# COMP 1100 Intro to Video Game Programming – Fall 2016

**Ernest McCracken**

## Contact Information:



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| **Office: Dunn 147 (ACM Lounge)** | **Department Office:** Dunn Hall 375 |
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## Office Hours:

It's best to set up an appointment with me.

## Lecture Meeting Times/Locations:

5:30 - 8:30 Wed Dunn Hall 119

## Catalog Description:

**COMP 1100 – Intro to Video Game Programming (3)** Principles of game design and graphics. Meshes, Transforms, Vector Mathematics, Materials, Textures, and Shaders. Animation systems, Pathfinding and steering behaviors. Collision detection and physics using rigidbodies. Processing input and GUI systems. All in the context of the Unity game engine.

## Course Website:

eCourseware system: https://elearn.memphis.edu

## Required Text:

Patrick Felicia, *Unity 5 from Zero to Proficiency (Foundations) (Volume 2)*
Patrick Felicia, *Unity 5 from Zero to Proficiency (Beginner) (Volume 2)*

## Labs Assignments:

There will be a lab assignment most weeks to reinforce the concepts discussed during lecture. Most of these assignments will require you to submit an exported Unity package which we will discuss in class. These assignments are individual efforts! Some homework assignments will require assets that I will provide you. If you wish to use other assets please let me know ahead of time.

## Attendance:

Attendance doesn't officially count towards your final grade, but it's crucial that you attend class regularly.

## Email:

Please check your University of Memphis email account at least once a day, as that is my primary means of communicating with you outside of class.

## Late/Makeup Policy:

All lab assignments are expected to be completed and turned in on schedule. Due dates will be clearly indicated for each assignment. Late lab assignments are NOT accepted except in extreme circumstances. Likewise, makeup quizzes and exams will be given only under extreme circumstances. If you feel that your circumstances warrant a late work submission or a makeup quiz/exam, get in touch with me as soon as possible. Be prepared to show some kind of documented proof of your situation. **Computer and Dropbox issues do not count as excuses!**

## Plagiarism/Cheating Policy:

An essential part of learning how to program is getting plenty of practice with it yourself. As such, all assignments for this class (unless specifically indicated otherwise) are expected to be individual efforts. If I determine that you have copied something directly from a book, the Internet, or some other source, you will receive a failing grade on the assignment and (at my discretion) a failing grade in the course. If I determine that you have copied another student's assignment, this will happen to both you and the person from whom you copied. The incident may also be forwarded to the University Judicial Affairs Office for further disciplinary action. Please don't put me in this situation.

## Getting Help:

Although I expect your work for this class to be done individually, I encourage you to seek help if you get stuck: Come talk to me! I'm very willing to sit down and try to provide hints without giving away the solution.

The Computer Science Learning Center (Dunn Hall 208) will be open throughout the semester. Hours will be posted on the door, as well as online at http://www.cs.memphis.edu/index.php?p=cslc. The lab will be staffed by computer science graduate students whom you can ask for help.

## Student Disabilities:

If you have a disability that may require assistance or accommodations, or if you have any questions related to any accommodation for testing, note taking, reading, etc., please speak with me as soon as possible. You must contact the Student Disability Services Office (678-2880) to officially request such accommodations / services.

## Evaluation:

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| Homework | 240 pts. (12 @ 20 pts. each) |
| Quizzes | 140 pts. (4 @ 35 pts. each) |
| Midterm Exam | 135 pts. |
| Final Exam (Comprehensive) | 185pts. |

Final grade: add up your point total and divide by 700 (the total number of points possible). .

## Grading Scale: Letter grades will be determined as follows:

**A**+: 96-100%; **A**: 90-95%
**B**+: 87-89%; **B**: 81-86%; **B-**: 79-80%
**C**+: 77-78%; **C**: 71-76%; **C-**: 69-70%
**D**+: 67-68%; **D**: 60-66%
**F**: Below 60%

## Tentative Course Schedule:

| Date | Lecture Material | Assignments |
|---|---|---|
| 8/24 | Course introduction , Modern Game Engines<br>Unity 5 Interface and Essentials, Game Objects, Assets, Prefabs | HW 1: Essentials |
| 8/31 | Meshes, Materials, Colliders and Rigidbodies<br>Unity Standard Assets and Cameras, Skyboxes | HW 2: Creating a Scene |
| 9/7 | Physics Materials, Lighting,<br>Shaders, The Standard Shader, Physically Based Rendering | **Quiz 0**<br>HW 3: Dynamic Objects |
| 9/14 | Overview of Vector math, 2D vs 3D axis.<br>Transforms, Local vs Global coordinates. | |
| 9/21 | Introduction to Scripting, variables, function calls<br>Collision/Trigger Events | HW 4: Custom Behavior |
| 9/28 | Animation<br>**Review for Midterm** | **Quiz 1** |
| 10/5 | **Midterm**<br>Unity API | HW 5: Mecanim Animation |
| 10/12 | Transforms In Depth<br>Translation and Rotation via Scripting | HW 6: Movement |
| 10/19 | Steering Behaviors<br>Pathfinding and Navigation | HW 7: Automated Agents |
| 10/26 | Organizing Input : Input Manager<br>Character Controllers | **Quiz 2 (11/2)**<br>HW 8: Player Controls |
| 11/2 | Raycasting and Layers<br>Particle Systems | HW 9: Targeting |
| 11/9 | Audio in Unity<br>Advanced Lighting | HW 10 : Spatial Audio |
| 11/16 | User Interface | HW 11: GUI's |
| 11/23 | Advanced Programming Concepts<br>Virtual Reality | HW 12: TBD<br>**Quiz 3 (11/30)** |
| 11/30 | **Review for Final** | |

**FINAL EXAM:** **W, Dec 7, 5:30 - 7:30p**

**(same classroom as lecture)**