

GAME 160 : Game Engine Scripting

Section 501, CRN 68434

Fall 2020

Instructor: Ian Burch

E-Mail: ianburch@unm.edu

Office and Hours: Online on Zoom & Learn (TBD)

Course Goals:

Learn the core concepts of programming, such as conditionals, inputs, loops, as well as game specific concepts such as sprites, collision, and state-based AI. By the end of the semester, students will be able to program a feature-complete 2D game on their own.

Learning Objectives:

By the end of the course, students will understand and write code using:

- Conditional statements
- For and while loops
- Keyboard, mouse, and gamepad inputs
- Draw functions for both sprites, tiles, primitives, and GUIs
- Global, normal, or local variables, and when to use each
- Basic data structures like arrays and lists

Materials:

You *must* have:

- Internet Access, for Learn, Zoom, and Youtube.
- Gamemaker Studio 2 (<https://www.yoyogames.com/>)
- Notebook

- Optional: Gamepad, such as an Xbox 360 controller
- Optional: Github account for version control

Expectations:

Students are expected to conduct themselves in a professional and collegial manner. During Zoom meetings, be professional, appropriate, and mute when not speaking. When posting on discussion boards, be polite, concise, and avoid using internet slang. If you need an extension on an assignment, please email or message me before it is due.

Course Details:

The course will be broken into four units, each guiding through how to program a different game type; a space shooter, a platformer, a crafting survival game, and then a game of your choice. Each project will be graded on three things:

Required features will be core mechanics for each project. For example, in space shooter project, the player must be able to shoot, move, and take damage from enemies. These mandatory features are 60 points out of 100 of each project.

Presentations are exactly what they say. You'll be expected to post updates on how your game is coming, as well as a final presentation when each project is completed. These give 20 points of each project

Optional features are non-core mechanics that let you customize your game and get credit for it. For example, adding moving platforms to the platformer project will give an extra 10 points to your grade. These can give up to 30 points per project.

Project Schedule :

Weeks 1 - 3 - Space Shooter Project

A top-down space shooter, with waves of enemies, scores, and upgrades

- Variables
- Movement
- Timers
- Collision

Weeks 4 - 6: Platformer Project

A side-scrolling platformer like Mario, with jumping, falling, and NPCs

- Loops
- Finite-state machines
- Tilesets
- Dialogue

Weeks 7 - 10 : Crafting Game

A crafting and survival game like Don't Starve, to learn about inheritance and GUIs

- Inheritance
- GUIs / Menus
- Inventories

- Best Practices

Weeks 11 - 16 : Your Game!

- Design and program your own game using the techniques from the rest of the semester!
- Recommended styles: Top-down, platformer, or fighting game

Grade Breakdown:

Space Shooter	20%
Platformer	20%
Crafting	20%
Final Project	30%
Participation & Activity	10%

Letter grades will be given as follows, with + or - given for the highest and lowest 3% in each range, respectively:

90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
0% - 59%	F

Late Work / Absences:

Homework past the due date will not be accepted without an emailed or written request prior to the deadline. If you're going to miss a zoom meeting, please let me know in advance.

Disability Statement:

In accordance with University Policy 2310 and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. It is imperative that you take the initiative to bring such needs to the instructor's attention, as I am not legally permitted to inquire. Students who may require assistance in emergency evacuations should contact the instructor as to the most appropriate procedures to follow. Contact Accessibility Resource Center at 277-3506 or arc.unm.edu for additional information.

If you need an accommodation based on how course requirements interact with the impact of a disability, you should contact me to arrange an appointment as soon as possible. At the

appointment, we can discuss the course format and requirements, anticipate the need for adjustments and explore potential accommodations. I rely on the Disability Services Office for assistance in developing strategies and verifying accommodation needs. If you have not previously contacted them I encourage you to do so.

Academic Integrity:

Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or otherwise fails to meet the standards. Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course.

Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.

Credit-hour Statement:

This is a three credit-hour course. Class meets for two 75-minute sessions of direct instruction for fifteen weeks during the Fall 2020 semester. Students are expected to complete a *minimum* of six hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week.

Title IX :

In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered “responsible employees” by the Department of Education (see pg 15 - <http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf>). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). For more information on the campus policy regarding sexual misconduct, see:

<https://policy.unm.edu/university-policies/2000/2740.html>

Citizenship and/or Immigration Status: All students are welcome in this class regardless of citizenship, residency, or immigration status. Your professor will respect your privacy if you choose to disclose your status. As for all students in the class, family emergency-related absences are normally excused with reasonable notice to the professor, as noted in the

attendance guidelines above. UNM as an institution has made a core commitment to the success of all our students, including members of our undocumented community. The Administration's welcome is found on our website: <http://undocumented.unm.edu/>.