THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Capstone Design: Game Design and Development

CSE 5912

Credit Hours:
4.00

Course Levels:
Undergraduate (1000-5000 level)
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:
Capstone design project; conceptual and technical design and implementation of interactive game, integrating custom code and toolkits; teamwork, written and oral communication skills.

Prerequisites and Co-requisites:
Prereq: 3541 or 5541, and 2501 or Philos 1338, and CSE 3901 or 3902 or 3903, and 2nd writing course; or Grad standing.

Course Goals / Objectives:
- Master synthesizing and applying prior knowledge to designing and implementing solutions to open-ended computational problems while considering multiple realistic constraints
- Be competent in evaluating design alternatives
- Be competent with software design and development practices and standards
- Be familiar with researching and evaluating computing tools and practices for solving given problems
- Be competent with deadline driven projects in a team setting
- Be competent with issues of project management, such as teamwork, project scheduling, individual and group time management
- Be competent with presenting work to a group of peers
- Be familiar with presenting work to a range of audiences
- Be competent with techniques for effective written communication for a range of purposes (user guides, design documentation, storyboards etc.)
- Be familiar with analyzing professional issues, including ethical, legal and security issues, related to computing projects
- Master the development of a complete and functional computer game including elements of computer graphics, artificial intelligence, spatial sound, input controllers and GUI's

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Course Topics:
- Course overview and project guidelines
- Game idea generation and game team formation
- Software engineering for games, basic game structure, source code control, project management and agile software development concepts
- Student presentations and demos of current progress on game design and development
- Student presentations of team research on current trends, technologies and toolkits used in game programming such as three-dimensional sound, physics, scripting, networking, input controllers, etc.
- In-class team game project design and development time
- Game business and current trends

Designation:
Elective