Dept Number	CS 487	Course Title	Software Aspects of Game Development
Semester Hours	3	Course Coordinator	Michael Wainer
Catalog Description	This course focuses on software implementation and development aspects of game production including: software process, system architecture, frameworks, entity management and interaction design, game design, production and business issues as well as technical foundations in graphics modeling and rendering, collision detection, physics, artificial intelligence, and multiplayer techniques.		

Textbooks

Introduction to Game Development, 2nd Edition, Edited by Steve Rabin, Charles River Media, 2010

References

References to Java, OpenGL, JOGL and documentation for other packages such as game engines used in projects. Links to related articles and resources.

Course Learning Outcomes

- To appreciate major components, challenges and approaches in constructing computer games.
- To be able to design and implement computer gaming applications.

Assessment of the Contribution to Program Outcomes

Outcome →	1	2	3	4	5	6	7	8	9	10
Assessed →	X	X	X	X	X					

Prerequisites by Topic

330 with a grade of C or better.

Major Topics Covered in the Course

1. Introduction to video games and game design history, categories, social impact, ratings, associations game design, flow, design representations {6 classes}
2. Software tools & practices: tools, practices/methodologies {4 classes}
3. Game Implementation: graphics foundations/standards/subsystems, I/O devices, architectures and language options, frameworks/ engines, entity management. resource management , collision detection and resolution , event handling and user interaction design 2D/3D viewing, onscreen controls, HUD, controlling the process, teams, contracts, postmortems usability/play-testing/Q.A {21 classes}
4. Technical foundations and future directions: 2D/3D modeling, transforms and animation textures, lighting, rendering, physics and simulation, artificial intelligence, audio/multimedia, networking/mobile gaming {9 classes}

Major Assignments:

Labs introducing libraries for interactive graphics and game frameworks/engines

Larger, possibly group project, usually a game, depending upon students' individual interests