

CSE 4902 (Approved): Project: Design, Development, and Documentation of Interactive Systems

Course Description

Intensive group project involving design, development, and documentation of an interactive software system, a 2D interactive game; communication skills emphasized; builds programming maturity.

Transcript Abbreviation: Proj: Interact Sys

Grading Plan: Letter Grade

Course Deliveries: Classroom

Course Levels: Graduate

Student Ranks: Masters, Doctoral

Course Offerings: Autumn, Spring

Flex Scheduled Course: Never

Course Frequency: Every Year

Course Length: 14 Week

Credits: 4.0

Repeatable: No

Time Distribution: 3.0 hr Lec, 1.0 hr Lab

Expected out-of-class hours per week: 8.0

Graded Component: Lecture

Credit by Examination: No

Admission Condition: No

Off Campus: Never

Campus Locations: Columbus

Prerequisites and Co-requisites: Programming maturity and graduate standing

Exclusions: Not open to CSE and CIS majors; not open to students with credit for CSE 3902

Cross-Listings:

The course is required for this unit's degrees, majors, and/or minors: No

The course is a GEC: No

The course is an elective (for this or other units) or is a service course for other units: Yes

Subject/CIP Code: 14.0901

Subsidy Level: Doctoral Course

Course Goals

Be competent with 2D graphics objects and rendering.
Be competent with event based programming.
Be familiar with elements of game engines such as AI, animation, memory management, and user control.
Be familiar with game content creation and editing tools.
Be competent with writing, organizational, and presentation skills.
Be competent with analyzing the intended audience for a written document and writing an audience profile.
Be familiar with making engineering decisions involving tradeoffs (e.g., space-time tradeoffs in choosing a table implementation).
Be familiar with defining the purpose (persuade, inform, etc.) of a written document and select the appropriate rhetorical devices.
Be familiar with writing several pieces of documentation that have different purposes and using an appropriate organization to tie them together.
Be familiar with group project organization techniques including conducting group meetings, recording minutes, and tracking project progress.

Be familiar with using one structured approach to large software design to carry out a large group project.

Course Topics

Topic	Lec	Rec	Lab	Cli	IS	Sem	FE	Wor
Computer graphics and games overview	1.0							
Event based programming	1.0							
2D rendering pipeline	4.0							
Image processing	4.0							
Introduction to 3D graphics	4.0							
Student project team meetings	14.0		7.0					
Student project team design reviews, presentations, etc.	14.0		7.0					

Representative Assignments

Game design document
Minimal game engine with documentation and revised game design document
Expanded game engine with updated documentation and game asset creation tools
Polished game engine with full documentation

Grades

Aspect	Percent
Project Milestone 1	15%
Project Milestone 2	15%
Project Milestone 3	15%
Midterm	25%
Final	30%

ABET-EAC Criterion 3 Outcomes

Course Contribution		College Outcome
**	a	An ability to apply knowledge of mathematics, science, and engineering.
	b	An ability to design and conduct experiments, as well as to analyze and interpret data.
***	c	An ability to design a system, component, or process to meet desired needs.
***	d	An ability to function on multi-disciplinary teams.
**	e	An ability to identify, formulate, and solve engineering problems.
*	f	An understanding of professional and ethical responsibility.
**	g	An ability to communicate effectively.
	h	The broad education necessary to understand the impact of engineering solutions in a global and societal context.
*	i	A recognition of the need for, and an ability to engage in life-long learning.
	j	A knowledge of contemporary issues.
***	k	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Additional Notes or Comments

* Moved exclusion from General Information to Exclusions. --rowland

Prepared by: Neelam Soundarajan