CSE 487/587
Game Design and Implementation
Spring 2019

1. Preliminaries

Instructor:	Eric Bachmann
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Teaching Assistant: Justin Messinger, Huijie Bao

<u>Class Hours and Location:</u>

Monday and Wednesdays: 8:30 am – 9:50 am   016 Benton Hall

<u>Scheduled Office Hours:</u>

Mondays and Thursdays: 1:00 pm – 3:00 pm
Priority will be given to those with appointments. Appointments can be made using the following link:

https://calendar.google.com/calendar/selfsched?sstoken=UU1PUDA3cFRyZ0hQfGRlZmF1bHR8MDNlZGIz OGVhMTE0NDg2YmU4MjkxN2JmNWViZTQ2OTc

<u>Teaching Assistant (TA) Help Sessions:</u>

Tuesdays:	6:30 pm – 8:30 pm	Benton Hall 006
Thursdays:	6:30 pm – 8:30 pm	Benton Hall 002

2. Course Description

Study of architectures, algorithms, and software design patterns used in computer games. Students work with a game engine to design and implement several kinds of games. Topics include animation techniques, physics simulation, user controls, graphical methods, and intelligent behaviors.

3D interactive game programming will be accomplished using the current version of the Unity game engine. Consider also taking IMS 319 (or CSE 270A this semester) if you are also interested in digital modeling .

PREREQUISITES: CSE 287

3. Textbooks

None.

4. Resources

There are numerous tutorials available on the Internet. I will restrict assigned materials to those found on the Unity3d site and texts which can be read for free at "Safari Tech Books Online."

Unity 3D Tutorials:

http://unity3d.com/learn/tutorials/modules

Unity Manual:

http://docs.unity3d.com/Manual/

Unity Scripting API:

http://docs.unity3d.com/ScriptReference/

Unity Asset Store:

https://www.assetstore.unity3d.com/en/

Safari Tech Books Online:

Go to http://www.lib.muohio.edu, select "Databases A-Z", and then "Safari Tech Books Online" (You may need to log in with your Miami username and password).

5. Obtaining Unity 3D

To work on projects outside of the labs, you will need to download and install the Personal Edition of Unity 3D from http://unity3d.com/unity/download. During installation, you will need to register with Unity. The current version of Unity is 2018.3. Do not download and install a newer version if one becomes available unless directed to do so by the instructor. In the past, small updates have caused problems for students moving their work between at home and in the labs.

6. General Format of the Course

Each week students will be assigned videos, tutorials, and/or readings to be completed outside of class. Weekly study guides will list the materials to be covered as well as key items to "Note, Learn, and Understand." There will be a short online quiz associated with each study guide that is to be completed before the lab that is related to the material. Most class time will be devoted to working on labs related to the topics covered in the study guides. Any lab work not completed in class must be completed outside of class. **Labs will generally be due Saturday night at midnight**. Weekly quizzes will be given that cover the materials from the previous week. There will be no exams. Individual projects covering several weeks of material will be assigned at various times during the semester. Final projects will be demonstrated during finals week.

Students enrolled in CSE587 will write a study guide and tutorial that is similar to the weekly lab assignments. The tutorial will cover a topic that is not covered in the class and will be chosen in consultation with the instructor. They may also be assigned additional work on the labs and be required to meet additional project requirements.

7. Course Policies

Individual Responsibility

Keep up with the reading. **It is expected that students will spend a minimum of two to three hours outside of class for every hour spent in class or lab.**

Bring questions to class.

Do not expect course materials to be perfect. Documents may contain typographical errors as well as missing or incorrect information. Assignments may also be unclear. **It is your responsibility to inform the instructor of ambiguities, errors or omissions as soon as possible so that they can be corrected.**

Email

Regularly check your Miami email for announcements about the course. Corrections or additions to assignments may be communicated in this manner.

I will not respond to emails sent to me on a 24/7 basis. Do not expect me to quickly respond to email in the evenings or on weekends.

Attendance

You are allowed four unexcused absences without penalty.

If you have more than four unexcused absences and the last day to drop has not passed, you will be dropped from the course. If the drop deadline has passed, you will receive a failing grade in the course.

Regarding the idea of "excused" absences, the following excerpt is from Miami's Student Handbook:

"There are no University-recognized excused absences except for religious observances that require absence from a class session and other required class activities. Students must give written notification to their instructor within the first week of class of the religious event that prohibits class attendance and the date that will be missed, if officially known. Instructors will, without prejudice, provide such students with reasonable accommodations for completing missed work. However, students are ultimately responsible for material covered in class, regardless of whether the student is absent or present."

Getting Class Materials and Submitting Work:

- Note outlines and other material for the course will be on the course **Canvas** site. Projects and labs will be submitted through this site as well.

Exams and Quizzes

This course does not have any formal exams. Quizzes will be given each week. The quizzes will be over the items outlined in the "Note, Learn, and Understand" and lab from the previous week.

There is **no makeup for missed quizzes**. Your lowest quiz grade will automatically be dropped.

Labs and Projects:

Assignments cannot be turned in late.

Your lowest lab grade will automatically be dropped.

Start early and backup your work. Begin working on assignments on the day they are assigned. Plan to complete your work well before the due date. Starting 24 hours before the due date, the instructor will not provide help on assignments.

Ten percentage points minimum will be deducted if the assignment is not turned in correctly.

Grading

Individual grades will routinely be posted via on canvas. **Check your grades regularly and immediately let the instructor know if something seems incorrect.**

At the discretion of the instructor scores for specific graded items may be curved. The final grade will be computed using the following weights:

Quizzes:	40%
Labs:	20%
Projects:	20%
Final Project:	20%

Final letter grades will be assigned according to the following scale.

A+	[97, 100]		C	[73, 77)
A	[93, 97)		C-	[70, 73)
A-	[90, 93)		D+	[67, 70)
B+	[87, 90)		D	[63, 67)
B	[83, 87)		D-	[60, 63)
B-	[80, 83)		F	(0,60)
C+	[77, 80)			

Academic Integrity:

WORK ALONE. Learn to help one another without sharing code. Review departmental academic integrity expectations at

http://miamioh.edu/cec/academics/departments/cse/academics/academic-integrity/index.html

and make sure you understand them.

People learn by doing the work themselves. All students shall comply with departmental academic integrity expectations. Projects and assignments that are essentially identical will considered to be the work of another, and will be treated as academic dishonesty.

Miami University Learning Community

Miami University is committed to fostering a supportive learning environment for all students irrespective of individual differences in gender, race, national origin, religion, handicapping condition, sexual preference, or age. Students should expect, and help create, a supportive learning environment free from all forms of prejudice. Disparaging comments, sexist or racist humor, or questioning the academic commitment of students based upon these individual differences are behaviors that undermine our learning community. If such behaviors occur in class, please seek the assistance of your instructor or department chair.

Students with Disabilities

If you have a documented disability and need special accommodations in this course, you must contact the Office of Disability Resources, 19 Campus Avenue Building. Once you submit the required documentation, they can determine what accommodations, if any, you will be given by your instructor. You will also receive paperwork with which to notify your instructor. For more information, refer to Chapter 3 (Part 4: Health and Safety) of the *Student Handbook.*

In-class Electronics Usage Policy

Mobile devices such as phones, tablets, and laptops may be used during class for class-related purposes. Playing games, answering email, etc. is discouraged and may result in students being asked to leave the class.

Tentative Schedule:

Week	Topics	
1 January, 28 and 30	Unity Interface Game Objects and Components Using Imported Assets and Packages	
2 February 4 and 6	Introduction to Scripting	
3 February 11 and 13	More Scripting	
4 February 18 and 20	Physics and Collision Detection	
5 February 25 and 27	Cameras, Audio, and Image Effects	
6 March 4 and 6	User Interface (UI) and Particle systems	
7 March 11 and 13	Rendering and Shading, Lights, Materials, and Textures	
8 March 18 and 20	Nav Meshes	
Spring Break		
9 April 1 and 3	Animation Basics	
10 April 8 and 10	Animating Skinned Meshes and Controlling Characters	
11 April 15 and 17	Animating Skinned Meshes and Controlling Characters	
12 April 22 and 24	Multi-User Games	
13 April 29 and May 1	Blender	
14 May 6 and 8	Final Project Work	
Finals Week May 15	Final Project Demos and Presentations Wednesday 8: 00 - 10:00 pm	

Other Dates:

https://miamioh.edu/onestop/your-records/academic-records/final-exams/final-exam-schedule/index.html#/

Last day to web register (add/drop) in BannerWeb (11:59 p.m.): Thursday, January 31
Last day for departments/instructors to add students to a course or independent work: Monday, February 4
Last day to drop a class without a grade; last day to change credit/no credit: Friday, February 15
Last day to drop from a course with a 'W' and last day to change to/from audit status: Tuesday, April 9.

(https://miamioh.edu/events/academic-calendar/2018-2019/index.html)