CIS 488/588 Sections 001/002
Game Design 2
3 Credit Hours, Fall 2020
6:00-8:45 W, Lecture, 1110 PEC and On-line

Contact Information:

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- Office Hours: 4-5 T W Th by appt. MF

- Office Location: 233 CIS

Course Description:

This course is a continuation of the material studied in CIS 487/587. The focus of the course will be hands-on development of computer games and computer game development tools (e.g. game engines). Students will study a variety of software technologies relevant to computer game design, including: 3D graphics, computer animation, data-driven game design, multiplayer game programming, and game AI. Lecture topics will be taken from several areas of computer science: simulation and modeling, computer graphics, artificial intelligence, game theory, software engineering, human computer interaction, and game content development.

Graduate students will be normally expected to work as individuals to complete their game projects. Undergraduate students will be required to work on project teams.

Learning Goals:

Dearborn Discovery Core Category and Goals:

- None

Program Learning Goals:

- Our graduates will be successfully employed in a computer and information science-related field or another career path, in an industrial, commercial, academic, governmental, or non-governmental organization, or will be a successful graduate student in a program preparing them for such employment
- Our graduates will lead and participate in culturally diverse teams, becoming global collaborators and adapting to an ever changing field

- Our graduates will continue their professional development by obtaining continuing education credits, professional registration or certifications, or post-graduate study credits or degrees

Course Objectives:

a. Outcomes of instruction
- The student will be able to design a 3D multimedia computer game and create design documents for it
- The student will be able to design an original game using an intelligent opponent of the student's own design
- The student will be able to design an original game using an intelligent opponent of the student's own design
- The student will be able to design trade-offs considered in formulating the software architecture design for an original 3D game
- The student will be able to develop the requirements for a 3D multimedia computer game
- The student will be able to develop the requirements for an intelligent computer opponent for a computer game

b. Student outcomes addressed in the course
- Outcome 2 – Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Outcome 5 – Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.

Required Materials and/or Technology:

REQUIRED: The Art of Game Design: A Book of Lenses, J. Schell, A.K. Peters/CRC Press, 2019.

RECOMMENDED: Unreal Engine 4, A. Sanders, A.K. Peters/CRC Press, 2016.

URL: http://www-personal.umd.umich.edu/~bmaxim/
http://groups.umd.umich.edu/cis/course.des/cis488.html
http://groups.umd.umich.edu/cis/course.des/cis588.html

Assignments and Grading Distributions:

6 Project Assignments (Written and Oral)	50%
Final Reports	20%
Working Game	20%
Attendance	10%

97-100%	A+	84-86%	B	70-73%	C-
94-96%	A	80-83%	B-	67-69%	D+
90-93%	A-	77-79%	C+	64-66%	D
87-89%	B+	74-76%	C	60-63%	D-

Tentative Course Outline and Schedule:

Date	Activity and Content
Jan 08	Course Introduction Role Play Begins Intro to Unreal 4 (UR1-UR2)
Jan 15	Game Pitch Presentations – 1110 PEC
Jan 22	Teams Formed – Brainstorming Game Studio Process Model Definition Unreal Level Editing (UR3-UR4)
Jan 29	Cubicorn Games - Consultants One Page Presentations Studio Process Definition Model - approval
Feb 05	Blueprints and Reactive Elements (UR5) Game Treatment Presentations and Market Analysis - due
Feb 12	Lens Presentations (3) Elevator Pitches Materials, Lighting, Terrain (UR6-UR7,UR12)
Feb 19	Lens Presentations (3) Two Pitch Swaps Matinee and Bot Navigation (UR8)
Feb 26	Alpha Release Presentations – 1110 PEC Play Testing – 237 CIS
Mar 04	Spring Break
Mar 11	Lens Presentations (3) One Sheet Evaluations Unreal Scripting and AI (UR11)

Mar 18	Lens Presentations (3) Intellectual Property Karma Actors, Weapons, Characters (UR9)
Mar 25	Beta Release Presentations – 1110 PEC Play Testing – 237 CIS
April 01	Lens Presentations (3) Sequel Creation User Interfaces, Particle Effects (UR10)
April 08	Lens Presentations (3) Team Management
April 15	3D Game Marketing Presentation Due and Postmortems
April 22	3D Project Fair 6:30-9:30 237 CIS

Course and University Policies:

Instructor or Course Specific Policies:

A student enrolled in a course (lecture, laboratory, recitation, colloquium, seminar, or other university approved format) is expected to attend every scheduled session of the course. The instructor of each course will make known to the students the course attendance policy with respect to student absences. It is the student's responsibility to be aware of this policy. The instructor makes the final decision to excuse or not to excuse an absence.

Presence or participation is also expected in online courses. Participation in online courses can take various forms; it is the instructor who determines what form of presence or participation is expected. Students enrolled in online courses are responsible for being aware of that policy/expectation.

An instructor is entitled to give a failing grade for excessive absences or for a student who stops participating in class at some point during the semester.

University-wide Policies or Statements Relevant to Courses:
Please see the 'Course Policies' Menu on Canvas for information on the following:
- University Attendance Policy
- Academic Integrity Policy
- Counseling
- Disabilities Services
- Safety Statement
- Harassment, Sexual Violence, Bias, and Discrimination