2413

Applications of integrals; formal integration techniques; numerical integration; improper integrals; sequences; series; power series; Taylor series; applications of series. Prerequisite: MT 2412 or equivalent

## **Intermediate Algebra (3)**

MT 301

Development of algebraic skills necessary as a prerequisite for students not meeting standards for entry into credit courses.

## **Essential Elements in Math I (3)**

MT 3304

A study of topics from elementary mathematics with a problem - solving approach. The course is designed for and is to be taken only by elementary education majors. Topics for the course include problem-solving, sets, numeration systems, the real numbers, number theory, probability, statistics, geometry, motion geometry, and concepts of measurement. Prerequisite: MT 1303

## **Essential Elements in Math II (3)**

MT 3305

Strategies for teaching are developed concurrently with content from the elementary mathematics curriculum. National and state educational standards in mathematics will be addressed. An in-depth analysis of the state assessment standards for both teachers and students will be included. Students will learn and experience research based instructional strategies that promote mathematical excellence in the classroom. This course is intended for Elementary Education majors.

## **Essential Elements of Mathematics III (3)**



# MATHEMATICS

MT 3306

A study of topics from elementary mathematics with an inquiry-based learning approach. Topics for the course include foundations of geometry, measurement, area, volume, geometry of motion and change, probability and statistics, and pictorial representation of data. Technology will be integrated throughout the course. Prerequisite: MT 1303

## **Differential Equations (3)**

MT 3311

First-order equations; linear equations of second order and higher; applications; systems of linear differential equations; the Laplace Transform. Prerequisite: MT 2413.

## **Advanced Math for Engineers (3)**

MT 3312

Linear algebra; fundamental concepts of classical optimization; vector differential calculus, vector fields; complex variables; calculus of several variables. Prerequisite: MT 3311 or MT 3324 or consent of instructor.

## **Advanced Math for Indu Enginee (3)**

MT 3313

Multidimensional differential calculus with emphasis on real-valued functions. Fundamental concepts of classical optimization, non-linear programming and elementary linear algebra. Prerequisites: MT 3311 or MT 3324. Students can not receive credit for both MT 3313 and MT 3315.

## **Advanced Math for Ele Engineer (3)**

MT 3315

Vector differential calculus with emphasis on gradient, divergence and curl. Vector integral calculus with emphasis on Green's theorem, Stoke's theorem and the divergence theorem of Gauss. Elementary complex algebra and functions, Elementary linear algebra. Prerequisites: MT 2413. Students cannot receive credit for both MT 3313 and MT 3315.

## **Introduction to Modern Algebra (3)**

MT 3321

Algebraic structures with emphasis on the theory of groups. Prerequisite: MT 2413.

## **Discrete Math Structures (3)**

MT 3323

Logic, argument forms, methods of proof, proof writing, set theory, counting principles, recursion relations, graphs and trees. Prerequisite: MT 1303 or MT 1411.

## **Linear Algebra (3)**

MT 3324

Linear systems and matrices; determinants; vectors and vector spaces; linear transformations and matrices, eigenvalues and eigenvectors; applications. A computer software package is integrated throughout the course. Prerequisite: MT 2413.

## **History of Math (3)**

# MATHEMATICS

MT 3361

The history of Mathematics is covered from the time of Pythagorus to the creation of non- Euclidean geometries in the mid- 19th century. This course could be taken by non- Majors.

## **Math Modeling (3)**

MT 3372

Creative model construction and the modeling process, model fitting and models requiring optimization, empirical model construction, modeling dynamic behavior.

## **Topics in Applied Statistics (3)**

MT 3384

One semester courses currently available under the following titles: 1) Introduction to Non- parametric Statistical Inference; 2) Introduction to Applied Regression and Correlation; 3) Fundamentals of Sampling; 4) Analysis of Variance. Prerequisite: An introductory statistics course such as PS, SC, 3381, MT 2303, or consent of the instructor. When different topics are treated, the number may be repeated for additional credit.

## **Elementary Math Analysis (3)**

MT 3392

Sequences, subsequences, convergence, Heine- Borel Theorem, functions, limits, continuity, uniform continuity, compactness, derivatives, Mean- Value Theorem, L'Hospital's Rule, Inverse Function Theorem, Riemann integration, and Fundamental Theorem of Calculus. Emphasis is on rigorous proof and communicating mathematics in verbal and written form. Prerequisites: At least one of MT 3321/3323/3324.

## **Multivariate Calculus (4)**

MT 3414

Partial derivatives, multiple integration, three- dimensional vector calculus. Prerequisite: MT 2413.

## **Complex Variables (3)**

MT 4311

Complex Numbers; Analytic Functions; Elementary Functions; Mapping by Elementary Functions; Integrals; Series; Residues and Poles. Prerequisites: MT 3414 or consent of Instructor.

## **Boundary Value Problems (3)**

MT 4312

Fourier Series, Fourier and Laplace transforms and boundary value problems of partial differential equations.

## **Probability and Statistics I (3)**

MT 4331

Discrete and continuous probability spaces; random variables and their distribution. Prerequisite: MT 2413.

## **Probability and Statistics II (3)**

MT 4332

# MATHEMATICS

Descriptive statistics. Sampling distributions, estimation, tests of hypotheses, regression and correlation. Prerequisite: MT 4331 or consent of Instructor.

## **Modern Geometry (3)**

MT 4341

A study of elementary geometry from an advanced point of view. Designed primarily for secondary school teachers. Topics include the history of geometry, the axiomatic method and theorem proving, Euclidean constructions, non- Euclidean geometries, curriculum and learning issues involving geometry, and technology and the use of software in the teaching of geometry.

## **Topics in Geometry (3)**

MT 4342

When different topics are treated, MT 4342 may be repeated for additional credit on approval of the Chairperson.

## **Numerical Analysis I (3)**

MT 4351

Roots of Equations; interpolation and approximation; numerical differentiation and integration; solutions of linear systems of equations and matrix inversion. Prerequisite: MT 2413.

## **Numerical Analysis II (3)**

MT 4352

The numerical solution of ordinary differential equations; introduction to partial differential equations; numerical solutions of nonlinear systems of equations. Prerequisite: MT 3311 and MT 4351 or consent of instructor.

## **Senior Mathematics Seminar (3)**

MT 4395

A capstone course for mathematics majors in the Bachelor of Sciences programs. Each student selects a mathematical area of interest, researches the selected area, generates a reference list and research paper, and presents the paper to a seminar of faculty and students. Advanced mathematical topics will also be covered (topics may vary). Prerequisite: MT3324 and either MT3321 or MT3392 or MT4331.

## **Independent Study (1)**

MT 5160

Prerequisite: Consent of instructor and Chairperson.

## **Independent Study (2)**

MT 5260

Prerequisite: Consent of instructor and Chairperson.

## **Topics in Analysis (3)**

MT 5311

When different topics are treated, MT 5311 may be repeated for additional credit on approval of the Chairperson. Prerequisite: MT 3414 or consent of instructor.

# MATHEMATICS

## **Independent Study (3)**

MT 5360

Prerequisite: Consent of instructor and Chairperson.

# PHYSICS

## Academic Year

2011-2012

## School

School of Science, Engineering and Technology [School Web site](#)

## School Dean

Winston F. Erevelles, Ph.D. [werevelles@stmarytx.edu](mailto:werevelles@stmarytx.edu)

## Department

Physics

## Department Chair

Richard Cardenas, Ph.D. [rcardenas@stmarytx.edu](mailto:rcardenas@stmarytx.edu)

## Description of Program/Major

Physics is the study of an enormous span of natural phenomena ranging from the large scale involvement of galaxies to the the submicroscopic motion of atoms and nuclei. A major in physics at St. Mary's University prepares students with a broad based view of science, as well as the analytical tools necessary to tackle problems in many different fields. Physics is an intensive course of study that emphasizes analytical and problem solving skills. Students have the opportunity to acquire a degree either in physics or applied physics.

The Bachelor of Arts in physics is usually chosen by students who wish to teach high school physics. The applied physics degree has an option in computer science or electrical engineering. Applied physics is a Bachelor of Science degree plan that provides an instructional base in physics, engineering, mathematics and computer applications. It prepares students to enter today's high technology marketplace upon graduation. Along with technical courses, students in the program benefit from liberal arts courses in English, social science, philosophy, theology, speech, foreign language and fine arts.

## Degree Requirements

### Core Curriculum (SMC)

#### St. Mary's University Core (30 Hours)

*All St. Mary's Core SMC13## "Reflection" courses must be completed before registering for SMC23## "Practice" courses. "Reflection" courses can be taken in any order followed by "Practice" courses in any order.*

SMC 1301	Foundations of Civilization	3
SMC 1311	Foundations of Reflection: Self (Formerly PL 1310)	3

# PHYSICS

SMC 1312	Foundations of Reflection: Nature	3
SMC 1313	Foundations of Reflection: Others	3
SMC 1314	Foundations of Reflection: God (Formerly TH 2301)	3
SMC 2301	Foundations of Practice: Ethics (Formerly PL 2332)	3
SMC 2302	Foundations of Practice: Civic Engagement and Social Action	3
SMC 2303	Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
SMC 2304	Foundations of Practice: Literature	3
SMC 4301	Capstone Seminar: Prospects for Community and Civilization	3

## School Specific Core (SSC)

### School of Science, Engineering, and Technology Specific Core (21 Hours)

Speech	SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
Composition and Rhetoric (grade of "C" or better)	EN 1311, EN 1313 (for international students)	3
Foreign Languages	Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
Social Science	BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
Theology	Advanced Theology 33XX	3
Fine Arts	AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## Four Year Degree Plan

# PHYSICS

St. Mary's University  
BA Physics (PY) Math Minor Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	CH 1401 General Chemistry I	4	___	EN 13XX Rhetoric & Composition <sup>2</sup>	3
___	MT 2412 Univariate Calculus I	4	___	CH 1402 General Chemistry II	4
___	PY1404 Mechanics, Heat, Acoustics	4	___	MT 2413 Univariate Calculus II	4
___	ND 0101 Personal & Academic Development	0	___	PY2404 Electricity, Magnetism, Optics	4
	Total	15		Total	18
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	Speech/Communication <sup>1</sup>	3	___	Social Science/History <sup>3</sup>	3
___	EG 3345 Circuits and Systems	3	___	EG 3145 Circuits and Systems Lab	1
___	MT 3311 Differential Equations	3	___	MT 3414 Multivariate Calculus	4
___	PY 3301 Atomic Physics	3	___	PY 3304 Thermodynamics	3
___	PY 3101 Atomic Physics Lab	1			
	Total	16		Total	14
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics	3	___	SMC 2302 Foundations of Practice: Civic	3
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	Engagement & Social Action	
___	Foreign Language <sup>6</sup>	3	___	SMC 2303 Foundation of Practice: Fine Arts &	3
___	EG 3356 Electronics I	3	___	Creative Process	
___	EG 3156 Electronics I Lab	1	___	Foreign Language <sup>6</sup>	3
___	PY 3307 Classical Mechanics	3	___	PY 3305 Physical Optics	3
			___	Advanced Mathematics **	3
	Total	16		Total	15
Fourth Year Courses					
___	SMC 1312 Foundations of Reflection: Nature	3	___	SMC 4301 Capstone Seminar: Prospects for	3
___	SMC 2304 Foundation of Practice: Literature	3	___	Community and Civilization	
___	PY 3308 Intro to Quantum Mechanics	3	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	Science Elective*	3	___	PY3309 Electromagnetic Theory	3
___	Science/Open Elective*	3	___	Science Elective*	3
	Total	15		Total	12

Total Hours 121

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

\*The Advanced Science Electives may be selected from any junior and senior level science courses.

\*\* Advanced Mathematics course could be any junior or senior level mathematics course.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing PY 3301 with a grade of "C" or higher.

# PHYSICS

St. Mary's University  
BA Physics (PY) Math Minor Degree Plan – 2010  
121 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## **St. Mary's University Core (30 Hours)**

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## **School of Science, Engineering, and Technology Specific Core (21 Hours)**

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## **BA Physics with Math Minor Courses (70 hours)**

__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ EG 3145 – Circuits and Systems Lab	1
__ EG 3156 – Electronics I Lab	1
__ EG 3345 – Circuits and Systems	3
__ EG 3356 – Electronics I	3
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3311 – Differential Equations	3
__ MT 3414 – Multivariate Calculus	4
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4
__ PY 3101 – Atomic Physics Lab	1
__ PY 3301 – Atomic Physics	3
__ PY 3304 – Thermodynamics	3
__ PY 3305 – Physical Optics	3
__ PY 3307 – Classical Mechanics	3
__ PY 3308 – Intro to Quantum Mechanics	3
__ PY 3309 – Electromagnetic Theory	3
__ Advanced Mathematics	3
__ Advanced Science	3
__ Advanced Science	3
__ Advanced Science/Open Elective	3

## **Proficiency in Information Technology and Information Literacy**

\_\_ For this major, this requirement will be fulfilled by successfully completing PY 3301 **with a grade of "C" or higher.**



# PHYSICS

St. Mary's University

BS Physics (PY) Biophysics Option Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	CH 1401 General Chemistry I	4	___	SMC 1312 Foundations of Reflection: Nature	3
___	MT 2412 Univariate Calculus I	4	___	CH 1402 General Chemistry II	4
___	PY1404 Mechanics, Heat, Acoustics	4	___	MT 2413 Univariate Calculus II	4
___	ND 0101 Personal & Academic Development	0	___	PY2404 Electricity, Magnetism, Optics	4
	Total	15		Total	18
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others Speech/Communication <sup>1</sup>	3 3	___	SMC 1314 Foundations of Reflection: God	3
___	BL 1401 General Biology I	4	___	BL 1402 General Biology II	4
___	MT 3311 Differential Equations	3	___	MT3414 Multivariate Calculus	4
___	PY 3301 Atomic Physics	3	___	PY3304 Thermodynamics	3
___	PY 3101 Atomic Physics Lab	1	___	PY3102 Advanced Physics Lab	1
	Total	17		Total	15
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3 3	___	SMC 2302 Foundations of Practice: Civic Engagement & Social Action	3
___	Foreign Language <sup>6</sup>	3	___	SMC 2303 Foundation of Practice: Fine Arts & Creative Process	3
___	CH 3411 Organic Chemistry I	4	___	Foreign Language <sup>6</sup>	3
___	PY3308 Intro to Quantum Mechanics	3	___	CH 3412 Organic Chemistry II	4
			___	Advanced Science Elective	3
	Total	16		Total	16
Fourth Year Courses					
___	SMC 2304 Foundation of Practice: Literature	3	___	SMC 4301 Capstone Seminar: Prospects for Community and Civilization	3
___	EN 13XX Rhetoric & Composition <sup>2</sup>	3	___	Social Science/History <sup>3</sup>	3
___	CH 4451 Biochemistry I	4	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	PY3325: Special Topics–Biophysics	3	___	PY 3309 Electromagnetic Theory	3
___			___	Advanced Science Elective	3
	Total	13		Total	15

Total Hours 125

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing PY 3301 with a grade of "C" or higher.

# PHYSICS

St. Mary's University  
BS Physics (PY) Biophysics Option Degree Plan – 2010  
125 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

__ SMC 1301 – Foundations of Civilization	3
__ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
__ SMC 1312 – Foundations of Reflection: Nature	3
__ SMC 1313 – Foundations of Reflection: Others	3
__ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
__ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
__ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
__ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
__ SMC 2304 – Foundations of Practice: Literature	3
__ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## School of Science, Engineering, and Technology Specific Core (21 Hours)

__ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
__ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
__ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
__ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
__ Theology – Advanced Theology 33XX	3
__ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## BS Physics Biophysics Option Major Courses (74 hours)

__ BL 1401 – General Biology I	4
__ BL 1402 – General Biology II	4
__ CH 1401 – General Chemistry I	4
__ CH 1402 – General Chemistry II	4
__ CH 3411 – Organic Chemistry I	4
__ CH 3412 – Organic Chemistry II	4
__ CH 4451 – Biochemistry I	4
__ MT 2412 – Univariate Calculus I	4
__ MT 2413 – Univariate Calculus II	4
__ MT 3311 – Differential Equations	3
__ MT 3414 – Multivariate Calculus	4
__ PY 1404 – Mechanics, Heat Acoustics	4
__ PY 2404 – Electricity, Magnetism, Optics	4
__ PY 3101 – Atomic Physics Lab	1
__ PY 3102 – Advanced Physics Lab	1
__ PY 3301 – Atomic Physics	3
__ PY 3304 – Thermodynamics	3
__ PY 3308 – Intro to Quantum Mechanics	3
__ PY 3309 – Electromagnetic Theory	3
__ PY 3325 – Special Topics – Biophysics	3
__ Advanced Science Elective	3
__ Advanced Science Elective	3

## Proficiency in Information Technology and Information Literacy

\_\_ For this major, this requirement will be fulfilled by successfully completing PY 3301 with a grade of "C" or higher.

# PHYSICS

St. Mary's University  
BS Physics (PY) Degree Plan

(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)

St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.

First Year Courses					
Fall			Spring		
		Hr			Hr
___	SMC 1301 Foundations of Civilization	3	___	SMC 1311 Foundations of Reflection: Self	3
___	CH 1401 General Chemistry I	4	___	CH 1402 General Chemistry II	4
___	MT 2412 Univariate Calculus I	4	___	MT 2413 Univariate Calculus II	4
___	PY1404 Mechanics, Heat, Acoustics	4	___	PY2404 Electricity, Magnetism, Optics	4
___	ND 0101 Personal & Academic Development	0	___		
	Total	15		Total	15
Second Year Courses					
___	SMC 1313 Foundations of Reflection: Others	3	___	SMC 1314 Foundations of Reflection: God	3
___	EN 13XX Rhetoric & Composition <sup>2</sup>	3	___	Social Science/History <sup>3</sup>	3
___	Speech/Communication <sup>1</sup>	3	___	MT3414 Multivariate Calculus	4
___	MT3311 Differential Equations	3	___	PY3304 Thermodynamics	3
___	PY3301 Atomic Physics	3	___	PY3102 Advanced Physics Lab	1
___	PY3101 Atomic Physics Lab	1	___		
	Total	16		Total	14
Third Year Courses					
___	SMC 2301 Foundations of Practice: Ethics	3	___	SMC 2302 Foundations of Practice: Civic	3
___	Fine Arts <sup>4</sup> /Literature <sup>5</sup>	3	___	Engagement & Social Action	
___	Foreign Language <sup>6</sup>	3	___	SMC 2303 Foundation of Practice: Fine Arts &	3
___	MT4331 Probability and Statistics I	3	___	Creative Process	
___	PY3307 Classical Mechanics	3	___	Foreign Language <sup>6</sup>	3
___	PY3113W Electronics Lab	1	___	PY3309 Electromagnetic Theory	3
			___	PY3305 Physical Optics	3
	Total	16		Total	15
Fourth Year Courses					
___	SMC 1312 Foundations of Reflection: Nature	3	___	SMC 4301 Capstone Seminar: Prospects for	3
___	SMC 2304 Foundation of Practice: Literature	3	___	Community and Civilization	
___	PY3308 Intro to Quantum Mechanics	3	___	TH 33xx Advanced Theology <sup>7</sup>	3
___	Science Elective*	4	___	PY3325: Special Topics--Advanced Quantum	3
___	Science Elective*	3	___	Science Elective*	3
			___	Science Elective*	3
	Total	16		Total	15

Total Hours 122

<sup>1</sup>Students select from the following courses for Speech: SE 1321 (international students), 1341, 2333, 3391

<sup>2</sup>Students select from the following courses for Rhetoric & Composition (**Must be "C" or better**): EN 1311, 1313 (international students)

<sup>3</sup>Students select from the following courses for Social Science: BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303

<sup>4</sup>Students select from the following courses for Fine Arts: AR \*\*\*\*, DM \*\*\*\*, MU \*\*\*\*

<sup>5</sup>Students select from the following courses for Literature: EN 2321, 2322, 2353, 2354, 2355, 2356

<sup>6</sup>Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit.

<sup>7</sup>Students select from the following courses for Theology: TH 3301, 3302, 3332, 3334, 3340, 3350, 3352, 3356, 3380, 3382, 4359, HU 3300

\*The Science Elective can be composed of one 4 hour science course (with lab) plus an additional 3 hour science class or two 3 hour science courses plus a 1 hour lab course.

Minors in Chemistry and Biology require 20 credit hours while minors in Computer Science and Environmental Science require 18 credit hours.

## PROFICIENCY IN INFORMATION TECHNOLOGY AND INFORMATION LITERACY

For this major, this requirement will be fulfilled by successfully completing PY 3301 with a grade of "C" or higher.

# PHYSICS

St. Mary's University  
BS Physics (PY) Degree Plan – 2010  
122 Hours

*(This is a recommended degree plan subject to changes. Please meet with your advisor on a regular basis.)*

## St. Mary's University Core (30 Hours)

*St. Mary's University Core (SMC) courses may be taken in any order; however, SMC 1311 is a pre-requisite for SMC 1314, SMC 1301 is a pre-requisite for any SMC 23XX course, and SMC 4301 must be taken Senior Year.*

___ SMC 1301 – Foundations of Civilization	3
___ SMC 1311 – Foundations of Reflection: Self (Formerly PL 1310)	3
___ SMC 1312 – Foundations of Reflection: Nature	3
___ SMC 1313 – Foundations of Reflection: Others	3
___ SMC 1314 – Foundations of Reflection: God (Formerly TH 2301)	3
___ SMC 2301 – Foundations of Practice: Ethics (Formerly PL 2332)	3
___ SMC 2302 – Foundations of Practice: Civic Engagement and Social Action	3
___ SMC 2303 – Foundations of Practice: Fine Arts and Creative Process (Formerly FA 1101, FA 1102, FA 1103)	3
___ SMC 2304 – Foundations of Practice: Literature	3
___ SMC 4301 – Capstone Seminar: Prospects for Community and Civilization	3

## School of Science, Engineering, and Technology Specific Core (21 Hours)

___ Speech – SE 1321 (for international students), SE 1341, SE 2333, SE 3391	3
___ Composition and Rhetoric ( <b>grade of "C" or better</b> ) – EN 1311, EN 1313 (for international students)	3
___ Foreign Languages - Six hours at the sophomore level (2311, 2312) in a Foreign Language previously studied for a minimum of one year; Or, 6 hours of introductory level (1311, 1312) in a Foreign Language not previously studied; Or, 12 hours of CLEP credit for a language previously studied.	6
___ Social Science – BA 1310, BA 3325, CJ 2300, CJ 3300, EC 2301, EC 2303, PO 1311, PO 1312, PO 1314, PS 1301, PS 3386, SC/CR 1311, SC 3321, HU 3300, HU 3303	3
___ Theology – Advanced Theology 33XX	3
___ Fine Arts – AR, DM, MU or Literature: EN 2321, 2322, 2353, 2354, 2355, 2356	3

## BS Physics Major Courses (71 hours)

___ CH 1401 – General Chemistry I	4
___ CH 1402 – General Chemistry II	4
___ MT 2412 – Univariate Calculus I	4
___ MT 2413 – Univariate Calculus II	4
___ MT 3311 – Differential Equations	3
___ MT 3414 – Multivariate Calculus	4
___ MT 4331 – Probability and Statistics I	3
___ PY 1404 – Mechanics, Heat Acoustics	4
___ PY 2404 – Electricity, Magnetism, Optics	4
___ PY 3101 – Atomic Physics Lab	1
___ PY 3102 – Advanced Physics Lab	1
___ PY 3113 – Electronics Lab	1
___ PY 3301 – Atomic Physics	3
___ PY 3304 – Thermodynamics	3
___ PY 3305 – Physical Optics	3
___ PY 3307 – Classical Mechanics	3
___ PY 3308 – Intro to Quantum Mechanics	3
___ PY 3309 – Electromagnetic Theory	3
___ PY 3325 – Special Topics – Advanced Quantum	3
___ Science Elective	4
___ Science Elective	3
___ Science Elective	3
___ Science Elective	3

## Proficiency in Information Technology and Information Literacy

\_\_\_ For this major, this requirement will be fulfilled by successfully completing PY 3301 **with a grade of "C" or higher.**

# PHYSICS

## Department Courses and Descriptions

### **Physics Concepts & Application (3)**

PY 1300

Designed to convey the considerable bearing physical laws have on common experience. Applications in trades, professions and industry are provided. Directed to ward non-science majors to help them evaluate the evidence of their own experience and see the pervasiveness of physics in virtually every aspect of technological society. Topics: Motion, Gravity, Relativity, Energy and Power, Energy Resources, Waves, Sound and Electricity.

### **Modern Astronomy (3)**

PY 1310

A course that will be of interest to students not majoring in science, engineering or mathematics as well as those majoring in these fields. This course deals mainly with stellar and galactic astronomy but begins with a brief survey of our solar system including orbits and Kepler's laws. The emphasis is placed upon how compositions, ages and evolution are deduced. The course will be somewhat quantitative but the mathematical requirements are minimal.

### **General Physics I (4)**

PY 1401

First semester: mechanics, sound and heat. Second semester: electricity, light, atomic and nuclear physics. Intended for non-physics and non-engineering students. (Lecture 3 hours; Lab 4 hours.) (PHYS 1401)

### **General Physics II (4)**

PY 1402

First semester: mechanics, sound and heat. Second semester: electricity, light, atomic and nuclear physics. Intended for non-physics and non-engineering students. (Lecture 3 hours; Lab 4 hours.) (PHYS 1402)

### **Mechanics, Heat Acoustics (4)**

PY 1404

Calculus based physics. (Lecture 3 hours; Lab 4 hours.) Co-requisite MT 2412 (PHYS 2425)

### **Electricity, Magnetism, Optics (4)**

PY 2404

Calculus based physics. (Lecture 3 hours; Lab 4 hours.) Prerequisites PY1404, MT 2412 (PHYS 2426)

### **Atomic Physics Lab (1)**

PY 3101

(Lab 4 hours per week; usually concurrent with PY 3301.)

### **Nuclear Physics Lab (1)**

PY 3102

(Lab 4 hours per week; usually concurrent with PY 3302.)

### **Electronics Lab I (1)**

PY 3113

# PHYSICS

Same as EG 3156

## **Electronics Laboratory II (1)**

PY 3114

Same as EG 3157

## **Special Topics Laboratory (1)**

PY 3125

## **Atomic Physics (3)**

PY 3301

Special relativity, electrons and quanta, Quantum Theory, Schrödinger's Equation, x-rays -spectra. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Nuclear Physics (3)**

PY 3302

Radio activity, Rutherford scattering, nuclear atom, radiation detectors, nuclear reaction, alpha decay, beta decay, gamma radiation, nuclear models, accelerators. Prerequisite: PY 3301. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Thermodynamics (3)**

PY 3304

States and processes, equations of state, internal energy, enthalpy, the ideal gas, incompressible substances, entropy and the second law, second law analysis, thermodynamics relationships, engineering applications. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Physical Optics (3)**

PY 3305

Wave theory, interference, diffraction, polarization, spectroscopy, and photometry. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Mechanics (3)**

PY 3307

Vector approach to Newtonian mechanics. Static and Kinetics. Introduction to the Lagrangian and Hamiltonian approach. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Quantum Mechanics (3)**

PY 3308

Schrodinger wave equation, stationary state solutions, the hydrogen atom, angular momentum, perturbation theory. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Electromagnetics (3)**

# PHYSICS

PY 3309

Vector analysis, electrostatics, dielectrics, magnetostatics, Maxwell's equation, wave propagation, radiation. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

## **Electronics (3)**

PY 3313

Theory of semiconductors; discrete devices and integrated circuits; linear and digital operation. (EG 2341, EG 2152, EG 2352, EG 2353 are prerequisites.) Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses. (same as EG3356)

## **Electronics (3)**

PY 3314

Theory of semiconductors; discrete devices and integrated circuits; linear and digital operation. (EG 2341, EG 2152, EG 2352, EG 2353 are prerequisites.) Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses. (same as EG3357)

## **Special Topics (3)**

PY 3325

This course is used to introduce special topics of interest. Topics in past have included the following: Particle Physics, Biophysics, Functional Neuro imaging, Fiesta of Physics Outreach, Advanced Electromagnetic theory and Advanced Quantum Mechanics. Note: PY 1404 and PY 2404 are prerequisites and MT 3311 is a co-requisite for 3000 level physics courses.

# About the Catalog

The St. Mary's University Undergraduate Catalog online is the comprehensive single source of University-wide information related to academic programs, course descriptions, degree programs, and policies that govern progress towards completion of an undergraduate degree. On many subjects, more detailed information is available from school and department webpages for various programs and services. Students should seek information from these sources as needed.

The University Catalog is available exclusively online; printed copies are not available.

## **The catalog is organized into the following sections:**

### **Search Programs and Courses**

A search interface is provided for searching programs and course descriptions.

### **About St. Mary's**

This section contains general, as well as historical information about the University.

### **Admission**

This section contains introductory information pertaining to admission process and philosophy.

### **Financial Planning**

This section contains introductory information concerning tuition, payments, and financial aid.

### **Academic Policies and Procedures**

This section includes current University academic policies: graduation requirements, grade appeal, academic integrity, change of major, grades, and other policies that bear directly on progress towards completion of an undergraduate degree.

### **Student Services**

This section includes information on services available to students.

### **Special Groups and Institutes**

This section includes information on special groups and institutes of the University.

### **Majors and Programs**



Majors and programs are organized by school. For each program the following information is provided:

- Academic year for the program
- School name for the program
- School dean's name and e-mail for the program
- Department name for the program
- Department chair name and e-mail for the program
- Description of program/major
- Degree requirements
  - Core curriculum
  - School specific core
  - Major requirements
    - Sample 4-year degree plan
- Department courses and descriptions
- Department faculty website link
- Department website link

## **Minors**

This section contains a listing of minors and course requirements organized by school.

## **PDF Versions**

This section contains menu links to PDF versions of the Undergraduate Catalog.

## **Downloading and Printing Catalog Pages**

- Program only: You can download and print a PDF for a single program by clicking on the PDF icon next to the program title.
- School only: You can download and print a PDF for all programs within a school.
- Complete: You can download and print the entire catalog.

### **Printing only a portion of catalog web content:**

Copy the critical text that you want to print, and then paste it into another program, like Word or Notepad, and print from that program.

## **Previous Catalogs**

- [2010 - 2011](#)
- [2009 - 2010](#)
- [2008 - 2009](#)
- [2007 - 2008](#)
- [2006 - 2007](#)
- [2005 - 2006](#)
- [2004 - 2005](#)

## **Disclaimer**

The University reserves the right at any time to delete, amend, or alter any of the customs, rules, regulations, and requirements of the University, such as required courses, credit hours and weeks in resident study to graduate even though the same may not be expressly set out in this online catalog. Information contained herein is not to be regarded as creating a binding contract between the applicant or the student and the University. This disclaimer is necessitated by the fact that the Catalog is an accurate compilation of the customs, rules, regulations, and requirements of the University as of the time it is published. During the year a Catalog is in effect, the continuing responsibility of operating the school may require changes by the University administration of those customs, rules, regulations, and requirements. Students should be aware, therefore, of the need to determine the current status of any rule stated in this Catalog.

# About St. Mary's University

St. Mary's University, founded in 1852 by Marianist brothers and priests, is the first institution of higher learning in San Antonio and the oldest Catholic university in Texas and the Southwest. Personal attention and powerful academic programs have made St. Mary's a nationally recognized liberal arts institution. With a diverse student population of about 4,000 of all faiths and backgrounds, St. Mary's is home to five schools: [Humanities and Social Sciences](#), [Bill Greehey School of Business](#), [Science, Engineering and Technology](#), [Graduate](#), and the [School of Law](#).

The University provides a Catholic education experience that evokes academic excellence while integrating liberal studies, professional preparation and ethical commitment. St. Mary's full-time faculty members, 94 percent of whom hold doctoral or terminal degrees in their fields, are committed to student success in and out of the classroom. St. Mary's has approximately 70 undergraduate and graduate majors and offers over 120 degree programs, which include two doctoral and two law programs. The student/faculty ratio of 13-to-1 permits small classes and promotes active learning.

The Marianists who came to San Antonio in 1852 responded to the call of their superiors to establish an educational institution to regenerate the people of the city. Through their work and the work of those who followed them, St. Mary's University has maintained its reputation as "a noble institution destined to be a great education center of the Southwest."

## Mission Statement

St. Mary's University, as a Catholic Marianist University, fosters the formation of people in faith and educates leaders for the common good through community, integrated liberal arts and professional education, and academic excellence.

## Accreditation

### Academic Accreditation

Accreditation is a status awarded to an educational institution or a program that has been found to meet or exceed stated standards of excellence and quality in educational practices. St. Mary's University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097: Telephone number 404-679-4501) to award the B.A., B.A.M., B.A.T., B.A.T.I., B.A.S.S.H., B.B.A., B.S., M.A., M.Acc., M.B.A., M.J.A., M.P.A., M.S., J.D., and Ph.D. degrees.

### Specialized Accreditation

#### Business Administration

**Bill Greehey School of Business:** Accredited by AACSB International – Association to Advance Collegiate Schools of Business.

**Master of Business Administration (M.B.A.):** AACSB – International Association of Management Education

## **Counseling**

**Clinical Mental Health Counseling (M.A.):** CACREP – Council for Accreditation of Counseling and Related Educational Programs

**Marriage and Family Therapy (M.A.):** COAMFTE – Commission on Accreditation for Marriage and Family Therapy Education

**Counselor Education and Supervision (Ph.D.):** CACREP – Council for Accreditation of Counseling and Related Educational Programs

**Marriage and Family Therapy (Ph.D.):** COAMFTE – Commission on Accreditation for Marriage and Family Therapy Education

## **Education**

**Catholic School Leadership (M.A.):** Approved by The Texas State Board for Educator Certification

**Education (M.A.):** Approved by The Texas State Board for Educator Certification

**Educational Leadership (M.A.):** Approved by The Texas State Board for Educator Certification

**Reading (M.A.):** Approved by The Texas State Board for Educator Certification

**Teacher Education Program:** Approved by the Texas State Board for Educator Certification

**B.A. Degree Program:** Accredited by the National Association of Schools of Music

## **Engineering**

**Computer Engineering (B.S.):** Accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>

**Electrical Engineering (B.S.):** Accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>

**Industrial Engineering (B.S.) :** Accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>

## **Law**

**Juris Doctorate (J.D.):** Approved by The American Bar Association

## **Institutional Memberships**

The American Association of Higher Education  
The American Association of University Women  
The American Council on Education  
The American Association of Colleges for Teacher Education  
The American Bar Association  
The American Schools of Oriental Research  
The National Association of Schools of Music  
The Association of American Colleges and Universities  
The Association of American Law Schools  
The Association of Governing Boards of Colleges and Universities  
The Association of Texas Colleges and Universities  
The Association of Texas Graduate Schools  
The Conference of Southern Graduate Schools  
The Council of Colleges of Arts and Sciences  
The Hispanic Association of Colleges and Universities  
The International Association of Counseling Services  
The Independent Colleges and Universities of Texas  
The National Association of Independent Colleges and Universities  
The National Catholic Educational Association  
The Association of Catholic Colleges and Universities  
The National Collegiate Honors Council  
The Southern Association of Colleges and Schools  
The Texas Humanities Alliance  
Council of Undergraduate Research

# Admission

The St. Mary's University community is a place where student learning thrives and a culture where serving others is celebrated. Students possessing the aptitude and motivation to succeed at St. Mary's are encouraged to apply for admission. Applicants must demonstrate a level of scholastic achievement that would indicate ability to succeed in an academic program at St. Mary's University. Balanced consideration is given to all aspects of an applicant's high school performance, including selection of college-preparatory courses, grade point average and grade pattern throughout high school, class rank, standardized test scores (SAT or ACT), and record of leadership and service. The admission committee evaluates transfer applicants based on all academic work attempted at the college or university level. Holistic review processes are designed to identify students who will flourish at St. Mary's University.

For additional information, [click here to access the Admission website](#).

# Financial Planning

## Business Office

The Business Office serves the University community as a whole. Students are the largest segment of our valued clientele, and this section is for providing important information pertaining to student financial transactions.

The Business Office is the center for all student financial transactions during a student's enrollment at St. Mary's University. Our office assist with billing, collection of tuition/fees payments, financial arrangements, and also process refunds checks.

- [Tuition & Fees](#)
- [Payment Policy](#)

## Financial Aid

St. Mary's University desires to assist all qualified students who seek financial assistance in order to continue their education. Thus the University has established a complete student aid program which includes scholarships, grants, loans, tuition reductions and part-time employment. The allocation of financial assistance is usually related to the student's need. Financial need is the difference between the expense of attending college and the financial resources available to the student and the student's family to meet expenses. It is the basic policy of most colleges to expect that the student's family will make a reasonable effort to assist with the student's college expenses from the family's resources.

The student is also expected to make a contribution from savings and employment. To assure the most equitable distribution of financial assistance, the University uses the financial need analysis information provided by the students and their families on the Free Application for Federal Student Aid (i.e. FAFSA) form. The expected family contribution to the educational expense is determined by considering the family's resources and factors influencing the use of these resources -- number of dependents, number in college, retirement needs, assets, investments, and other special problems which deserve consideration. Financial assistance from the University must be viewed as supplemental to all other resources (parent's and/or student's expected contribution, percentage of student's savings, student's summer earnings, etc.) available to meet the expenses of attending the University.

For additional information on Financial Assistance, click here to access the [Office of Financial Assistance website](#).





# Academic Policies and Procedures

As an institution of higher learning, St. Mary's University is society's center for ideas and the procedures necessary to implement knowledge. Competent performance and an ordered social structure are objectives no other institution can fulfill. This is a profound trust and therefore the University has the obligation to refine concepts of personal and social responsibility. It has the right to expect mature attitudes of self-discipline and the dignified behavior of the scholar.

## Student Responsibility

Students are ultimately responsible for keeping informed about and observing all disciplinary and academic regulations and decisions that may affect their status at St. Mary's University. In this obligation they are assisted especially through this academic catalog, the bulletin boards, and e-mail. They should acquaint themselves, therefore, with the contents of the catalog and read the notices on University, School, and Departmental bulletin boards, where announcements may appear concerning changes in schedule, revision of rules and regulations, and calls for students to appear at administrative offices. Promulgations appearing on bulletin boards become binding within 24 hours after being posted. Notices to appear in particular offices are sometimes transmitted via the student's Instructor. All currently enrolled students are issued a St. Mary's University e-mail account. Students are expected to check their issued e-mail account regularly. The St. Mary's University e-mail account is the primary source of the University communicating with the student concerning important announcements and special activities. There are, for example, changes to registration, add/drop process, class cancellations, priority registration, transcripts ordered and processed, if a 'hold' exists, Career Services Center recruiting information, University Ministry events, sporting events, graduation information, and much more. This service is free and available to all currently enrolled students. Students are required to use it.

Students must register for courses the semester during which they will actually attend those courses; otherwise, course credit will not be granted. Students may not begin formal course work (including internships, service learning, or field placement hours) before the semester for which they have registered for the course. Any exceptions to this policy must be approved in advance and in writing by the student's respective Academic Dean.

## Class Attendance

Class attendance is related to academic success, and class participation contributes to the synergism of the educational process. Undergraduate students are expected to attend all classes, including laboratories, practica, and events associated with the course or program.

The Professor keeps the roll, may record a zero for any work missed due to an unexcused absence, and may drop a student for missing an equivalent of two weeks of classes. One absence in a laboratory will be the equivalent of two 50-minute absences or one 75-minute absence. "Two weeks" are computed as follows:

### **Fall and Spring Semesters:**

- Six unexcused absences in a 50-minute class period
- Four unexcused absences in a 75-minute class period
- Two evening classes which are 165 minutes per meeting

### **Summer Sessions:**

- Four day-class meetings
- Two evening-class meetings

### **Three tardies constitute one absence**

Absences incurred during late registration (first week of classes) are considered excused. Absences for reasons other than University-sanctioned events (which must be approved by Deans or the Academic Vice President) will be determined to be "excused" or "not excused" by the Professor. An excessive number of absences, even if they are excused, can severely compromise the quality of the students' learning experience. Therefore, if the Professor judges that the student has missed excessive material due to absences (excused, unexcused or a combination of the two), that Professor may initiate action for withdrawal of the student from the class. The Professor shall notify a student one class prior to initiating action for a student's withdrawal. The student will be charged the regular \$10 add/drop fee.

Grades assigned for withdrawals initiated by the Professor or by the student are "W" (Withdrawal) or "WF" (Withdrawal with Failure). The grades "W" or "WF" will be assigned according to the dates published in the Academic Calendar. The grade "WF" is calculated in a student's grade point average as an "F."

It is the responsibility of the student to contact the Professor before an absence, if possible, or, in the case of an emergency, as soon after the absence as possible. It is also the responsibility of the student to make up any missed work to the satisfaction of the Professor on the basis of guidelines stated in that Professor's course syllabus.

Appeals from decisions made concerning this attendance policy may be brought to the attention of the departmental Chairperson. If the results of an appeal are not satisfactory at the chair person level, an appeal may be brought to the attention of the course respective Academic Dean.

## **Academic Honesty**

Based upon its philosophy of education, St. Mary's University is strongly committed to academic excellence, truth, honesty, and personal integrity. The university expects all students to agree to the following:

### **The St. Mary's University Honor Code**

As a member of the St. Mary's University Community, I promise not to participate in academic dishonesty, including cheating, plagiarism, fabrication, or other academic misconduct which

deliberately infringes upon University policy. I will not tolerate these activities from my fellow classmates.

Academic dishonesty is outlined in the Student Handbook. Students of the St. Mary's University community who will fully choose to violate the Honor Code understand that the Dean of the appropriate School will adjudicate infractions according to Article V: Judicial Charges and Hearings of the Code of Student Conduct. If the student is deemed guilty, the consequences could include removal from St. Mary's University.

Sanctions for a student's academic dishonesty vary according to the nature and the seriousness of the offense. Teachers may require a student to redo a class/laboratory assignment; may record an F (Failure) for a particular test, examination, or class/laboratory assignment which involved dishonesty; or may record an F (Failure) for a final course grade. Any student appeal of a teacher imposed sanction must be made in writing to the student's Dean within fourteen (14) days. Teachers inform their Department Chairperson in writing, with a copy to their Dean, concerning any sanctions imposed upon students for academic dishonesty. A written statement of official policies, procedures, and processes related to academic dishonesty is available in any Dean's office.

## **Study Week (No Examination Week)**

During the week preceding the official examinations terminating the Fall and Spring semesters, classes meet, but no major tests should be given. All major reports and assignments should be scheduled to be completed before this week.

## **Final Examinations**

Departure from the published final examination schedule can be authorized only by the Dean of the School for the courses. All final examinations must be administered during the final exam week only.

The only exception to this policy is for graduating students. Graduating students (Fall and Spring semesters) are not required to take final exams during the regularly scheduled final exam periods. Instead, graduating students must have all requirements complete the week prior to final exams. Faculty may wish to assign a final paper, project, take-home exam, or specially scheduled exam for graduating students only during the last week of regularly scheduled classes.

## **Unit of Instruction (Semester Hour)**

The unit of instruction is the semester hour, which is the credit given for one hour a week for one semester. Most courses offered at St. Mary's meet three hours a week, and therefore have a value of three semester hours.

## **Student Load**

The normal course load for fulltime undergraduate students is from twelve to eighteen hours per Fall and Spring semesters, varying with the student's curriculum and scholarship record. To take more than 18 hours, the student must have written permission from the Dean of his or her School.

For part-time students who have full-time employment, the maximum load is two courses with total credit of six semester hours. To carry more, the part-time student must secure written permission from the Dean of his or her School.

The maximum course load for Summer sessions is two courses each session; therefore, the maximum for two (six weeks) Summer sessions is four courses and not more than fourteen semester hours. Courses taken in excess of these maxima must have written permission of the Dean.

## **Repeated Courses**

At times, students may want to repeat a course in order to earn a better grade, improving their GPA. It is possible to do this, but under very specific conditions:

- the original course must have been taken at St. Mary's University;
- the repeat course must be taken at St. Mary's University;
- the repeat course must be exactly the same course number and title as the original course. In the case of Topics Courses, the topic must be the same.

The administrative system will automatically flag repeat courses only if they are courses that can legitimately be repeated for credit. On the student's academic record, a course that is repeated will have an "E" (Excluded) next to the course. The repeated course that replaces it will have an "I" (Included) next to the course. From this semester forward, the Cumulative GPA reflects only the repeated course with the higher grade. In effect, the earlier course remains on the transcript but is no longer included in the cumulative GPA. The change does not affect the academic status (Probation or Suspension) of the original semester.

## **Transfer Credits**

Credit earned by correspondence or by enrollment at another college or university while a student is enrolled for residence work at this institution will not be counted toward a degree unless explicitly approved in advance. This policy applies to Fall, Spring, and Summer sessions.

Note regarding transfer course: Philosophy, Theology, and required Mathematics courses cannot be transferred after a student has matriculated at St. Mary's University.

## **Change of Courses**

During the first week of Fall and Spring semesters, changes to course schedules can be processed online via Gateway without incurring any charges. After the first week of classes, signatures of

approval from the Instructor, Academic Adviser, and Dean are required on an *Add/Drop* form, in order to add a course. There is a charge for each add or drop initiated by the student after the late registration period.

## **Change of Major**

A student wishing to change from one major to another must fill out a *Change of Major* form in the Registrar's Office. The change is not official until the form has been properly completed and filed with the Registrar's Office.

## **Dropping of Courses**

After the first week of class, to drop a course the student must have the Adviser's signature on an *Add/Drop* form. During the first half of a Fall or Spring semester, the student may withdraw from a course with the grade of W. Thereafter, through the twelfth week, if the student is passing at the time of withdrawal from a course, the grade will be W; if not passing, the grade will be WF.

Courses dropped without notifying the Registrar, and courses from which the student has been dropped by the Instructor for excessive absences, are recorded W or WF, as determined by the Instructor. During the last four weeks of a full semester, courses may not be dropped by a student. Notice to an Instructor of dropping a course does not cancel registration or financial obligations.

## **Withdrawal from All Courses**

It is the responsibility of all students withdrawing from all courses to inform the Office of the Registrar.

Withdrawal from all courses should be effected for a serious reason only. According to time limits stipulated in the Academic Calendar, the student may be entitled to some refund at the time of withdrawal. Withdrawal without proper notice to the Registrar, however, entails failure in all courses for the semester and liability for full payment.

As with the dropping of courses, notice to Instructors of withdrawal does not cancel registration nor financial obligations.

## **Military Personnel and Reservists**

If a student in inactive or reserve military services is required by the military to withdraw from the University due to a military crisis, he or she will be entitled to a full tuition refund. If such a withdrawal is necessary, no academic penalty will be incurred. Students who are using student loans, however, will have to abide by the appropriate regulations. With the approval of the class

Instructor, an extension of time may be allowed for completion of courses which are interrupted. Support documentation must be submitted.

## **Independent Studies**

Independent academic study projects are available to students who have reached at least Junior status, hold a 3.0 GPA, have obtained the approval of their major Adviser, the Chairperson of their department and the Dean of the school in which the course is taken, and have arranged the delineation of a syllabus with a Professor who knows them and is willing to work on the project.

## **Review or Deficiency Courses**

Review or deficiency courses, in general, are taken by conditionally admitted students to meet admission deficiencies or to better prepare themselves for elementary courses. The courses are measured on a semester-hour basis, but the semester hours from these courses do not apply to University or departmental degree requirements. The first digit of these courses is 0.

## **Student Education Records**

The Office of the Registrar maintains education records for all currently enrolled and former students. Student education records are governed by the provisions of the Family Educational Rights and Privacy Act (FERPA) of 1974, as amended. Information on the rights of student records can be found on the St. Mary's University Registrar's Office website.

## **Directory Information and Student Confidentiality**

St. Mary's University will not disclose any personally identifiable information about students (except directory information listed below) without the written consent of the student. Directory information is that which is regularly made public such as student directory, athletic printed programs, requests made by potential employers, etc. St. Mary's University designates the following student information as directory information:

1. Name, address, telephone number, e-mail address
2. Major field
3. Participation in officially recognized activities and sports
4. Weight and height of members of athletic teams
5. Dates of attendance
6. Degrees, honors, and awards received
7. The most recent educational agency or institution attended

Each student has the right to restrict the release of this information by submitting the appropriate form to the Registrar's Office. This request will remain in effect while the student is enrolled or unless student rescinds the request. School officials with legitimate educational interests may have access to educational records, without the students' consent if the record is needed in order

to fulfill his or her professional responsibilities. School officials are identified as a person employed by the University in an administrative, supervisory, academic or research, or support staff position; a person or company with whom the University has contracted; a person serving on the Board of Trustees; or a student serving on an official committee, or assisting another school official in performing his or her tasks.

## Academic Standing

Classification of students:

A *freshman* is a student who has been admitted upon the satisfactory fulfillment of entrance requirements. A student is also considered a freshman who has completed less than 30 hours.

A *sophomore* is one who has completed the prescribed program for the freshman year and has no fewer than thirty semester hours of credit.

A *junior* is one who has completed no fewer than sixty semester hours of credit.

A *senior* is one who has completed no fewer than ninety semester hours of credit.

A *post-baccalaureate* student is one who has already earned a degree, but is pursuing further undergraduate work for personal enrichment or for certification.

A *graduate* student is one who has been formally admitted into the Graduate School and is pursuing studies in the Graduate School.

A *visitor* (transient) is one who is still either in actual or technical residence at another school, but has received permission from a Dean to take courses at St. Mary's with the intention of transferring them to his or her own school. A visitor's status is limited to one semester.

A student may register to audit a class at St. Mary's University with permission of his Adviser and the course Instructor during the first week of school in the Fall or Spring semesters and during the first two days of instruction in the Summer sessions. An auditor is required to attend lectures and benefits from all regular services of the course Instructor, but does not receive a final grade or course credit. Upon completion of an audit course, the student receives a grade of AU (Audit). This does not affect grade point average. A student who officially drops an audit class receives a grade of "W." If the student stops attending class, the Instructor may drop the student with an NC (No Credit).

## Grades and Scholarship

Grades reflect student performance and achievement in academic courses. Faculty members are responsible for assessing student performance and assigning grades according to the following grade designations: "A," excellent/outstanding; "B," above average; "C," average or satisfactory; "D," minimally passing; "F," failure; "I," incomplete.

These letter grades correspond to the following quality points (grade points) and numerical ranges:

A (4.00 quality points) = 95 to 100

A - (3.67 quality points) = 90 to 94

B+ (3.33 quality points) = 87 to 89

B (3.00 quality points) = 84 to 86

B - (2.67 quality points) = 80 to 83

C+ (2.33 quality points) = 77 to 79

C (2.00 quality points) = 70 to 76

D (1.00 quality points) = 60 to 69

F (0.00 quality points) = below 60

### **Other grades:**

*I* (Incomplete) grade indicates satisfactory performance in the course but failure to do a portion of the work assigned. The deficiency must be remedied as prescribed by the Instructor within 30 days of the date of issuing reports. The Instructor then assigns a grade or it becomes a permanent F. An Incomplete grade received by a student in his or her graduating semester must be made up three weeks prior to the date of graduation; otherwise, graduation will be delayed until the next official graduation date. IP is given only for those courses which by their nature require more than a semester to complete (e.g., some senior projects and internships).

*P* and *NP* are marked for courses taken for "Pass/No Pass" credit. *P* indicates "pass" and is equivalent to course grade C or better. *NP* indicates "failure to pass," with the student not entitled to credit for the course or for the hours which had been assigned to it. "Pass/No Pass" (*P/NP*) and Audit arrangements must be made at the time of registration, and are non-changeable after the first week of class. The *P/NP* option is mandatory for internships and practice teaching, and for Applied Music and Ensembles (except for Music majors and minors). Other Business courses, Core Curriculum courses, and major and minor courses may NOT be taken *P/NP*. The *P/NP* option may be used for electives and is not to exceed 12 hours.

*W* grade signifies official withdrawal from class; *WF* withdrawal with failure; *WX*, withdrawal in the last month by special permission of the Dean of the School.

*F* grade indicates failure; when this grade has been received, credit can be obtained only by repeating the course at St. Mary's.

*NC* grade signifies No Credit; registration administratively canceled.

*IS* indicates that the course is In Session.

The grade the Instructor submits is based on class work, tests, and final examination, combined in such proportion as the Instructor in charge of the course in question may decide. Class



standing in the course, moreover, is determined by the regularity of the student's attendance at lectures (and laboratory or other similar exercises), by recitation grades, written assignments, laboratory work, etc.

Grades of F and WF are both equal to 0 quality points and do affect the Grade Point Average.

Grades of I, IP, IS, NC, P, NP, NR, W and WX have no quality points associated with them and, hence, are not included in the computation of the Grade Point Average.

## How to Compute Your Grade-Point-Average (GPA)

I. Assign a quality point to each grade:

Grade	Quality Points
A	= 4.00
A-	= 3.67
B+	= 3.33
B	= 3.00, etc.

II. Remaining quality points may be viewed above.

III. Multiply: Quality Points X Number of Semester Hours earned in the course. The second digit of each course number indicates the number of semester hours the course carries: e.g., in EN 1311, second digit is a 3, therefore course is a three-semester hour course.

IV. Add and Divide: The total number of quality points divided by the total number of semester hours earned.

<i>Course</i>	<i>Credit Hours</i>	<i>Grade</i>	<i>Quality Points</i>	<i>Calculation</i>	<i>Total Quality Points</i>
EN1311	3	B-	2.67	3 x 2.67	8.01
SMC1301	3	A	4.00	3 x 4.00	12.00
AR1301	3	B	3.00	3 x 3.00	9.00
SE1341	3	A-	3.67	3 x 3.67	11.01
BL1401	4	B+	3.33	4 x 3.33	13.32
	16				53.34

V. (Total # of Quality Points/Total # of Semester Hours) = GPA  
 $53.34/16 = 3.33$  GPA

## Grade Points Required for Graduation

A candidate for graduation must present, in addition to the required credit hours, at least a two-point average (2.0) over all courses offered to fulfill graduation requirements in his or her major and minor subjects, and in the total of the remaining courses. He or she must also present a "C" average on the courses taken at St. Mary's and applied to graduation in the major subject, and the total of the remaining courses taken at St. Mary's.

## Grade Reports

Mid-semester grades and final semester grades are available on [Gateway](#) or in the office of the Registrar upon request.

## Quality of Work

The University Faculty wishes to impress on all students the importance of aiming for high quality of work rather than merely minimum requirements. To encourage efforts toward this ideal, there is in operation a system of points and honors as outlined below.

## Scholastic Probation and Suspension

### Academic Probation:

Students taking 6 or more semester hours in a Fall, Spring or Summer semester whose grade point average (GPA) Falls below 1.70 will be placed on **academic probation** during their next semester at St. Mary's.

Students taking 6 or more semester hours who earn 2.00 during a probationary semester will be **taken off probation**. Students who earn 1.70 to 1.99 will continue on probation. Students who earn less than 1.70 are placed **on suspension** at the close of that semester.

### Academic Suspension:

The **first suspension** is for a period of at least one semester, be it Fall, Spring, or Summer. Extenuating circumstances may be presented to the Dean for review.

A **second suspension** lasts for a period of at least 12 months.

After the **third suspension**, a student is no longer eligible to enroll at St. Mary's University. Students placed on suspension for a second or subsequent time may petition for reinstatement to the Dean of their School. They must fill out an application for readmission and request a review of their case.

Any Priority Registered courses will be canceled due to suspension.

Students who take fewer than six semester hours per semester will be subject to a regular audit which will apply Scholastic Probation rules when six or more hour accumulate.

Removal of probation after a suspension is governed by the readmission conditions.

The GPA for a semester includes all courses taken for credit. Therefore, in addition to courses passed with a grade of A, A-, B+, B, B-, C+, C, or D, the GPA includes those with F, WF, and TF. Not included are zero courses, "Pass-No Pass" courses, those taken as an Auditor, and courses with grades of W, WX, NC, NR, I, IP, IS, or CR.

The above policy does not govern eligibility for financial assistance. Contact the office of Financial Assistance for specifics.

## **Minimum Academic Standards for Students Receiving VA Educational**

### **Benefits (Four-Year Programs)**

**Note:** The criteria listed below do not necessarily agree with the academic averages required by St. Mary's University. All students must meet the requirements of the University. The paragraphs below are the V.A. guidelines to determine satisfactory progress.

### **Satisfactory Progress**

Students who are receiving VA educational benefits must make satisfactory progress toward the completion of their approved degree plan; otherwise, they risk the possibility of the suspension of their benefits. VA students must maintain satisfactory academic progress according to the policies that apply to all St. Mary's University students.

### **Probation**

A student who is receiving VA educational benefits and who fails to achieve the required GPAs based on the hours attempted shall be placed on probation. The policies for probation that apply to all St. Mary's University students will apply to VA students.

### **Unsatisfactory Progress**

A student who fails to maintain the prescribed standards of progress shall be reported to the VA Regional Office as making unsatisfactory progress and thereby risk benefit payments' being discontinued. The policies for unsatisfactory progress that apply to all St. Mary's University students will apply to VA students.

### **Satisfactory Conduct & Attendance**

In order to receive VA educational benefits, VA students must maintain satisfactory conduct and must maintain satisfactory attendance. Satisfactory conduct and satisfactory attendance are the regularly prescribed standards and practices that apply to all St. Mary's University students.

## **Athletic Eligibility**

The student athlete must maintain the same academic standing as other students at St. Mary's University. If a student athlete earns a grade-point average below a 1.70, he or she will be on probation during the next semester at St. Mary's University. If the student earns a 2.00 grade point average in the following semester, he or she will be taken off probation. If the student earns between a 1.70 and 1.99, he or she will remain on academic probation, but will retain athletic eligibility. If the student does not earn a 1.70, he or she will be placed on suspension, making the student ineligible to compete as a student athlete. Furthermore, the student athlete must meet the "satisfactory completion" provision of the NCAA requirement by maintaining a grade point average that places that individual in good academic standing, as established by the institution for all students who are at an equivalent stage of progress toward a degree. To fulfill the "satisfactory progress" provision of this requirement, a student athlete [who enters a Division II institution after the 1998-1999 academic year] must achieve the following cumulative minimum grade point average at the beginning of the Fall term or at the beginning of any other regular term of the academic year, based on:

- A. the completion of 24 semester hours: 1.800
- B. the completion of 48 semester hours: 1.900
- C. the completion of 72 semester hours: 2.000
- D. the completion of 96 semester hours: 2.000

## **Readmission**

All former students who have been away from St. Mary's for one Fall or Spring semester, or more, must file a formal application for readmission. If a student, during his or her absence from St. Mary's has attended any other institution, he or she must submit an official transcript reflecting such attendance; regulations governing transfer students shall apply. A student who leaves St. Mary's on scholastic probation or suspension will be readmitted on scholastic probation even if he or she has attended another institution during the period of absence. A student on probation at another school will be placed on probation at St. Mary's.

## **Dean's List**

To earn the honor of being on the traditional Dean's List at St. Mary's, different criteria apply to different schools of the University.

In the **undergraduate schools**, the Dean's List for the Fall and Spring semesters contains three categories: Highest Honors (3.90 to 4.00 GPA), High Honors (3.80 to 3.89 GPA), Honors (3.60 to 3.79 GPA). Only full-time students are eligible for the Dean's List.

**Graduate School** students who rank in the top ten percent, have accumulated eight hours of graduate study with a minimum semester cumulative GPA of 3.75, and were enrolled in at least six hours are selected for the Dean's List.

In the **School of Law**, a full-time student whose semester academic average is in the top ten percent of the entire student body of the School of Law, is eligible for the Dean's Honor List.

## Graduation Honors

To be eligible for graduation honors, a student seeking a baccalaureate degree must enroll in and complete a minimum of 45 undergraduate semester hours at St. Mary's University, not counting Pass/No Pass or credit by exam courses, preceding graduation. The grade point average (GPA) of all college hours attempted, excluding transfer hours, must equal that required here for the appropriate category of honors.

Honors are not conferred on combination degrees or on second degrees.

**Summa Cum Laude** 3.90–4.00

**Magna Cum Laude** 3.80–3.89

**Cum Laude** 3.60–3.79

To be named a **Distinguished Graduate**, Graduate Students must meet all of the following requirements:

1. Students who have not received a grade of U or a grade below B, even if they have repeated the course with a grade of S, B, or A;
2. Students who graduate with a cumulative GPA of 3.90 or higher. If no graduating students in a program achieve a cumulative GPA of 3.90 or higher, then the graduate with the highest GPA in that program may be designated the Distinguished Graduate.
3. Students who receive a favorable recommendation from their Graduate Program Director.

## Undergraduate Graduation Check List

1. When registering with your Adviser, take this opportunity to check the progress toward your degree and proposed graduation date. Check Gateway (student web access) to be sure the graduation date and other information listed is correct. It is your responsibility to know the required courses for your degree, number of hours you have completed, and your proposed graduation date, and to ascertain that you are registering for the proper courses. If you are not sure, ask your Adviser. If you still have questions, ask the Chairperson in your major department. You may also verify degree requirements in the Registrar's Office. Degree Plan outlines are obtainable from your Adviser or the Registrar's Office. Make sure you follow the proper degree outline. For school and degree requirements, be sure to check the catalog of the year you entered St. Mary's University.
2. If you change your major, fill out the proper Change of Major Form in the Registrar's Office. A new Adviser will be assigned to you. Familiarize yourself with your new

degree plan. Be sure to follow the catalog degree requirements for the year you change major.

3. Graduation Semester: When you register for your final semester, fill out an Application for Degree card. These are available through your Adviser or in the Registrar's Office. The Application for Degree card will be used to conduct a final degree audit to ascertain that all degree requirements have been fulfilled. Please make sure you have fulfilled the following:

Complete the total hours required for the degree, including CORE, major, and minor (if applicable). Most Bachelor of Arts degrees require 120 hours, whereas Bachelor of Science degrees require more.

Meet the residence requirement of 45 hours.

Achieve at least a 2.00 GPA in major, minor, and other St. Mary's University courses. Achieve the specific GPA of your Department, if different; for example, Psychology, Engineering, and Education require a higher GPA.

Complete at least twelve advanced hours, in your major, with 2.00 GPA at St. Mary's University.

Complete at least six advanced hours of Writing Intensive courses in your major.

Complete ND 0101.

## **Commencement Participation Policy**

St. Mary's University offers a Fall and a Spring commencement. Students completing degree requirements and meeting all graduation checklist obligations in the Summer One, Summer Two, or Fall semesters are invited to participate in the Fall Commencement. Students completing degree requirements in the Spring semester are invited to participate in the Spring commencement.

If a student is unable to attend the appropriate commencement due to a medical reason or to participation in a St. Mary's University-sponsored activity, a request to participate in the immediate subsequent ceremony may be granted. The following items must be adhered to:

- a. Students wishing to attend a subsequent commencement ceremony due to a health-related reason or to participation in a St. Mary's University-sponsored activity must provide proper documentation to the Office of the Vice President for Academic Affairs.
- b. If approved, students are eligible to participate only in the immediately subsequent commencement ceremony.
- c. The desire to participate in the immediate subsequent commencement must be communicated to the Office of the Registrar at least 30 days in advance of the ceremony.

- d. Students will be listed in the Graduation Program appropriate to the semester in which degree requirements are completed.
- e. Names of those attending subsequent ceremonies will be read on stage, but will not appear on the printed Graduation Program for that graduation.

## **Junior College Transfers**

The maximum credit transferrable from a junior college, or any combination of junior colleges, is 66 semester hours. A student who has attained junior standing—that is one who has completed 60 or more semester hours—may return to a junior college for an additional six (or eight) semester hours, with the appropriate Dean's prior approval (provided the total hours transferred from junior colleges do not exceed 66).

## **Information Change**

All information changes must be made in writing to the Registrar's Office either in person, by mail, by e-mail, or by fax along with the student's signature requesting this change. Information changes cannot be accepted by telephone.

## **Address Change**

Students are required to report both their local and permanent addresses and phone numbers to the Registrar's Office at the time of registration and to report any changes afterwards. The University maintains several addresses for each student:

### **Permanent Address:**

The address at which you reside when the University is not in session.

### **Local Address:**

The address at which you reside when the University is in session.

### **Billing Address:**

The address to which bills should be sent. Unless otherwise specified, this will be either the local address, if bills are mailed while classes are in session, or the permanent address, if the bills are being mailed during a period most students are not attending classes. Billing address changes must be requested in the Business Office in StLH Room 24.

## **Name Change**

To change a legal name to a new legal name, the student must fill out an Information Change form in the Registrar's Office and submit it with a copy of the signed court order showing the

authorized new legal name. To change a last name after marriage, the student fills out an Information Change form and presents a copy of the marriage certificate. A female student who wishes to discontinue the use of her married name in order to resume the use of her maiden name or a different name must present a divorce decree or signed court order showing court restoration of the maiden or acceptance of another name. The previous name appears on the transcript header.

## **Social Security Change**

To register a Social Security number, mail or bring a copy of your Social Security card to the Registrar's Office so that we may update your records.

## **Change of Major/Minor**

1. Obtain the proper Change of Major/Minor Form in the Registrar's Office, StLH Room 105.
2. Complete the form in full and obtain the requested signatures.
3. Return the completed form to the Associate Registrar in StLH Room 105. A Degree Audit will be prepared. Please note that the change is not official until the form is submitted.

## **Transcripts**

Students enrolled at another college must forward an official transcript; Service personnel with Military and DANTES credit must forward evidence of their record to the Director of Admissions.

Students already enrolled at St. Mary's must furnish an official transcript of record for courses taken by extension and/or correspondence from a college or university offering non-resident courses. Enrolled students, moreover, must furnish a transcript for courses authorized to be taken at another college. No credit will be granted by St. Mary's unless the enrolled student has had permission *in advance* to pursue such extension, correspondence, or "visitor" courses.

Individuals may obtain an official transcript of their work completed at St. Mary's University provided they have satisfactorily met all university obligations. Transcripts are normally issued within one working day except during busy periods—registration and graduation.

Requests must be in writing. Written requests are accepted on forms available in the Registrar's Office or by letter. Telephone requests are not accepted. The request should include name, social security number, approximate dates of attendance, graduation date, etc. Accompanying each request must be a three-dollar (\$3.00) fee per transcript. St. Mary's University does not provide copies of transcripts of work done at other institutions.

## **Freshman Requirement**



All incoming freshmen, including transfer students with fewer than twenty semester hours of actual (i.e., not high school Advanced Placement courses) university credits, must take ND 0101 in their first Fall or Spring semester at St. Mary's University.

## **Time Limitation**

The provisions of the catalog for the year during which a student first enrolls at the University will apply until his/her graduation, provided graduation occurs not more than seven years after enrollment. The degree program of the student who changes his/her major shall be governed by the degree requirements in effect at the time the change of major becomes effective.

## **Semester Hour**

The word "hour" in this publication designates a "semester hour" of credit, which is earned by attending class one hour a week for 15 weeks. A candidate for a degree must have no fewer than 120+ semester hours of credit, chosen in accordance with the requirements of the University.

## **Major**

A major covers four years of work in one subject, and is sometimes referred to as the major concentration in the student's degree program. This concentration, unless otherwise specified, includes the courses which are prescribed for the particular subject of the major, plus six additional courses of three or four semester hours each in the same subject, for a total of 24 or more hours. Of this total, twelve semester hours must be in advanced courses — in courses numbered 3000 and up. Six hours of writing-intensive course work at the advanced level is required for all majors. Three hours should be taken in the junior year, and three hours in the senior year.

## **Minor**

A minor or minor concentration usually covers three years of work, usually 18 semester hours, in a subject related to the major. It includes the courses prescribed in the general education part of the degree, plus further courses. At least 6 hours must be advanced-level work and in residence.

## **Teaching Field**

A teaching field consists of at least 24 semester hours (12 must be advanced) in a state-approved program of studies in a designated subject for students who are seeking secondary teacher certification.

## **Electives**

Courses not taken as prescribed courses and not included in the student's major and minor sequences may be chosen, within restrictions given below, as free electives to complete hours required for graduation.

## **Advanced Work**

Of the total degree required hours (i.e. 120 hours for most degrees), at least thirty must be in advanced work, that is, selected from courses numbered 3000 and up. Of these advanced hours, at least twelve must be in the major and six in the minor.

## **Residence**

One is recommended for a degree only on the following conditions: at least forty-five (45) semester hours of resident study at St. Mary's, twelve of which must be advanced in the major subject, and satisfactory fulfillment of all specific requirements for a degree. Of the last thirty hours offered for the degree, 24 should be taken at St. Mary's University.

## **Application for a Degree**

Formal application for the degree must be filed when registering for the final semester.

## **Second Bachelor Degree**

To obtain a second bachelor degree the candidate shall:

1. have completed all the requirements for the first degree;
2. apply for a different degree;
3. complete a different major from that used for the first degree;
4. complete thirty hours not used for the first degree, at least twelve of which are advanced. (A proportionately larger total will be required when the second degree is one that normally takes more than 120 hours.)
5. fulfill 45 hour residency requirement at St. Mary's University.

## **Course Numbering**

Courses are identified by department and number. Four-digit numbers are used, but only the first two digits are significant to the student:

- The first digit of a course number designates the scholastic level. All courses with a first digit of zero are either review or deficiency courses and carry no semester hour value. All courses with a first digit of 1 are at the freshmen level, those with a first digit of 2 are at the sophomore level, and all courses with a first digit of 3, 4, or 5 are advanced-level (junior or senior) courses.
- The second digit designates the semester hour credit of the course.

- The third and fourth digits designate the departmental sequence of each course.

*Thus, EN 1311 is a freshman-level course of three semester-hour value.*

## Texas Common Course Numbering

St. Mary's University participates in a statewide common course numbering system designed to facilitate the transfer of coursework among Texas institutions of higher education, both public and private. The course prefix and number appearing in parentheses, ( ), after the course title designate the common course number. Identical numbers are referenced in the catalogs of other participating Texas institutions, and may be used to establish transfer equivalents for St. Mary's University courses.

## Graduate Courses

In exceptional cases, an undergraduate student may be permitted to enroll in a graduate course for undergraduate credit and for undergraduate tuition rates. Required for this exception is the prior written permission of the Graduate Dean, the appropriate undergraduate Dean, the graduate department chair person, and the instructor. The student must also secure from the Registrar an undergraduate course number. Graduate courses taken for undergraduate credit may be used only for undergraduate degrees. Such courses may not subsequently be used for graduate credit.

## Degree Requirements: General

### Degree Plans

Direction and assistance in arranging degree plans and schedules are available in the office of the Registrar, in the counseling and departmental offices -- especially at times of registration -- and most specifically in the undergraduate course listings. Students are responsible for availing themselves of these aids to know requirements and thus avoid errors and omissions in their degree programs.

## Academic Areas of Special Consideration

### Critical Studies Program

The Critical Studies Program provides entering (non-conditional) freshmen whose performance on the California Critical Thinking Skills Test (given at orientation) is below average the opportunity to enhance their reasoning, reading, and writing skills. IS1300W is a required course for these freshmen. (See below) **Students may not drop the course without the authorization of the CSP Director.** The goals of this program are to help students improve their reasoning, reading, and writing skills, to critically evaluate their education objectives in pursuing a college degree, and to investigate their roles and responsibilities in the learning process.

### IS1300W Interdisciplinary Studies

Interdisciplinary Studies is a 3-credit hour interdisciplinary\* course that provides entering

freshmen with the opportunity to enhance and further develop essential critical intellectual skills in three areas: reading, writing, and reasoning. The instructors for this course are faculty members who teach in majors in each of the three undergraduate fields of study (see below). They draw upon the work students do in other university classes and upon readings and assignments selected to complement this academic work to improve students' abilities to read and understand college-level texts, to communicate effectively, and to apply methods of reasoning to enhance understanding. The course fulfills three semester hours of elective credit. Strict adherence to the university's attendance policy, including weekly participation in small-group study sessions led by peer tutors, is necessary to complete this course. The course is offered only in the fall semester and may not be repeated without special permission of the Critical Studies Program Director.

*\*Interdisciplinary means that the learning materials include all general fields of study at a university, i.e. sciences, humanities, social sciences.*

## **Academic Enrichment Program (AEP)**

Under the authority and supervision of the Learning Assistance Center, the Academic Enrichment Program (AEP) is designed to meet the needs of conditionally admitted students who have some areas of academic need. For conditionally admitted students, attendance in this program is required as part of their admission acceptance.

Requirements: AEP Program students are required to take the Interdisciplinary Studies (IS 1300) and Math Skills (MT 0401) courses, along with ND 0101 and two credit courses. If advised by the AEP director, students may take up to a maximum of three-credit courses in addition to IS 1300, MT 0401 and ND 0101. Students performing below this standard by the end of the program are subject to suspension from the spring semester by the AEP Evaluation Committee.

Two additional courses from the fall schedule are chosen to bring the total number of course hours to thirteen including the ND0101 course.

## **International Education Programs**

In consideration of the importance that international education plays to day in the personal and professional development of students, and in partial fulfillment of its Mission to endow all students with a global education, St. Mary's University encourages students to participate in any of the international programs abroad available to them. Juniors, sophomores and selected second semester freshmen are encouraged to participate in the fall semester in London, England, the spring semester in Madrid, Spain. There is also a summer semester in Innsbruck, Austria. The fall semester in London and the spring semester in Madrid are sponsored by the Academic Vice President's Office and course offerings are determined by the disciplines of the faculty members selected as Field Director and Associate Field Director. Faculty members can be from any discipline in the University. The summer semester in Montpellier is a French language program and is also sponsored by the Academic Vice President's Office. The Innsbruck program is sponsored by the Bill Greehey School of Business and its offerings are normally related to the business curriculum, although students from across the university that can benefit from

participation may attend.

A St. Mary's student who earns academic credit from a university outside the United States will have that credit transferred back to St. Mary's University provided a satisfactory grade was earned. The credit earned will be posted to the student's St. Mary's University transcript as 'credit earned' and will be applied to satisfactory degree progress. The grade earned by the student while attending the university outside of the United States will only appear on the student's transcript of that university.

## Writing Across the Curriculum

St. Mary's emphasis on academic excellence in all scholarly areas commits the university to an integrated approach to teaching those skills essential to the acquisition of knowledge. Writing is a necessary part of this learning process and a valuable communication skill. In addition to core curriculum requirements, all departments at the university require participation in writing-intensive courses in both the junior and senior years. A writing-intensive course meets the following criteria:

1. At least 50% of the course grade is based on written assignments;
2. Course requirements include one or more formal written assignments totaling at least 2500 words in which the professional quality of the work is an explicit factor in the final evaluation;
3. Opportunities to revise or rewrite -- activities crucial to the improvement of writing skills -- are provided.

Courses and/or sections designated with a "Writing Intensive" attribute in the course schedule meet the writing intensive criteria.

## Foreign Languages Across the Curriculum

Recognizing the need for graduates to show proof of their abilities in foreign languages without being either a Language or MOS major, St. Mary's has instituted a "**Foreign Languages Across the Curriculum**" program. To be certified students who wish to participate in the program must have completed sophomore level proficiency in the language targeted. By taking special additions to courses offered in their majors, or other interests, students may earn credits towards "**Advanced Foreign Language Competency in (Language)**" designation on their transcripts upon completing six units under this program. Students may take courses offered entirely in the target language for three (3) or two (2) units. They may also take LN courses of one (1) unit of credit which are attached as "trailers" to courses conducted in English in virtually all the disciplines. Introduction to Computer Science, e. g., might have a "trailer" attached to it entitled "LN 1133 Computer Science Terminology in Spanish" giving one unit of Advanced Foreign Language Competency (as well as one semester hour of credit) for certification. The Language Department administers the program and keeps a file on each participant. After a student has completed six FLAC units, the Chair sends a form to the Dean of Humanities & Social Sciences, who certifies the individual and in forms the Registrar of this fact.

## **Pre-Professional Curricula**

In addition to the various degree programs offered by the Schools of the University, St. Mary's also offers curricula that are pre-professional in scope and that are tailored for acceptance by professional schools.

### **Pre-Engineering**

In addition to the five four-year Engineering programs offered at St. Mary's, the University offers a two- year pre-engineering program which incorporates the core curriculum of the Texas State Coordinating Board. Successful completion of this program makes students eligible for acceptance by schools of engineering to which they may apply. Requirements for the freshman and sophomore years are outlined in the Engineering Department of the School of Science, Engineering and Technology.

### **Pre-Law**

A completed bachelor's degree is required for entrance into the St. Mary's University School of Law as candidate for the Juris Doctor degree. The pre-law student may choose his/her degree, whether from the School of Humanities and Social Sciences, the School of Science, Engineering and Technology or from the Bill Greehey School of Business and may make his/her own choice of major and minors.

### **Health Sciences**

The University, through its Departments of Biological Sciences and Chemistry, offers a variety of pre-professional programs in the health sciences: pre- medicine, pre-dentistry, pre-optometry, pre-pharmacy, pre-physical therapy, pre-podiatry, pre-veterinary medicine, and medical terminology. Details of these programs may be obtained Department of Biological Sciences in the catalog.

For some degree programs, it is possible for the student to complete three years at St. Mary's and then receive a degree upon the completion of a fourth year in an accredited health science program, such as medical technology. See Combination Degree and Dual Degree and Dental Early Admission Program under Biological Sciences.

# **Student Services**

## **Information Technology Services**

Information Technology Services (ITS) provides the University community with high quality technology infrastructure and services in support of its mission to prepare and educate leaders of tomorrow's world. Students coming to St. Mary's University are asked to bring a lap top to campus. All student dorms provide Internet access to residents. Over 80% (58/68) of classrooms are equipped with projection and Internet access, and approximately 1/3 of the classrooms are wired for student connectivity. We support a Web-based course management system allowing students access to course materials, communicating with instructors and fellow students, and submission of coursework and assignments. Wireless access is available in all open areas such as the library, the university center, and Java City. The academic library houses a student computer lab containing 36 Dell desktop computers and two HP LaserJet printers. Various departments and programs support their own specialized computer labs with software tools for students to use.

ITS provides computing support to students, staff, and faculty with its Help Desk staffed with capable and friendly professionals. Additionally, at Academic Media Center, located on the first floor of the library, students can receive training on various applications, check out audio-video equipment for their classes and on-campus activities, or use multimedia stations to develop contents and presentations.

## **Academic Advising**

### Statement of Philosophy

Consistent with the "Statement of Mission for St. Mary's University", the primary purpose of the academic advising program is to assist students in the development of meaningful educational plans which help shape their values and life goals. Academic advisers assist students by promoting a freshman through senior year academic advising plan, which encourages student participation in career exploration. Academic advising is a continuous process of clarification and evaluation. Academic advisers assist in this process by helping students to identify and assess alternatives and the consequences of their decisions. However, students are ultimately responsible for making decisions about their life goals and educational plans.

Students are advised by a faculty member of their declared academic major. If students have not declared a major, they are advised by a faculty member of the School in which they have an interest in exploring educational opportunities. Undeclared major students are assigned a new academic adviser when they declare a major.

The academic advising program emphasizes the student-adviser relationship. All students are required

to meet with their academic adviser every semester during their Priority Advising days and are encouraged to seek their adviser's assistance throughout the academic year.

## **Library and Instructional Services**

Library and Instructional Services, including the Louis J Blume Library, Academic Imaging and Media Center, and Learning Assistance Center were created to combine all those academic support services which facilitate and enhance individual and group instruction. The individual components of Library and Instructional Services have unique purposes and functions which are listed below:

### **Academic Library**

The Louis J. Blume Library, one of the most attractive and functional academic library buildings in the southwest, offers a wide variety of facilities in print and non-print media. The three-story Texas colonial style building, designed to be used for both individual and group study and research, contains 100,000 square feet of floor space with a seating capacity for 1,200 students. Facilities include 100 individual and group study carrels, designed for laptop computer use, and the university's primary student-use computer lab. The library provides access to online full-text and abstracting databases of journals and books, as well as more than 500,000 print and microform volumes. The Louis J. Blume Library has been a selective depository of U.S. and Texas documents since 1964. Access to information about and the full-text of much of the information is available 24 hours each day via the library's online systems and through the university's computer networks. Librarians in the Louis J. Blume Library provide instruction and workshops in library use, much of it tailored to individual classes, and a full range of reference services.

### **Academic Media Center**

The Academic Media Center (AMC) located on the ground floor of the Louis J. Blume Library serves students and faculty in the development of mediated instruction and learning. AMC is part of ITS division reporting under Academic Technology Services. AMC provides tutorials and workshops in web development, mediated presentations, video and photographic media for academic work. The AMC media professionals assist students with the development of instructional materials, in cooperation with the faculty, for classroom use. The Center is responsible for maintaining audio visual equipment such as laptops, flip cameras, projectors, and screens for student use. The AMC also delivers audio visual equipment to traditional classrooms, for training in its use, and for maintenance. The AMC provides several computer labs with a wide array of media software for student use and a 52-seat MediaView Room.

### **Learning Assistance Center**

Located in the Louis J. Blume Library, the Learning Assistance Center serves St. Mary's University by providing instructional resources for students, staff, and faculty in a learner-oriented environment. The



LAC offers tutorial support and group work in the following academic areas: accounting, biology, chemistry, computer science, economics, English, engineering, foreign languages, mathematics, physics and statistics. website

The Center also supports students needing individualized instruction in English as a Second Language. The Writing Center, housed in the LAC, gives students the opportunity to work with peer-tutors on any writing task from prewriting to finished paper. For students who wish to work independently, the LAC provides programmed instruction, audio/visual materials, computer software and an extensive learning library with textual resources in all subjects.

## **United Colleges of San Antonio**

In 1970, the governing boards of the University of the Incarnate Word, Our Lady of the Lake University, St. Mary's University of San Antonio, and Oblate School of Theology adopted an agreement to develop and maintain a cooperative enterprise for undergraduate and graduate learning in San Antonio. The institutions cooperate with each other through a central coordinating body.

## **Professional Development Programs/Continuing Studies**

Professional Development Programs are designed for the individual in today's society which requires lifelong education. St. Mary's University provides public service programs that are designed to fulfill these lifelong learning opportunities. These noncredit programs are geared to support a specific target population and are developed for the individual who seeks to improve his/her current competencies. They are also developed for those entering a new field, for career enhancement and for retraining. Some examples of some of the certificate programs currently being offered are: Interior Design, Fashion Design, Microsoft Certification Programs, Intensive English Programs, and others. Programs are offered as a certificate program or for required CEU (Continuing Education Unit) in a specific field. Courses for which the CEU is awarded meet the national CEU criteria. All programs are under the sponsorship of an academic unit of the University and require registration and evaluation of participants. They are taught by qualified instructors who are working professionals and who are directly involved in planning each program. Programs are regularly updated to meet the changing needs in each field. Program information and registration requirements may be obtained at the Office of Professional Development Programs/Continuing Studies by calling 210-436-3321.

## **Upward Bound**

Upward Bound is a college preparatory program for high school students who possess strong academic potential. Upward Bound provides (1) academic skill development, (2) counseling and guidance with respect to educational and career opportunities, (3) tutorial services and (4) a comprehensive enrichment program including fieldtrips which stimulate the intellectual, social and cultural development of students. Enrollment is limited to eighty-five students. Participants must attend one of

the five target high schools and meet the eligibility criteria determined by the U.S. Department of Education.

## **CANDAX-ME McNair Scholars Program**

The McNair Scholars is a program for undergraduates in order to encourage and assist low-income, first generation students and students from underrepresented groups to continue their studies in graduate school, particularly in academic doctoral programs leading to a Ph.D. During the academic year, McNair scholars will learn about the various aspects of graduate school. A smaller group of McNair scholars will be selected to attend a 8-week summer research internship at the University of Notre Dame, where students perform Faculty Directed Research. Participants must meet the eligibility criteria determined by the U.S. Department of Education.

## **Veterans Affairs**

The VA Certifying Official serves as the liaison between the Department of Veterans Affairs and students of St. Mary's participating in a VA educational training program. The VA Certifying Official at St. Mary's is the training institution's representative responsible for completing all paperwork necessary to certify the enrollment and changes in enrollment for students eligible for VA benefits. All students applying for VA education benefits must complete the request for VA enrollment certification form every semester. VA students are responsible for notifying the VA Certifying Official of changes in their enrollment status. The VA Certifying Official is located in the Office of Financial Assistance.

## **Serviceman's Opportunity College (SOC)**

St. Mary's University is one of the four-year institutions of higher learning in Texas to be designated as a Serviceman's Opportunity College (SOC). SOC provides service personnel an opportunity to pursue educational programs through a variety of traditional and nontraditional means – on-campus and on-base -- in a variety of instructional modes and at times appropriate to their duty assignments. The service is particularly appropriate for the military-service personnel who wish to combine military service with a college education. St. Mary's will provide initiating services such as pre-college counseling, deferred admission, program planning, records of student's work taken during service time and continuing advisement. For further information on this program, contact the Office of Undergraduate Admission.

## **New Student Orientation**

All new students are expected to participate in the New Student Orientation Program. This program assists freshmen in making the transition from high school to university life, and facilitates the transfer of other new students from their previous college to St. Mary's University. Orientation helps students to understand the academic requirements, assists in career exploration, and helps them become

acquainted with their fellow students, faculty and staff members. Students are introduced to available services, the advising and registration process, as well as the holistic educational philosophy of St. Mary's University. Parents are encouraged to participate in the Parent Orientation portion of the program. In June, residence accommodations are available for students and parents during the Orientation weekends.

## **Academic Convocation**

All new freshman students are required to participate in this academic ceremony. Academic Convocation will welcome and empower new students to experience fully the academic opportunities that a university education includes at St. Mary's University.

## **International Student Services**

International Student Services serves as a point of contact for international students at St. Mary's University from pre-arrival through post completion of their studies. Immigration services include issuing Form I-20AB needed to obtain an F-1 student visa, recommending and authorizing practical training, and maintaining student information in SEVIS (Student & Exchange Visitor Information System), the government database. Other services include international orientation, serving as a liaison between international students and other campus offices, help obtaining a Social Security Number and Texas Identification card, and offering workshops and cultural events specifically for International Students.

## **Residence Life**

The Office of Residence Life at St. Mary's University is a component of the Student Development Division and is shaped by Marianist traditions. Residence Life provides residence halls that are communities which develop students' life skills and personal responsibility and serve as transitional environments to future roles and service to society.

## **Student Health Center**

The Student Health Center is an outpatient primary health care clinic located on the first floor of Charles Francis Hall. The clinic is staffed by a board-certified Family Practice physician and a certified physician assistant. All currently enrolled students of St. Mary's University are eligible to receive care at the Student Health Center. Spouses and children of enrolled students must seek care outside of the Student Health Center. Graduating students from St. Mary's University should begin the process of seeking a primary care physician in the community at least 30 days prior to graduation so that there is no interruption in patient care.

## **Student Judicial Affairs**

St. Mary's University's approach to student conduct and behavior is educational rather than punitive. All students matriculating at St. Mary's University are expected to conduct themselves as responsible adults

and are held accountable for their behavior.

Judicial authority is vested in the Office of the Vice President for Student Development. The Vice President for Student Development is the principle officer designated by the University for all non-academic discipline and the Vice President for Academic Affairs is the principle office designated by the University for all academic discipline. The Vice President for Student Development has designated the Dean of Students and Judicial Affairs to administer the University's non-academic policies as listed in all University publications including the Student Handbook, here the Code of Student Conduct is out lined.

The Student Conduct Committee assists the Dean of Students and Judicial Affairs in establishing policies for standards of conduct and serves as a formal hearing board for discipline cases.

## **Student Psychological and Testing Center**

### *Counseling*

The Student Psychological and Testing Center offers personal, academic skill building and career counseling for St. Mary's students. The Center is staffed by psychologists and a marriage and family therapist. Psychiatric consultation for medication is available on-site. Students are encouraged to talk with the staff about any concerns that interfere with their progress at the University or their personal effectiveness. The focus in sessions is on assisting students with developmental issues, reduction of symptoms, making positive decisions and implementing changes.

The center offers individual, couples', group, and psychiatric services. Issues handled by the Center range from situational problems such as adjustment to college to ongoing problems such as anxiety, depression, eating disorders, relationship issues, family of origin issues or abuse issues. Crisis intervention is available on a 24- hour basis when the university is in session and can be reached by contacting Campus Police at X3330 after hours. Psycho educational, career, and personality assessment is also available at the Center to aid students in understanding themselves and being successful in their academic career. Groups, workshops and outreach programs are offered to help students build needed skills to succeed.

The Student Psychological and Testing Center is open from 8:00am to 5:00pm on week days and is located in the Center for Life Directions building. All services are confidential to the extent allowed by law, and no record of services is entered on a student's transcript. The services of the Student Psychological and Testing Center are free of charge to students (with the exception of most testing programs). Students may make an appointment by calling (210) 436- 3135. Faculty and staff who desire counseling services should schedule an appointment through the Employee Assistance Program.

### *Services for Students with Disabilities*

St. Mary's University ensures accessibility to its programs, classes, services and activities to all qualified individuals with documented disabilities. This is accomplished through a variety of accommodations and services tailored to meet each individual's strengths and needs. If you are a student with a disability who

wishes to be considered for disability related accommodations and services, please contact the Coordinator of Disability Support Services at 210-436-3135.

### *Testing Services*

Testing Services offers a wide variety of testing opportunities, including admissions testing for the Admission and Evening Studies offices, THEA testing for the Teacher Education Dept., Information Technology Proficiency testing, and placement testing during the various Orientations held throughout the year. It also serves as a national test center for a variety of programs, including CLEP, DANTES, SAT, ACT, Praxis, PCAT, LSAT, and MPRE, as well as many professional licensure and certification tests, including TCLEOS testing for law enforcement personnel. For more information about testing offered through Resting Services, call (210) 436-3135.

The Testing Services also offers computer-based testing (as part of the ProMetric testing net work). This option gives students greater flexibility in test scheduling, as well as immediate score reporting in many instances. Tests now available through the Prometric Center include the GRE, and TOEFL, as well as many professional licensure and certification exams, including CPA, medical boards, and Texas Department of Insurance. The fees for testing are set by the sponsoring agency or organization and vary by test. The Prometric CBT Center is open six days per week, with a variety of testing times available. Additional information can be obtained by calling (210) 431-5080.

## **Campus Recreation Programs**

Campus Recreation provides students the opportunity to pursue a healthy lifestyle and explore recreational interests through a variety of programs, facilities, and services. The Intramural Sports Program offers students a variety of events annually with leagues, tournaments, and one-day events in men's, women's, and co-recreational divisions. Group fitness and water aerobic classes are offered daily. Informational programs and student trainers are available to assist students with fitness equipment. Indoor rock climbing is an exciting and fun alternative to traditional exercise, the indoor climbing wall is a simulated rock formation affixed with numerous hand and foot holds that provides mental & physical challenges to build strength, endurance, and self-confidence. A popular activity among students, the 40 ft. climbing wall is a unique experience that offers novice to advance climbing routes, an artificial crevice, and a 45 degree overhang.

## **Student Publication**

The school newspaper, The Rattler, is the key student publication. The Student Publications Board under the supervision of the Dean of Students, cooperates with the student editors and staff adviser of all publications in order to maintain the highest journalistic standards.

## **Student Identification Cards**

During the registration processes each student is responsible for obtaining a Rattler Identification Card from the Student Life Office. The Rattler card is necessary for participating in student activities,

elections, for purchasing student tickets to athletic and cultural events, for checking out books from St. Mary's library and other college libraries, for use in the Registrar's Office, the Business Office, Bookstore, for use as a meal card in the Dining Facilities, as well as other official uses by the University. All students are required to carry their identification while on campus and must present it upon the request of any University official. ID cards are billed to all first time enrollees. Lost ID cards will be processed for a fee of \$10.00.

## **Recognized Student Organizations**

The University provides students with the means necessary to develop leadership in student, academic, social, and professional organizations. Membership in these organizations provides opportunities for developing the qualities expected of college graduates. The procedure for official University recognition of student groups is outlined in the Student Organization website.

## **Intercollegiate Athletic Programs**

St. Mary's University participates in intercollegiate athletic programs for men and women, designed to assist in the over-all development of students. Varsity athletic teams at St. Mary's are rich in history and tradition. School colors are gold and blue and the team name is the Rattlers. St. Mary's is a member of the Heartland Conference, the National Collegiate Athletic Association Division II. St. Mary's teams participate in baseball, basketball, golf, soccer and tennis for men; and basketball, softball, soccer, tennis, volleyball, golf, and cross country for women, and cheerleading for men and women. The Bill Greehey Arena is the home of the basketball and volleyball Rattlers while V.J. Keefe Field, one of the finest collegiate baseball stadiums in the country, is the home of the baseball team. St. Mary's University has four national champions: The 1986 and 2002 women's softball team, 1989 men's basketball team, and the 2001 baseball team.

## **University Ministry**

The mission of University Ministry at St. Mary's University is to assist the University's efforts to provide opportunities for all its members to develop the intellectual, moral, and spiritual principles needed for leading value and God centered lives. Although this is done within the Catholic and Marianist traditions, the University seeks to unite all persons on campus at their deepest level of religious consciousness, and to enrich them through a genuine ecumenical sharing. University Ministry, staffed by religious and laity, fosters a spirit of community and faith. We provide opportunities to strengthen one's spiritual life and, in collaboration with other departments, encourage community members to respond to the needs of others through the celebration of the Eucharist and other Sacraments, prayer, community service, social justice programming, service immersion experiences, pastoral counseling, retreats, Small Faith-Sharing Communities, spiritual direction, faith formation and other activities. The Eucharist is offered daily when classes are in session and on Sundays in the University Chapels. Special all-school Masses and smaller liturgies and prayer services are interspersed throughout the year. The Chapels are open daily for

private prayer.

All members of St. Mary's Community are invited to participate in liturgical ministries, retreat planning, Bible study, Sacramental preparation, community service projects, faith sharing groups, and much more. We also welcome the participation of faculty, staff as well as students and Alumni as part of our team effort to integrate a growing sense of ministry and service into the total experience of our academic community.

## **Civic Engagement and Career Development Center**

The Civic Engagement and Career Development Center supports the University mission by providing holistic, strategic and innovative services and programs that challenge and support students to succeed in their career development while serving and engaging in their communities in which they reside and beyond. The Center places emphasis on the importance of becoming life-long active and engaged citizens who use their education and experience to make a difference.

Civic engagement, as a part of a Catholic and Marianist education, encompasses the moral development of the whole person through service, as well as skills, leadership and knowledge needed to build community and work to resolve public problems for the common good.

The phrase "civic engagement" is used throughout scholarly literature to describe actions designed to identify and address issues of public concern. Some of the activities that regularly occur at St. Mary's and serve as a portal to civic engagement include: service-learning course instruction; ongoing volunteer efforts; immersion trips; and student involvement in programs such as the Marianist Leadership Program, the WINGS (Workers Invested in Knowledge and Growth throughout Service) initiative and Continuing the Heritage.

Similarly, the programs and services offered to assist students in their career exploration and planning are designed to move them through the developmental stages of investigation, preparation and maintenance of a successful career and are enhanced by their civic engagement experiences.

The staff work with students to discuss majors and career path options, to explore experiential opportunities such as job shadowing, volunteering, internships, and part-time employment, as well as to execute a successful job search or graduate school admissions process. The goal of educating students on making employment choices that best fit them as individuals and lead to productive and meaningful careers remains a core element of our mission.

The Civic Engagement and Career Development Center will work in partnership with faculty and staff, as well as external agencies and employers, to assist students at all stages of their development and to provide them with the opportunities, training, and education needed to succeed as active, informed and engaged citizens. [www.stmarytx.edu/careerservices](http://www.stmarytx.edu/careerservices)

## **The Service Learning Center**

Founded in 1994, and inspired by the Catholic and Marianist tradition of the University, the Service Learning Center assists the entire university community in fulfilling its mission of extending service to society. In particular, the Center challenges and supports students through the service learning experiences the Center develops.

These curricular and co-curricular experiences engage students in direct service work with the community, addressing systemic and recurrent social problems in their neighborhoods, and around the world. By involving these students in critical reflection on today's complex social realities, students further their academic knowledge, as well as develop life skills and a sense of compassion. This is the Center's role in the University's aspiration that students become responsible citizens and instruments of peace and justice. There are a number of service learning experiences that the Center develops, including: supporting Service Learning courses throughout the University, coordinating service projects for local direct service agencies, conducting service immersion trips within the city and throughout the world, supporting the Marianist Leadership Program, and co-sponsoring the Non-Profit Career Fair and the creation of the San Antonio Service Learning Intercollegiate Collaborative. The Service Learning Center sponsors intensive service and educational programs that center on a single issue for various lengths of time, from a weekend, to a week, to an entire summer.

The United States Conference of Catholic Bishops has stated that "in the Catholic tradition, responsible citizenship is a virtue; participation in the political process is a moral obligation" (*Faithful Citizen ship: Civic Responsibility for a New Millennium*). The Service Learning Center, through its programs that shape students through their interactions with the larger community, teaches them how to become more responsible citizens. The Center also helps to fulfill the mission of the University by assisting the faculty of the University in their efforts to provide a quality education to students, and in their efforts to contribute to the urgent task of extending justice, freedom and dignity to all people.

## **Marianist Leadership Program**

Funded by the Marianist Trust and administered by the Service Learning Center, the Marianist Leadership Program is dedicated to scholastic excellence and the development of the student as a leader through service and spirituality. The Catholic Marianist Spirituality guides members of the program through the development of lifelong habits by integrating faith and culture through leadership and service activities within the university and civic communities. Applications are accepted for entering freshmen, transferring and current students as allowed by current membership size. All majors are considered.



# St. Mary's Core

**The Core Curriculum at St. Mary's University** has a privileged role in the education of its students in accord with its mission as a liberal arts institution. More than a set of disparate general education requirements, and in distinction (but not separation) from professional, major, and co-curricular education, the Core Curriculum has the specific purpose of explicitly engaging students with the perennial question at the heart of the liberal arts: Who are we as human beings? This perennial question has many dimensions; the Core Curriculum at St. Mary's focuses on these five:

1. The question of self-identity
2. The question of the self in relationship to others
3. The question of the self in relationship to wider social structures
4. The question of the self in relation to the natural world
5. The question of the self in relationship to God

Answering these questions requires that students first enter a conversation between their own lived experience and the broad heritage of human learning and practice, both past and present. The Core Curriculum also asks students to take their answers from this conversation and embody them in their own lives of service to others and the common good. Finally, the Core Curriculum aims to enable students to take the necessary risk of asking and answering these questions again as their lives and circumstances change.

The Core Curriculum at St. Mary's has two parts: the [St. Mary's Core](#), a set of foundational courses taken by all students, and the [School Specific Core](#), a set of additional courses which addresses key Core areas and skills and which differs according to the specific undergraduate school.

For more information,

## Contact

**Megan Mustain, Ph.D.**

Director, St. Mary's Core Curriculum

Office: Chaminade Tower, Room 514

[mmustain@stmarytx.edu](mailto:mmustain@stmarytx.edu)

# Minors

## Humanities and Social Sciences

### Art - 18 hours

18 hours AR courses

### Catholic Studies - 18 hours

9 hours from:

CA 2301 Introduction to Catholic Studies

CA 3301 Catholicism in History I

CA 3302 Catholicism in History II

CA 4301 Capstone Seminar in Catholic Studies

9 hours Interdisciplinary electives in each of the following:

Studies in Catholic Identity and Narrative, Catholic Symbols and Rituals, or Catholic Ethos

### Counseling and Human Services - 18 hours

18 hours in CN courses

### Criminal Justice - 18 hours

6 hours from:

CJ 2300 Introduction to Criminal Justice

CJ 2304 Criminal Justice Administration

Plus 12 advanced hours CJ 3XXX, 4XXX

### Criminology - 18 hours

6 hours from:

CR 1311 Introductory Sociology

CR 3325 Criminology

Plus 12 hours CR from the following:

CR 3303 International Justice Systems

CR 3305 Law and Society

CR 3310 Corrections in the Community

CR 3313 Correctional Institutions

CR 3314 Substance Abuse

CR 3320 Social Stratification

CR 3323 Victimology  
CR 3324 Juvenile Delinquency  
CR 4301 Legal Topics in Criminal Justice  
CR 4302 Senior Seminar in CJ & CR  
CR 4303 CR 4303 Internship in CJ/CR  
CR 4305 Special Topics in CJ/CR

### **Drama - 18 hours**

18 hours DM courses

### **Economics - 21 hours**

15 hours from:

EC 2301 Introductory Macroeconomic Theory  
EC 2303 Introductory Microeconomic Theory  
EC 3310 International Economics  
EC 3346 Intermediate Macroeconomic Theory  
EC 3347 Intermediate Microeconomic Theory  
Plus 6 advanced hours from EC 3XXX, 4XXX

### **English - 18 hours**

3 hours from:

EN 3350 Introduction to Literary Theory  
Plus 15 advanced hours EN 3XXX, 4XXX, 5XXX

### **English Communication Arts - 18 hours**

3 hours from:

EA 3351 Topics in Communication Theory  
EA 3352 Survey of Communication  
EA 3353 Survey of Mass Communication  
EA 4369 Media Law and Ethics

9 hours from Group A:

EA 3321 Print Journalism  
EA 3322 Electronic Journalism  
EA 3323 Advanced News Writing  
EA 3331 Free-Lance Writing  
EA 3333 Corporate Communications  
EA 3341 Publication Writing  
EA 3342 Technical Writing

EA 4321 American Cinema-Drama  
EA 4330 New Technologies in Communication  
EA 4360 Introduction to Media  
EA 4361 Radio Production  
EA 4362 Graphics  
EA 4363 Video Production  
EA 4364 Basic Photography  
EA 4367 Public Relations  
EA 4368 Issues in International Communication  
6 hours from:  
SE 3321 Interpersonal Communication  
SE 3351 Topics in Communication Theory  
SE 3391 Argumentation and Debate  
SE 4321 Intercultural Communication  
SE 4351 Persuasion & Advocacy  
EN 3321 Persuasive Writing  
EN 3371 Contemporary Literary Criticism  
EN 4310 American Romanticism: Origins & Dev  
EN 5325 Classic Literature of the Western World  
EN 5328 Mexican and Other Latin American Lit  
EN 5340 Literature of Peace & War  
MK 3310 Principles of Marketing  
MK 3330 Consumer Behavior  
HR 3370 Human Resources Management

### **Speech - 18 hours**

9 hours from:  
SE 1341 Fundamentals of Oral Communication  
SE 1351 Introduction to Speech Communication  
SE 2321 Advanced Public Speaking  
Plus 9 advanced hours SE 3XXX, 4XXX, 5XXX

### **Exercise and Sport Sciences - 18 hours**

18 hours from:  
EX 1302 Foundations of Exercise & Sport Science  
EX 3302 Prev. & Care of Activity-Related Injuries  
EX 3304 Biomechanics of Human Movement  
EX 3376 Human Anatomy & Phys. of Exercise  
EX 4301 Wellness  
ES 4310 Internship Recreation & Fitness Mgmt

## **History - 18 hours**

12 hours from:

HS 1301 Historical Analysis: The US to 1877

HS 1302 Historical Analysis: The US since 1877

HS 1303 Historical Analysis: Intro to Latin America

HS 1351 World Civilization to 1650

HS 1352 World Civilization since 1650

Plus 6 advanced hours HS 3XXX, 4XXX

## **International Relations - 21 hours**

3 hours from:

EC 2301 Introductory Macroeconomic Theory

EC 2303 Introductory Microeconomic Theory

3 hours from:

HS 1352 World Civilization since 1650

HS 1303 Introduction to Latin America

3 hours from:

PO 1314 Understanding Global Politics

12 advanced hours from EC, HS, IB, IR, or PO 3XXX, 4XXX, 5XXX

Plus 3 hours from:

FR 2312 Second Year French II

GR 2312 Second Year French II

JP 2312 Second Year French II

PR 2312 Second Year French II

PR 2317 Portuguese for Spanish Speakers II

SP 2312 Second Year French II

## **Latin American and US Latinos Studies - 18 hours**

9 hours from:

AN 3302 Ancient Civilizations of the Americas

HS 3341 US Latino History

HS 4302 Colonial Latin America

9 hours from 3 of the following:

Economics: EC 3315

English: EN 5328, 5333

History: HS 3340, 3375, 4306, 4324, 4375, 4322;

Philosophy: PL 3368;

Political Science: PO 3312, 3320, 3330, 3363, 4368;

Psychology: PS 4363

Sociology: SC/CJ 3320, SC/AN/CJ/CR 3371;

Portuguese/Spanish: PR 3311, 3341; SP 3312, 3322, 3325, 3327, 3329, 3341, 3342, 3343, 3345, 3353, 3381, 3388, 4351;

### **Military Science - 21 hours**

21 hours from:

MS 1101 Fundamentals of Leadership & Mgmt

MS 1102 Fundamentals of Leadership & Mgmt

MS 2201 Self/Team Development

MS 2202 Applied Leadership & Management

MS 3301 Advanced Leadership & Management

MS 3302 Advanced Leadership & Management

MS 4301 Seminar in Leadership & Management

MS 4302 Seminar in Leadership & Management

Plus 3 hours in:

MS 3348 (HS 3348) History of World War II

MS 3355 (HS 3355) US Military History

### **Music - 23 hours**

16 hours from:

MU 1321 Basic Musicianship

MU 1322 Basic Musicianship

MU 1121 Aural Skills

MU 1122 Aural Skills

MU 2230 The Living Symphony

MU 2331 Music History: Medieval-Classical

MU 3332 Beethoven to the 21st Century

Plus 7 hours in applied music

Ensemble required every semester

### **Philosophy - 18 hours**

PL 2310 plus 3 hours from:

PL 3360 Ancient Philosophy

PL 3361 Medieval Philosophy

PL 3362 Early Modern Philosophy

PL 3363 Late Modern Philosophy

PL 3364 Contemporary Philosophy

Plus 6 advanced PL hours 3XXX, 4XXX

## **Political Science - 18 hours**

6 hours from:

PO 1311 American National Government

PO 1312 Texas State & Local Government

PO 1314 Understanding Global Politics

Plus 12 advanced PO hours 3XXX, 4XXX, 5XXX

## **Public Careers (Political Science Majors) - 21 hours**

3 hours from:

SC 1311 Introduction to Sociology

EC 2301 Introductory Microeconomic Theory

EC 2303 Introductory Macroeconomic Theory

Plus 12 hours from:

SC 3361 Urban Sociology

SC 3362 Demography and Ecology

SC 3381 Introductory Statistics

EC 3340 Public Sector Economics

Plus 6 advanced SC or EC (33XX, 43XX, 53XX)

## **Public Careers (Non-Political Science Majors) - 21 hours**

21 hours: PO 3321, 5300

Plus 9 hours from:

PO 2310 Political Research Methodology

PO 3302 The Legislative Process

PO 3310 Topics in Political Behavior

PO 3323 Urban Politics

PO 3344 American Political Thought

PO 4333 Constitutional Law II

Plus 6 hours from:

EC 3302 World Economic Geography

EC 3340 Public Sector Economics

EC 3355 Econ. of Natural Resources & Environment

SC 3321 Social Issues

SC 3361 Urban Sociology

## **International Public Careers (Political Science Majors) - 21 hours**

3 hours from:

SC 1311 Introduction to Sociology

EC 2301 Introductory Microeconomic Theory  
EC 2303 Introductory Macroeconomic Theory  
Plus EC 3310 (IB 3310), EC 3302, IB 3321, IB 4358  
Plus 6 hours from:  
HS 4302 Colonial Latin America  
HS 4306 Modern Latin America  
HS 4322 Spanish/Mexican/US Borderlands  
HS 4324 Modern Mexico  
HS 5314 Contemporary Europe  
HS 5324 Russia: The Soviet Period and After

### **International Public Careers (Non-Political Science Majors) - 21 hours**

21 hours: PO 3321, 5300  
Plus 9 hours from:  
PO 2310 Political Research Methodology  
PO 3330 Topics in Law  
PO 3343 20th Century Political Thought  
PO 3362 European Politics  
PO 3363 Latin American Politics  
PO 4368 Politics of International Political Economy  
PO 4369 Politics of World Security Policies  
PO 4370 US Foreign Policy  
PO 3360 Topics in International/Comparative Politics  
Plus 6 hours from:  
EC 3302 World Economic Geography  
EC 3310 International Economics  
HS 4302 Colonial Latin America  
HS 4306 Modern Latin America  
HS 4322 Spanish/Mexican/US Borderlands  
HS 4324 Modern Mexico  
HS 5314 Contemporary Europe  
HS 5324 Russia: The Soviet Period and After

### **Portuguese - 18 hours**

Portuguese Background:  
18 advanced hours PR 3XXX, 4XXX  
Non-Portuguese Background:  
6 hours from one of the following:  
PR 2311 and 2312 Second Year Portuguese I & II  
PR 2317 and 2381 Portuguese for Spanish Speakers I & II



PR 3000 level to cover the required PR 2000 level classes  
Plus 12 advanced hours PR 3XXX, 4XXX

### **Psychology - 18 hours**

18 hours PS courses

### **Sociology - 18 hours**

3 hours from:

SC 1311 Introductory Sociology

6 hours from:

SC 2331 Cultural Anthropology

SC 3351 Social Psychology

SC 4383 Sociological Research

SC 4384 Sociological Theory

Plus 9 hours in advanced SC 3XXX, 4XXX

### **Spanish - 18 hours**

Non-Spanish Speaking Background

6 hours from:

SP 2311 Second Year Spanish I

SP 2312 Second Year Spanish II

12 advanced hours SP 3XXX, 4XXX

Spanish Speaking Background

18 advanced hours SP 3XXX, 4XXX

### **Theology - 24 hours**

24 hours from:

SMC 1314 Foundations of Reflection: God

TH 3301 Major Old Testament Themes

TH 3302 Major New Testament Themes

TH 3330 Christ and the Christian God

TH 3332 The Catholic Church & Christian Comm

TH 3350 Contemporary Catholic Moral Life

TH 3352 Catholic Social Ethics

TH 3356 Marriage and Family Today

### **Women's Studies - 18 hours**

3 hours Philosophy/Theology:

WN 4336/PL 4336

WN 3356/TH 3356

Or WN 3300 as approved by Coordinator

9 hours Social Science:

WN 3352/HS 3352

WN 3316/PO 3316

WN 3337/PS 3337

WN 3343/SC 3343/AN 3343/CR 3343

WN 3310/AN 3311

WN 3320/AN 3320/CR 3320/CJ 3320

Or 3 hours from WN 3301 for AN, CJ, CR, EC, HS, IR, PO, PS, SC, as approved by Coordinator

6 hours English/Speech Communication:

WN 5330/EN 5330

WN 3333/EN 3333W

WN 3300/EN 3300

WN 3391/EN 3391

WN 4312/EN 4312

WN 4390W/EN 4390W

Or 3 hours WN 3302 for EA, EN, SE as approved by Coordinator

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## **School of Science, Engineering and Technology**

### **Biology - 20 hours**

8 hours from:

BL 1401 General Biology I

BL 1402 General Biology II

Plus 12 advanced hours BL 3XXX, 4XXX

### **Chemistry - 20 hours**

8 hours from:

CH 1401 General Chemistry I

CH 1402 General Chemistry II

4 hours from:

CH 3423 Analytical Chemistry

CH 3424 Instrumental Analysis

Plus 8 hours from:

CH 3411 Organic Chemistry I  
CH 3412 Organic Chemistry II  
CH 3433 Physical Chemistry I  
CH 3434 Physical Chemistry II

### **Computer Science - 20 hours**

17 hours from:  
CS 1410 Programming I  
CS 1411 Programming II  
CS 2313 Object Oriented Programming I  
CS 2315 Algorithms  
CS 3340 software Engineering  
Plus 3 advanced hours CS 3XXX, 4XXX

### **Math - 17 hours**

8 hours from:  
MT 2412 Univariate Calculus I  
MT 2413 Univariate Calculus II  
Plus 9 advanced hours MT 3XXX, 4XXX

### **Physics - 18 hours**

12 hours from:  
PY 1404 General Physics I  
PY 2404 General Physics II  
PY 3101 Atomic Physics Lab  
PY 3301 Atomic Physics  
Plus 6 advanced hours PY 3XXX, 4XXX

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## **Bill Greehey School of Business**

### **Business Administration - 24 hours**

21 hours from:  
AC 2310 Introduction to Accounting I  
AC 2320 Introduction to Accounting II  
BA 3351 Legal Environment of Business  
EC 2303 Introductory Microeconomic Theory

FN 3310 Corporate Finance  
BA 3325 Managing People & Organizations  
MK 3310 Principles of Marketing  
Plus 3 hours from:  
QM 3320 Business Statistics  
EG 3322 Industrial Statistics  
MT 4332 Probability and Statistics II  
PS 3385 Multivariate Statistics