

GAME 180 – Engine Scripting and Programming

UNM Valencia, Game Design and Simulation

updated 1-2019

Spring 2019

Tuesday | Thursday, 3:00 pm – 4:15pm

Instructor: Jonathan Morrison

jonmorri@unm.edu

Campus Office Hours: Monday & Wednesday 10:30-12:00
 Tuesday & Thursday 10:30-12:00
 Also by appointment
 B&T 110

Office: Business & Technology Room 105C

Course Description

This course focuses on engine programming using Unreal Engine 4. Students will learn how to create a full game type with custom pickups, weapons, sounds and A.I.

Objectives

- Demonstrate a working knowledge of Unreal's BluePrint interface
- Demonstrate a working knowledge of how to create logical code
- Demonstrate a working knowledge of packaging and game distribution
- Demonstrate a working knowledge of creating and maintaining an Unreal Engine Project

Required Text

None

Student Responsibilities/Attendance/Participation

Student Responsibilities:

- Students must have basic computer and file management skills for all GAME courses. Custom tutoring services are available through the TLC. Required pre/co requisite is IT 101: Computer FUNdamentals. Students that fall behind due to lack of basic computer skills will be dropped.
- Bring a USB Flash Drive (at least 32 GB, recommended 200+Gb external hard drive) to every class. Make sure it is clearly labeled with your name on it.
- Have access to the required text(s) and other subscriptions as required
- If you have a disability, please inform me of your needs as soon as possible to ensure that your needs are met in a timely manner.
- Cell phones need to be muted during class times. If you must receive a call, leave the lab before you answer. No phone conversations in the studio. No web browsing, email, or text messaging during lectures, demos, discussions, or critiques.
- **COMPUTERS WILL BE OFF DURING ALL CRITIQUES!!!**

Attendance/Participation:

- Students are required to complete all projects on time, participate in scheduled critiques/class discussions/presentations, and maintain a safe, respectable, positive lab environment.
- Students are required to attend class, arrive on time, remain present until the end of class, and be prepared for each day's work. More than three absences without prior consultation may result in a failing grade or a drop from the class. Leaving early or arriving late three times results in one absence.
- If you have not attended class for three consecutive class periods and have made no attempt to call/email/IM/contact me, you WILL be dropped.
- Students who do not attend the first week of class will automatically be dropped.

Grading Policy

Grading:

- Grading is based on a timely completion of course assignments, the quality of individual technical and critical development, conceptual progress, personal commitment and the ability to work in a community studio setting. Personal commitment involves regular attendance, consistent effort, completion of work, participation in presentations, critiques and class discussions, and the general willingness to try. Make each project meaningful to yourself!
- Each assignment will culminate in a presentation, which will consist of discussing your work and/or projecting your completed work in class for all to see. All due dates will be announced in Blackboard, as well as on the syllabus. No full credit will be given for any late work. If an assignment is not presented on time, an automatic 0 will be issued. You will need to make arrangements with me if you are planning to make-up the work, and a fair grade will be issued once the work has been submitted, presented, and critiqued, minus an automatic one letter grade deduction.
- Incompletes are rarely issued. If 75% of the semester's work/projects/deliverables and participation/attendance have been completed with a satisfactory grade, and incomplete may be issued.

Grading Breakdown

Semester Requirements:

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|-------------------------|-----------|----------------|
| Projects | 46 points | total |
| Final Project | 26 points | |
| Assignments | 20 points | |
| Midterm and Final Exams | 30 points | 15 points each |

Extra Credit:

Extra Credit 10 points maximum for the semester

Points will be added up and a letter grade will be issued according to the following scale:

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|----|--------|
| A+ | 101+ |
| A | 94-100 |
| A- | 90-93 |
| B+ | 88-89 |
| B | 84-87 |
| B- | 80-83 |
| C+ | 78-79 |
| C | 74-77 |
| C- | 70-73 |
| D+ | 68-69 |
| D | 64-67 |
| D- | 60-63 |
| F | 50-59 |

How to Contact the Instructor

Campus Office Hours: Monday & Wednesday 10:30-12:00
 Tuesday & Thursday 10:30-12:00
 Also by appointment
 B&T 110C

Office: Business & Technology Room 105C

Email:

- You can email me at jonmorri@unm.edu In the Subject Line of the email, ALWAYS write your full name and class number. For example – “Jonathan Morrison GAME 205”

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| <h2>Support Information, Resources, & Tutorials</h2> |
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Access to the book:

- University of New Mexico Valencia Bookstore:
 - o <http://www.unm.edu/~unmvc/Bookstore/Bookstore.htm>
- Library System:
 - o University of New Mexico Valencia Campus Library:
 - <http://www.unm.edu/~unmvclib/>
 - There will be one copy on reserve. You will need to check it out at the front desk. It will only be available for 2-hour checkout, and cannot ever leave the library.
- Purchase Online:

If you plan on purchasing this book online, you need to do so immediately. We will start using it right away! A couple of sources for purchase online are:

 - Amazon.com: www.amazon.com - some new, some used
 - Half.com: www.half.ebay.com - discounted prices for used books!

Open Studio Time – Digital Media Arts Open Lab & Darkroom:

- Located in Room 123A in the Business & Technology Building (directly in front of the current B&T open computer lab Room 123). You will need to enter the lab through the current B&T computer lab and sign-in to use the computers.
- Monday through Thursday 8:00am to 8:00pm
- Friday 8:00 am to 2:00 pm

Other tutorials:

- I will post a number of links to video tutorials in Blackboard for this course.

Instructor Support:

- Please see “How to Contact the Instructor” for methods of contacting the instructor for help.

Community Support:

We will have a HELP FORUM discussion board in the Blackboard course. Use this as a place to post questions to the community. It is important for peer learning and peer communication to enhance our community.

Title IX Statement:

A Note About Sexual Violence and Sexual Misconduct: As a UNM faculty member, I am required to inform the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu) of any report I receive of gender discrimination which includes sexual harassment, sexual misconduct, and/or sexual violence. You can read the full campus policy regarding sexual misconduct at <https://policy.unm.edu/universitypolicies/2000/2740.html>. If you have experienced sexual violence or sexual misconduct, please ask a faculty or staff member for help or contact the [LoboRESPECT Advocacy Center](#).

Course Schedule

Spring 2018:

Semester begins January 14

Semester ends May 11

HOLIDAYS:

Spring Break: March 11-18

| Dates | Schedule All dates and projects tentative |
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| <u>Week 1</u> | <ul style="list-style-type: none">• Introductions• Review Syllabus• Review Learn.unm.edu• Introduction to UE4 and programming fundamentals |
| <u>Week 2</u> | <ul style="list-style-type: none">• Finish player HP system, create object pickup with spawn location. Add damage hazard through game mode. Fundamental review (variables, functions, classes, objects). |
| <u>Week 3</u> | <ul style="list-style-type: none">• Properly set up player input. Create a double jump• Project 1 |
| <u>Week 4</u> | <ul style="list-style-type: none">• Communication between blueprint classes. Casting, interfaces, and avoiding corruption• Project 2 |
| <u>Week 5</u> | <ul style="list-style-type: none">• Finish Project 2 |
| <u>Week 6</u> | <ul style="list-style-type: none">• Adding a 3rd person camera. Proper input setup, and switching between cameras.• Project 3 |
| <u>Week 7</u> | <ul style="list-style-type: none">• Breaking into the User interface |
| <u>Week 8</u> | – MIDTERM EXAM – |
| <u>Week 9</u> | <ul style="list-style-type: none">• More UI Scripting |
| <u>Week 10</u> | <ul style="list-style-type: none">• Spawning dynamic objects. Intro to arrays and while loops |

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|----------------|--|
| <u>Week 11</u> | <ul style="list-style-type: none"> • Creating custom weapons |
| <u>Week 12</u> | <ul style="list-style-type: none"> • Project 4 |
| <u>Week 13</u> | <ul style="list-style-type: none"> • Simple enemy A.I. creation |
| <u>Week 14</u> | <ul style="list-style-type: none"> • Set up scoring/objective for level |
| <u>Week 15</u> | <ul style="list-style-type: none"> • Putting it all together/Final project |
| <u>Week 16</u> | <ul style="list-style-type: none"> • Postmortem • Final Project Presentations |

*Schedule is very tentative and could easily change depending on the classes needs