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Office Hours: Tuesday 1 PM – 2 PM

DIG3878 GAME SYSTEM DEV 2

Spring 2026

Course Meetings: On-campus MON Period 7 & WED period 7-8
Course Modality: On-campus Section

Course Description

This course will cover fundamental principles of game engine programming such as basic collision detection, input detection, instantiate, destroy game objects, and others. The student will also learn how to use game engines to develop various applications such as personal computer (PC) and mobile games, augmented/virtual reality projects, and others.

Course Prerequisites

Digital Arts and Sciences BA major (DAR_BA) & (DIG 3873(C) or COP 3502(C))

Learning Outcomes

By the end of this course, students will be able to:

- Practice working with a game engine interface and features
- Apply the basics of game engine scripting to a game development project
- Develop mini game on PC and mobile platform
- Apply Unity game engine to develop emerging directions including immersive technology application.

Materials & Books

Required

- NA

Supplemental

- https://learn.unity.com

Technology Requirements

- Personal Laptop/Computer.

Course Schedule

This schedule is only a guide and is subject to change. Unless otherwise indicated, assignments and readings are due the day they are listed on the syllabus, not the following day.

Week	Subject	Assignment Quizzes	Assignments Due
1	**Weekly Topics:** Class Introduction (Syllabus, Game Engine, Netlify) Interface, RigidBodies, Collision Detection, Prefabs, Input, Destroy-vs-SetActive.	**In-Class Exercise 1**	**In Class (due by end of Wednesday class period)**
2	**Weekly Topics:** Instantiate, Translate and Force Movement, Simple Timer.	**In-Class Exercise 2**	**In Class (due by end of Wednesday class period)**
3	**Weekly Topics:** Materials, Audio, Name-vs-Tag, Trigger Collision, Button & User Interface (Button, Image, etc)	**Challenge 1**	**Friday 11PM**
4	**Weekly Topics:** Adding Components, Following Object, Score.	**In-Class Exercise 3**	**In Class (due by end of Wednesday class period)**
5	**Weekly Topics:** WaitForSeconds, Finding Distance, Switching Scenes, PostProcessing.	**Challenge 2**	**Friday 11PM**
6	**Workshop 1:** 3rd Person Game: Development Example 1 Assemble provided assets (character, environment, scripts) to create a playable adventure game under instructor guidance.	**In-Class Exercise 4**	**In Class (due by end of Wednesday class period)**
7	**Workshop 2:** 1st Person Game: Development Example 2 Implement first-person camera, player movement, and interaction systems using provided assets to develop a playable prototype under instructor guidance.	**Midterm Test**	**Friday 11PM**
8	**Weekly Topics:** Marker-based Augmented Reality and Depth Perception.	**In-Class Exercise 5**	**In Class (due by end of Wednesday class period)**
9	**Final Project Kick Off:** Game development team building: Students form teams, consult with the instructor about their final project game, and then deliver a team presentation.	**Team Presentation**	**In Class (due by end of Wednesday class period)**
10	SPRING BREAK		
11	**Project Development:** Game Development Pipeline and Game Assets Preparation	**Team-Instructor Weekly Meeting**	**In Class (due by end of Wednesday class period)**

12	**Project Development:** Core Mechanic, Level Design, Test & debugging	**Check Point 1**-ALPHA	**In Class (due by end of Wednesday class period)**
13	**Project Development:** Game Interaction, Level Design, User Interface	**Team-Instructor Weekly Meeting**	**In Class (due by end of Wednesday class period)**
14	**Project Development:** Test & Debugging, Final Polish	**Check Point 2**-BETA	**In Class (due by end of Wednesday class period)**
15	**Release Candidate Presentation:** Each team will present their game, including an introduction, an explanation of the game's mechanics and features, and a live demo.	**Team Presentation**	**In Class**

Grading Criteria

Assignment / Assessment	Total Points	% of Grade
Class Attendance - Students enrolled in on-campus sections are required to attend class on time, as attendance will be taken at the beginning of each session. For online sections, attendance is determined by completion of the weekly discussion forum posts. *Note:* Attendance also follows the course attendance policy. Excessive unexcused absences may result in grade deductions or course failure as outlined below.	5	5%
In Class Participations - Active participation is essential — students will take part in five "in-class exercises" that examine their understanding of key topics. Online students will complete similar exercises throughout the week. (2 pts each)	10	10%
Challenge Assignments - There will be two take home "challenges" to assess students' proficiency and mastery in specific course concepts. (10 pts each)	20	20%
Midterm Project - Students are expected to individually develop a mini-game highlighting the concepts learned in the course.	25	25%
Final Project **Check Points** - Each final project team will have two checkpoints where a representative presents their progress and receives feedback. (5 pts each)	10	10%
Final Project - For the Final Project, students will collaborate in groups. Each group will design and build a game that showcases their skills and meets the requirements provided by the instructor.	30	30%

Grading Scale

Letter Grade	% Equivalency
A	94 – 100%

A-	90 – 93%
B+	87 – 89%
B	84 – 86%
B-	80 – 83%
C+	77 – 79%
C	74 – 76%
C-	70 – 73%
D+	67 – 69%
D	64 – 66%
D-	60 – 63%
E, I, NG, S-U, WF	0 – 59%

More information on grades and grading policies is here: https://catalog.ufl.edu/UGRD/academic-regulations/gradesgrading-policies/

Materials and Supply Fees

Material and supply and equipment use fee information are available from the academic departments or from the schedule of courses (Florida Statutes 1009.24). The total course fee for this class is $26.05. The total course fee for each course is listed on the UF Schedule of Courses. (https://registrar.ufl.edu/soc/)

Course Policies

Attendance Policy, Class Expectations, and Make-Up Policy

The 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. The UF Digital Worlds Institute is committed to the idea that regular student engagement is essential to successful scholastic achievement. No matter if the class is held in a traditional classroom, an online classroom, or a combination of the two, interaction with your peers and the instructor will empower you to greater achievement.

In our course, attendance 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 **10 points**. If you miss more than **six classes**, you will fail the course. Exempt from this policy are those absences outlined in the Excused and Unexcused Abscesses policy linked below.

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 Technology

The students will be required to have access to and use a personal computer with access to the Internet. Word editing software will be required for written assignments.

The University of Florida and Digital Worlds requires that students have access to and ongoing use of a laptop/mobile computer for DIG courses in order to be able to function in the current learning environment. Digital Worlds requires each DAS major's laptop computer to meet certain minimum specs for heavy graphics use, the requirements documented below must be met. https://digitalworlds.ufl.edu/programs/ba-in-digital-arts-sciences/technologyrequirements/.

Course Communications

Students can communicate directly with the instructor regarding the course material through the course management system (CANVAS) using "Canvas E-Mail".

Course Technology Support

UF Computing Help Desk

For support related to account services, technical consulting, mobile device services, software services, administrative support, application support center, and learning support services, please contact the UF Computing Help Desk available 24 hours a day, 7 days a week at 352-392-4357 or helpdesk@ufl.edu.

University Policies

Information about university-wide policies and resources can be found here: https://syllabus.ufl.edu/syllabus-policy/ufsyllabus-policy-links/

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.