# CREATING MOBILE GAMES (CMG)

| | |
|---|---|
| **COURSE NUMBER:** DIG2632<br>**SEMESTER/YEAR:** FALL 2018 | **CREDIT HOURS:** 3.0<br>**CLASS LOCATION:** PICT 205<br>**CLASS MEETING TIME(S):** TUE 11:45 AM-1:40 PM,<br>THURSDAY 12:50 PM-1:40PM, FINAL EXAM THURSDAY<br>DECEMBER 13 12:50 PM-1:40PM |
| **INSTRUCTOR:** Nick Heitzman<br>**CONTACT PHONE:** (352) 294-2000 | **OFFICE LOCATION/HOURS:** ROOM 116 NORMAN GYM<br>BLDG/TUESDAY 3:00-4:00 PM<br>**CONTACT EMAIL:** Contact via Canvas Inbox<br>**COURSE WEBSITE:** ELEARNING.UFL.EDU |

**COURSE DESCRIPTION**

This is an introductory course on designing your own game with simple drag and drop programming and basic asset creation. Unity 5 is user-friendly, and you will create dynamic arcade-style platformer video games while learning essential principles of game design and the development process.

**PREREQUISITE KNOWLEDGE AND SKILLS:** None

---

**PURPOSE OF COURSE**

This course focuses on providing students with a solid foundation in the technical skills needed to be successful in the emerging field of mobile game application design and development. Students will gain a strong knowledge of multiplatform mobile games and tools.

**COURSE GOALS AND/OR OBJECTIVES:** By the end of this course, students will be able to:
1. Understand the general work-flow for creating mobile games using industry standard software.
2. Define scope for their game by creating a Game Design Document.
3. Understand the various types of tools involved in designing a mobile game.

**COURSE SCHEDULE:**

The FINAL EXAM TIME SCHEDULED FOR THIS COURSE will be announced in advance of each semester by the University of Florida Registrar's Office at http://www.registrar.ufl.edu/soc/
**Final Presentation Date: DECEMBER 13 2018**

| Week | Topics | Assignments/Quizzes |
|---|---|---|
| 1 | Course Objectives and Overview<br>Creating a Simple 2D Platformer<br>• Class Introduction<br>• Syllabus review<br>• Pipeline Process and Flow<br>• 2D Platform Games | **Assignment 1:**<br>Review Three<br>Platformer Games |

| | | |
|---|---|---|
| 2 | Creating a Simple 2D Platformer<br>• Game Design Document Overview<br>• Sandbox Game Specifications Review<br>• Review Industry GDD's<br>• Milestones and Scope<br>• Assignment GDD discussion and class exercise | **Assignment 2:**<br>Simple Game Design Document |
| 3 | Introduction to Unity 5<br>• Basic GUI Overview<br>• Project/Hierarchy/Inspector<br>• Sorting Layer basics<br>• Image Formats<br>• Creating/Importing Assets<br>• Prefabs<br>• Color Tints/Transparency/Translucency<br>• Lighting process basics<br>• Background/Midground/Foreground<br>• Order in Sorting Layer<br>• Tags and Layers<br>• Platforms and Surfaces<br>• Naming Conventions<br>• Basic Design Rules | **Assignment 3:**<br>Screenshot of Unity Game Window displaying in class scene creation exercise |
| 4 | Animated Sprites and Unity Animation<br>• Animated Pick-up/Power-up<br>• Character Animation Basics<br>• Character Animation Lists<br>• Class Exercise Animating Sprites | **Assignment 4:**<br>Custom animated pick-up and character walk sprites |
| 5 | Designer Level Maps<br>• Level Concept Map Overview<br>• Map Making Process and Workflow<br>• Photoshop for Map Making Review<br>• Design Rules; Color, Pattern, Shape<br>• No Tablet Techniques | **In Class Exercise**<br>In class map making exercise |
| 6 | Level Map Use in the Pipeline<br>• Map integration into Unity locked layer<br>• Map as a template for level creation<br>• Gameplay and aesthetic polish process | **Assignment 5:**<br>Design your own rough platform level map concept |

| 7 | Basic Gameplay Features<br>• Visual Studio and Script Anatomy<br>• Player Movement<br>• Physics and 2D Collision Basics<br>• Player jump and gravity<br>• Player Camera Overview | **In Class Exercise**<br>In class exercise assembling various prefabs |
|---|---|---|
| 8 | Gameplay Features Continued<br>• Player Scripts and Rigidbody 2D<br>• Camera Follows Player<br>• Enemies and Hazards<br>• Damage and Death<br>• Start and End Level | **Assignment 6:**<br>Screenshot of current game progress showing gameplay elements |
| 9 | Sandbox Project Overview<br>• Placeholder Sprites Review<br>• Provided Scripts Review<br>• Replacing Sandbox with Custom Asset Exercises | **In Class Exercise**<br>In class exercise converting sandbox assets to custom variants |
| 10 | Special Effects<br>• Layer Manipulation and 3D Location Techniques<br>• Parallax Scrolling<br>• Game Lighting<br>• Point, Directional, and Spot Lights | **Assignment 7:**<br>Game screenshot showing scene lighting |
| 11 | User Interface Overview<br>• Unity Canvas System<br>• Buttons<br>• Custom Fonts<br>• Score and High Score<br>• Collectable Counting<br>• Data Management | **Assignment 8:**<br>Game screenshot displaying Unity Canvas UI elements with custom font |
| 12 | Splash Screens<br>• Team, Publisher, Game Splash Overview<br>• Game Splash Development<br>• Animations in Splash Screens | **Assignment 9:**<br>Create a custom splash screen for your game |
| 13 | Game Audio and Gameplay Review<br>• Adding Music to Game Scenes<br>• Adding SFX to Gameplay Elements<br>• Review Current Game State; Rescoping | **In Class Exercise**<br>Add music track to level; review state of game in relation to Final in two weeks |

| 14 | Game Debugging and Testing | **In Class Exercise** |
|---|---|---|
|  | • Unity Console Warnings and Errors<br>• Gameplay testing and evaluation<br>• Scope adjustments as needed | Debug game and test gameplay in preparation for Final |
| 15 | Game Review and Post-mortem | **Assignment 10:** |
|  | • Games Playable and Working as Intended<br>• Build Game for Canvas Submission and Grade<br>• Complete Simple Post-mortem Document and Submit | FINAL game build and APK submitted to Canvas also short post-mortem document completed |

## REQUIRED TEXTBOOKS AND SOFTWARE:

- Unity 5 2017.4 or higher DOWNLOAD
- Adobe Photoshop CS6/CC

## RECOMMENDED MATERIALS:

- Lynda.com, Online tutorial *(FREE access for UF students)*
- Official Unity Community https://unity3d.com/community
- Digital Graphic Drawing Tablet with Pen (Photoshop compatible)

## COURSE FEES:

Course fees are assessed for certain courses to offset the cost of materials or supply items consumed in the course of instruction. A list of approved courses and fees is published in the Schedule of Courses each semester. (UF-3.0374 Regulations of the University of Florida).

Material and supply and equipment use fee information is available from the academic departments or from the schedule of courses (Florida Statutes 1009.24). The total course fee for this class is $4.90

The total course fee for each course is listed on the UF Schedule of Courses.
(https://registrar.ufl.edu/soc/).

## EVALUATION OF GRADES

| Assignment | Total Points | Percentage of Grade |
|---|---|---|
| **Participation** – Synchronous students are expected to participate in class discussions. Asynchronous students are welcome to actively participate in class discussions. Both synchronous and asynchronous students are expected to participate in online forums outside class meetings. | 100 | 10% |
| **Assignments** – Assignments are due the first session of each week unless otherwise noted.  The work will be uploaded to | 500 | 55% |

| | | |
|---|---|---|
| CANVAS prior to the beginning of class otherwise the work will be considered late. | | |
| **Final Project** – Final Project is the final result of the semester long effort in learning. It is expected that in this final project, students employ the principles and techniques they have learned during the semester. | 100 | 35% |

## GRADING SCALE:

| Letter Grade | % Equivalency | GPA Equivalency |
|---|---|---|
| A | 94 – 100% | 4.0 |
| A- | 90 – 93% | 3.67 |
| B+ | 87 – 89% | 3.33 |
| B | 84 – 86% | 3.00 |
| B- | 80 – 83% | 2.67 |
| C+ | 77 – 79% | 2.33 |
| C | 74 – 76% | 2.00 |
| C- | 70 – 73% | 1.67 |
| D+ | 67 – 69% | 1.33 |
| D | 64 – 66% | 1.00 |
| D- | 60 – 63% | .67 |
| E, I, NG, S-U, WF | 0 – 59% | 0.00 |

More information on grades and grading policies is here:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

## COURSE POLICIES:

**PARTICIPATION / ATTENDANCE POLICY**
We value participation more than mere attendance. Each Instructor is responsible for communicating the specific details of what percentage of your grade (if any) will be assigned to participation, and how class participation will be measured and graded.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

In our course, attendance for synchronous students is mandatory. Students are allowed **three unexcused absences**. If you miss more than **three classes** during the semester, each additional absence will lower your overall grade by **100 points**. If you miss more than **six classes**, you will fail the course. Exempt from this policy are only those absences involving university-sponsored events, such as

athletics and band, and religious holidays, family emergencies, and health issues for which **you must provide appropriate documentation in advance of the absence**.

Additionally, tardiness will not be tolerated. If you are tardy for three class periods, you will receive an unexcused absence.

**MAKE-UP POLICY**
Presentations may not be presented late. Documented emergencies or medical situations may be the only accepted reasons for an excused absence on the day of a presentation.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

**COURSE COMMUNICATIONS**
Students can communicate directly with the Instructor regarding the course material through the course management system (CANVAS).

*Electronic communication outside class meetings is welcome, however unless absolutely urgent, will be responded to M-F from 9 AM to 5 PM.*

Your e-mails should display the following:

- Subject Line
- Core issue explained in a concise manner
- Any problem solving attempted prior to sending the email, along with your results

I reserve the right to ignore (and, depending on the situation, report) inconsiderate, colloquial, rude, accusatory, and poorly edited e-mails.

I will not discuss the following over e-mail:

- Grade Disputes
- Edit/provide feedback on papers
- Policy disputes (refer to the course syllabus)

**NOTE ON INSTRUCTION**
The course incorporates lecture, in-class exercises, and assignments to apply and reinforce skills learned. Additionally, students will be asked to participate in homework expanding on in-class lessons to strengthen their skills.  Individual assignments will be explained in detail as the course progresses.

## UF POLICIES:

### UNIVERSITY HONESTY POLICY

UF students are bound by The Honor Pledge that states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### CLASS DEMEANOR

Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones and restrict eating to outside of the classroom. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all.

### STUDENTS REQUIRING ACCOMMODATIONS

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

### NETIQUETTE COMMUNICATION COURTESY

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats, more information can be found at: http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf

### ONLINE COURSE EVALUATIONS

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

## CAMPUS RESOURCES

### HEALTH AND WELLNESS

**U Matter, We Care**

If you or a friend is in distress, please contact umatter@ufl.edu or 352 392- 1575 so that a team member can reach out to the student.

DIG2632 – CREATING MOBILE GAMES (CMG)

Counseling and Wellness Center
http://www.counseling.ufl.edu/cwc/Default.aspx, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department, 392-1111 (or 9-1-1 for emergencies). http://www.police.ufl.edu/

## ACADEMIC RESOURCES

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. http://www.crc.ufl.edu/

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. http://teachingcenter.ufl.edu/

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. http://writing.ufl.edu/writing-studio/

Student Complaints Campus:
https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

On-Line Students Complaints:
 http://www.distance.ufl.edu/student-complaint-process

*Disclaimer: This syllabus represents the instructor's current plans and objectives.  As we go through the semester, those plans may need to change to enhance the class learning opportunity.  Such changes, communicated clearly, are not unusual and should be expected.*