University of Michigan-Dearborn Syllabus

CIS 488/588 Game Design 2 - 3 credit hours
Semester and Year: Winter 2017

Prof. Bruce R. Maxim
Office Location: 233 CIS
Phone Number: (313) 436-9155
E-Mail: bmaxim@umich.edu
Office Hours: 4:00-6:00 M, 4:00-6:00 W, 2:00-4:00 Th, by appt. F
Dearborn Discovery Core Category or Categories: None
Course Meeting Times and Format(s): 6:00-8:40 W, Lecture, 1110 PEC
URL: http://www-personal.umd.umich.edu/~bmaxim/
http://groups.engin.umd.umich.edu/CIS/course.des/cis488.html
http://groups.engin.umd.umich.edu/CIS/course.des/cis588.html

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

Program 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

Dearborn Discovery Core Goals:

None.

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 b – An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution *(Not assessed here)*
- Outcome c – An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs *(Not assessed here)*
- Outcome k – An ability to apply design and development principles in the construction of software systems of varying complexity *(Not assessed here)*

Required Materials and/or Technology:

REQUIRED: The Art of Game Design: A Book of Lenses, J. Schell, Morgan Kaufmann, 2015.
RECOMMENDED: Unreal Engine 4, A. Sanders, A.K. Peters/CRC Press, 2016.
TECHNOLOGY: Unreal4 and multimedia editing tools.

Assignment and Grading Distribution:

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

Grading Scale:

96%- 100%	A+	77%-79%	C+
92%- 95%	A	74%-76%	C
90%- 91%	A-	70%-73%	C-
87%- 89%	B+	67%-69%	D+
84%- 86%	B	64%-66%	D
80%- 83%	B-	60%-63%	D-

Tentative Course Outline:

Date	Activity and Content
Jan 11	Course Introduction Intro to Unreal 4 (UR1-UR2)
Jan 18	Game Pitch Presentations – 1110 PEC
Jan 25	Teams Formed – Brainstorming Game Unreal Level Editing (UR3-UR4)
Feb 01	Cubicorn Games - Consultants Studio Process Definition Model Blueprints and Reactive Elements (UR5)
Feb 08	Game Treatment Presentations and Market Analysis– 1110 PEC
Feb 15	Lens Presentations (3) Materials, Lighting, Terrain (UR6-UR7,UR12)
Feb 22	Lens Presentations (3) Two Pitch Swaps Matinee and Bot Navigation (UR8)
Mar 01	Spring Break
Mar 08	Alpha Release Presentations – 1110 PEC Play Testing and One Sheet Evaluations – 237 CIS
Mar 15	Lens Presentations (4) Unreal Scripting and AI (UR11)
Mar 22	Lens Presentations (4) Intellectual Property Karma Actors, Weapons, Characters (UR9)
Mar 29	Beta Release Presentations – 1110 PEC Play Testing – 237 CIS
April 05	Lens Presentations (4) User Interfaces, Particle Effects (UR10)
April 12	Lens Presentations (4) Team Management

April 19	3D Game Marketing Presentation Due and Postmortems Lens Presentations (3)
April 26	3D Project Fair 6:30-9:30 139 CIS

University Attendance Policy:

A student is expected to attend every class and laboratory for which he or she has registered. Each instructor may make known to the student his or her policy with respect to absences in the course. 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. An instructor is entitled to give a failing grade (E) for excessive absences or an Unofficial Drop (UE) for a student who stops attending class at some point during the semester.

Academic Integrity Policy:

The University of Michigan-Dearborn values academic honesty and integrity. Each student has a responsibility to understand, accept, and comply with the University's standards of academic conduct as set forth by the Code of Academic Conduct (http://umdearborn.edu/697817/), as well as policies established by each college. Cheating, collusion, misconduct, fabrication, and plagiarism are considered serious offenses and violations can result in penalties up to and including expulsion from the University

Disability Statement:

The University will make reasonable accommodations for persons with documented disabilities. Students need to register with Counseling & Disability Services (DS) every semester they are enrolled. DS is located in 2157 UC (http://www.umd.umich.edu/cs_disability/). To be assured of having services when they are needed, students should register no later than the end of the add/drop deadline of each term. If you have a disability that necessitates an accommodation or adjustment to the academic requirements stated in this syllabus, you must register with DS as described above and notify your professor.

Safety:

All students are encouraged to program 911 and UM-Dearborn's University Police phone number (313) 593-5333 into personal cell phones. In case of emergency, first dial 911 and then if the situation allows call University Police.

The Emergency Alert Notification (EAN) system is the official process for notifying the campus

community for emergency events. All students are strongly encouraged to register in the campus EAN, for communications during an emergency. The following link includes information on registering as well as safety and emergency procedures information: http://umdearborn.edu/emergencyalert/.

If you hear a fire alarm, class will be immediately suspended, and you must evacuate the building by using the nearest exit. Please proceed outdoors to the assembly area and away from the building. Do not use elevators. It is highly recommended that you do not head to your vehicle or leave campus since it is necessary to account for all persons and to ensure that first responders can access the campus.

If the class is notified of a shelter-in-place requirement for a tornado warning or severe weather warning, your instructor will suspend class and shelter the class in the lowest level of this building away from windows and doors.

If notified of an active threat (shooter) you will Run (get out), Hide (find a safe place to stay) or Fight (with anything available). Your response will be dictated by the specific circumstances of the encounter.