CERTIFICATE IN EDUCATIONAL COMPUTER GAMING

Academic Year

2014-2015

Program Specific Admission Requirements

In this graduate certificate program, you will learn to evaluate, design and create educational computer games. These games can be developed to target any population, circumstance or situation to teach, train or practice any skill or topic. You may be an educator who wants to make some games for your classes, or a parent who may make some for your children, or just interested in how games can help someone learn.

To participate in this graduate certificate, students must have an undergraduate degree in a technology-related field (or equivalent experience) and have completed at least two computer programming classes with a B- or better. Students need computer programming as a skill they already have.

Certificate Requirements

The certificate requires four classes (12 credit hours) that can also be used toward a Master's of Computer Science or Computer Information Systems.

Required classes (two courses; 6 hours)

- CS6335 Game Development
- CS6375 Special Topics: E-Learning

Elective classes – select two (two courses; 6 hours)

- CS6315 Artificial Intelligence *
- CS6320 Files and Database *
- CS6325 Computer Graphics *
- CS6330 Network & Data Communications *
- CS6350 Hardware and Operating Systems *
- CS6375 Special Topics *

*Any research work in these classes must be in related to educational computer gaming.

Department Courses and Descriptions

CS 6310 **Introduction to Systems Analysis and Design** (3)
Concepts, methods and techniques used in the analysis and design of information systems. Student will complete projects using the techniques in practice.

CS 6320 **File and Database Systems** (3)
Development and application of databases with emphasis on topologies, normalization, and queries.

CS 6330 **Advanced Network and Data Communication** (3)
Introduction to intra- and inter-computer communications concepts and methodology. Issues include topologies, error detection and correction, LAN, ISO models, and protocols.

CS 6340 **Advanced Software Engineering** (3)
Modern methods of software design development and implementation. Emphasis is placed on application system generators and very high level programming languages. Prerequisite: CS 6310, proficiency in high-level programming language.

CS 6350 **Hardware and Operating Systems** (3)

Introduction to different types of computer hardware and operating systems software at both the microcomputer and large system level.

CS 6185, CS 6252, CS 6385 **Internship** (1, 2 or 3)
An experiential, practical applications approach to advanced computer science topics through work in a leading computer company or organization and the academic needs of the graduate CS/CIS programs. Consent of the Graduate Program Director is required.

CS 6315 **Artificial Intelligence** (3)
An advanced study into the area of artificial intelligence including topics such as expert systems, intelligent tutoring systems, robotics, search and gaming, predicate calculus, learning theories, and natural language processing.

CS 6325 **Computer Graphics** (3)
An advanced study into the development and implementation of computer graphics. The course may cover topics such as windowing, shearing, transformations, fractals, shading, and animation.

CS 6375 **Special Topics in Computer Science** (3)
A seminar based approach to advanced computer science topics. Topics may include areas such as computer security, game development, modeling and simulation, Internet programming and e-learning. May be repeated for credit as topics change. Consent of the Graduate Program Director is required for the Research section.

CS 6395 **Project** (3)
Students will work on their comprehensive or a related project for the CS or CIS master's degree, typically taken the semester before graduation for full-time students. Permission of instructor required and pre-proposal submitted before class.

Department Faculty

Certificate in Educational Computer Gaming Faculty Website

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