

GAME DEVELOPMENT

COURSE NUMBER: DIG4715C	CREDIT HOURS:
SEMESTER/YEAR: SPRING 2018	CLASS LOCATION:
	CLASS MEETING TIME(S): MONDAY (1:55 - 2:45 PM), WEDNESDAY (1:55 - 3:50 PM)
INSTRUCTOR: Marko Suvajdžić	OFFICE LOCATION/HOURS: MONDAY (12:50 - 1:40 PM)
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CONTACT PHONE: (352) 294-2000	COURSE WEBSITE: https://ufl.instructure.com/courses/347788

COURSE DESCRIPTION

Game Development aims to equip the students with the basic technical knowledge and skills required to operate the Unity3D game engine. The course reviews the key engine features, their principles and practical application. The course is both theoretical and practical in nature, it heavily focuses on hands-on projects throughout the semester. Students will learn to work with various tools provided with the Unity3D game engine, within multiple disciplines (2D and 3D art, programming, animation, UI, VFX etc) in order to build up a general understanding of the application of a game engine within a game development process. Emphasis is placed on strong foundation skills and self-motivated problem solving. Through a carefully crafted set of assignments, the course simulates the working conditions in video game production.

Online recordings:

Password:

PREREQUISITE KNOWLEDGE AND SKILLS

Game Design Practices (GDP3713) or Written Consent of Instructor

PURPOSE OF COURSE

The purpose of this course is to teach the students the basic skills necessary to operate the Unity3D game engine.

COURSE GOALS AND/OR OBJECTIVES:

At the end of the course, students should be able to:

- Navigate the Unity3D editor menus and windows.
- Create and edit scenes and projects.
- Create and manipulate game objects.
- Organize the project structure.

DIG4715C– GAME DEVELOPMENT

- Create and modify materials.
- Create and modify cameras.
- Create and modify light sources.
- Create basic keyframe and curve animations.
- Create and modify particle systems.
- Use the UI system.
- Implement physics elements (colliders, Rigidbody).
- Create basic scripts.
- Use the Terrain tool to create environments.
- Implement audio elements into the project.
- Design game levels and implement basic game mechanics.
- Build standalone applications.
- Render concept art per assigned brief.
- Render basic environment art.
- Critically analyze the construction of digital games from various game development disciplines' perspectives.

COURSE SCHEDULE:

THERE IS NO FINAL EXAM IN THIS CLASS. INSTEAD, THERE WILL BE A FINAL PROJECT IN LIEU OF THE FINAL EXAM. THE FINAL PROJECT IS DUE ON THE DATE/TIME OF A SCHEDULED FINAL EXAM.

Week	Topic	Assignments
1	Course introduction; course structure presentation; course project demonstration.	
2	Unity editor interface, game object creation and modification; basic 3D object properties.	
3	Creating and modifying materials; play mode; camera and its parameters; scene design; implementation of basic game mechanics.	Assignment 1: "Maze 1.0" Designing an alpha version of a 3D maze game with one level according to in-class specification, building it as a standalone application.
4	Basic game object modification tools; basics of prefab creation. Project Review.	
5	Creation of complex 3D objects; parenting and nesting game objects; Unity physics; physics components (Rigidbody, colliders, joints); using the inspector;	
6	Scripting in Unity (creating script files, variables, voids); creation and implementation of script files.	Assignment 2: "Marble Platformer 1.0" Designing one level for an alpha version of a 3D platformer game according to in-class specifications, building it as a standalone application.
7	Scripting in Unity (creating scripts for various game mechanics); creating simple start and end screens; designing additional game levels; creating and modifying light sources; scene design. Project Review.	

8	<p>Additional level design; project testing and modification.</p> <p>Project Review.</p>	<p>Assignment 3: "Maze 1.1" Submitting the "Maze" project corrected according to project review; "Marble Platformer 2.0" Designing an additional "Start" and "End" screen for the "Marble Platformer" project; implementing lights into the scene design, making changes according to project review; building the project as a standalone application.</p>
9	<p>Using the terrain tool; basic animation principles in unity; creating looping and triggered animations.</p> <p>Project Review.</p>	
10	<p>Game audio systems - implementation of sounds and music into the project; Unity UI system, UI element implementation.</p>	<p>Assignment 4: "Alien Terrain 1.0" Designing a level for a 3D game according to in-class specifications; implementing the terrain tool, animations, in game UI elements; implementing sound and music into the project; building the project as a standalone application.</p>
11	<p>Project build settings; building for different platforms; particle systems: implementation and modification.</p> <p>Project Review.</p>	
12	<p>Adding additional gameplay features into the current project; game testing and iteration.</p> <p>Project Review.</p>	<p>Assignment 5 "Alien Terrain 2.0" Adding additional UI and VFX elements according to in-class specifications; building the project as a standalone application.</p>
13	<p>2D project specific features in Unity; importing, handling and exporting assets;</p> <p>Project Review.</p>	

<p>14</p>	<p>2D physics; sprite editor.</p> <p>Project Review.</p>	<p>Assignment 6</p> <p>"Alien Terrain 2.1" Submitting the "Alien Terrain" project corrected according to project review.</p> <p>"Space Shooter 1.0" Designing a 2D endless space shooter game according to assignment specifications. Building the project as a standalone application.</p>
<p>15</p>	<p>Specifics of mobile game design, building for mobile. Final project overview.</p> <p>Project Review.</p>	<p>Final Project:</p> <p>"Maze 2.0" Submitting the "Maze" project with implemented game music, "Start" and "End" screen.</p> <p>"Marble Platformer 3.0" Submitting the "Marble Platformer" project with implemented game sound and music, "Start" and "End" screens, in game particle effects.</p> <p>"Alien Terrain 3.0" Submitting the "Alien Terrain" project with additional sound and visual effects according to the student's preference.</p> <p>"Space Shooter 1.1" Submitting the "Space Shooter" project corrected according to the project review.</p>

REQUIRED TEXTBOOKS, HARDWARE AND SOFTWARE:

1. Unity 2017.2.0 (personal, plus or pro license). *Must not be previous or later version.*

RECOMMENDED MATERIALS:

1. <https://unity3d.com/learn/tutorials>
2. <https://docs.unity3d.com/Manual/index.html>
3. <https://docs.unity3d.com/ScriptReference/index.html>
4. <https://support.unity3d.com/hc/en-us>
5. <https://unity3d.com/learn/live-training>
6. <https://unity3d.com/learn/resources>
7. <https://answers.unity.com/index.html>

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 \$54.26

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
"Maze 1.0"	100	10%
"Marble Platformer 1.0"	100	10%
"Maze 1.1" and "Marble Platformer 2.0"	100	10%
"Alien Terrain 1.0"	100	10%
"Alien Terrain 2.0"	100	10%
"Alien Terrain 2.1" and "Space Shooter 1.0"	100	10%
Final Project: "Maze 2.0", "Marble Platformer 3.0", "Alien Terrain 3.0", "Space Shooter 1.1"	200	20%
Participation – Students are expected to actively participate in class discussions. Participation will be measured by attendance for on campus students, and weekly graded discussion replies for all other students.	100	10%

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		0.00

More information on grades and grading policies is here:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

COURSE POLICIES:**PARTICIPATION / ATTENDANCE**

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. Real Time [RT] interaction with your peers and the Instructor will empower you to greater achievement.

In our course, attendance for On-Campus and RT On-Line students is mandatory. The attendance grade makes up 10% of the overall grade (100 points maximum), and is measured as a percentage of the overall number of individual classes the student had attended (100 points for attendance on all classes). 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.**

For the YOT On-Line students, the attendance is graded by weekly mandatory discussion assignments, all of which have an equal number of points per assignment, up to a maximum total of 100 points.

MAKE-UP POLICY

Unless discussed at least 72 hours in advance of the deadline, assignments submitted past the deadline will not be accepted. Excluded from this policy are any assignments missed due to medical emergencies. In case of any other issues preventing the students from submitting the assignments, an email message explaining the aforementioned issues, as well as additional documentation need to be sent prior to the deadline. The deadline extensions will be decided on a per situation basis.

All projects must be submitted on time. Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence as outlined under UF attendance policy: <https://catalog.ufl.edu/ugrad/1617/regulations/info/attendance.aspx>

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 the access to the Internet. Word editing software will be required for written assignments.

COURSE COMMUNICATIONS

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

VIDEO LECTURE CAPTURE

High-quality video lecture capture of this course is available only for enrolled students. These video captures are edited and posted within 24-48 hours of the class meeting for the benefit of the Your Own Time [YOT] students and to offer the potential for review by on-campus and Real Time [RT] online students. For the on-campus and RT students, watching lectures in lieu of attending and participating in class is NOT acceptable.

Your Instructor will provide you with this semester's login information during the first week of class. It is not permissible to share or distribute video login information to anyone other than officially enrolled students of this course. Lecture videos can be found at <https://vimeo.com/digitalworlds>.

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](#). 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 [evaluation 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.

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.