GAME DESIGN PRACTICE 2 (GDP2)

COURSE NUMBER: DIG4715C	CREDIT HOURS: 3.0
SEMESTER/YEAR: SPRING 2017	CLASS LOCATION: ORC, NORMAN (NRG) 0120
Instructor: SEUNGHYUK JANG	**Contact phone:** 352-294-2000
COURSE TA: Naman Rajpal	**OFFICE HOURS:** T R F - 12PM TO 2:30PM
CONTACT EMAIL: namanrajpal16@ufl.edu	**COURSE WEBSITE:** http://elearning.ufl.edu
Sec. 053C meets Mon - Period 5 – 6, Weds - Period 6	*Sec. 2B76 meets Tues - Period 7 and Thurs - Period 7 - 8*

COURSE COMMUNICATIONS: Students can communicate directly with the instructor regarding the course material in-class or through CANVAS. Students are also encouraged to post general questions to the discussion board through CANVAS, the course management system.

REQUIRED SOFTWARE AND TOOLS:
- Unity 3D
- Autodesk Maya 2017 (Educational version is free for students) DOWNLOAD
- Adobe Photoshop CS6/CC
- Adobe After Effects CS6/CC
- Webcam setup (ONLINE students only)
- Two-monitor setup for software instruction (ONLINE students only)
- Edited lectures will be available for your viewing within 24-48 hours after the end of the each of class meetings on Mon and Wed (ONLINE students only)

REQUIRED TEXTS AND RECOMMENDED ADDITIONAL ONLINE RESOURCES:
- "Introduction to Game Design, Prototyping, and Development: From Concept to Playable Game with Unity and C#". by Jeremy Gibson Bond (2014)
- Unity Manual (https://docs.unity3d.com/Manual/index.html)
- Lynda.com, Online tutorial *(FREE access for UF students)*

COURSE DESCRIPTION:
An introduction to video game development using the Unity3D game engine. In this project-driven course, students will learn the cross-platform game engine Unity3D and develop a series of game projects. Students are expected to demonstrate the techniques taught in class through their projects.
This class is very labor intensive and the projects assigned will take considerable time to complete. Students must plan for adequate time required outside the classroom to learn the tools properly and to complete the assignments. It is not possible to make adequate progress in this class without completing the assignments.

Unity is a game development ecosystem: a powerful rendering engine fully integrated with a complete set of intuitive tools and rapid workflows to create interactive 3D and 2D content; easy multiplatform publishing; thousands of quality, ready-made assets in the Asset Store and a knowledge sharing community - (Unity 3D site)

PREREQUISITE COURSE: Game Design Practice 1 (DIG3713C)

PREREQUISITE KNOWLEDGE AND SKILLS: Autodesk Maya 2016, Adobe Photoshop

COURSE GOALS AND/OR OBJECTIVES: By the end of this course, students will be able to:

1. Understand and articulate the foundations of game development as they are accepted within the game industry.
2. Communicate an understanding of specific kinds of process frameworks for game design like rapid prototyping, agile development and personal software process (PSP).
3. Create a functional game prototype using Unity 3D.

COURSE SCHEDULE:

The course incorporates lecture, in-class exercises and assignments to apply and reinforce skills learned. Individual assignments will be explained in detail as the course progresses.

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.isis.ufl.edu

COURSE FEES:

Material and supply 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 course fee for this class is $42.26

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READINGS:

The course curriculum consists of readings associated to the weekly topics. Students are required to read manual and book topics during the week and as instructed during the class. More specific topics to read will be provided on canvas on a weekly basis for students to prepare effectively for assignments and quizzes.

Week	Class Topics + Objectives	Readings	Submissions (after the week)
1	• Course Objectives • Overview of course and objectives • Reviews: Fundamentals of Game Design • Reviews: Overall plan for the semester • Introduction to Unity as a tool. • Resources / Class Survey		
2	Introduction to Unity 3D : **Editor basics** • Understanding the GUI and basic controls. • Project Structure • Game Objects and Components • Using Built-in Components	**Book: Chapter 16** **Manual :** Introduction	**Assignment 1**: Download and Install the Unity. Creating GameObjects.
3	Basics of creating **Scenes** • Understanding Scenes, Tags and Layers • Importing Assets from Maya • Understanding Prefabs and GameObjects. • Unity Camera, Lighting and Terrains	**Book : Chapter 16** **Manual:** Scenes	**Assignment 2**: Working with Basic Shapes
4	Introduction to **Scripting** in Unity3D • Classes, Variables and Monobehaviour • Using MonoDevelop for scripting and debugging. • Understanding loops and Arrays • Using Functions and coroutines	**Book: Chapter 17, 18, 21, 23, 24**	**Assignment 3:** Scripting assignment. Making GameObjects move.
5	More concepts on **Scripting** • Understanding Objects Oriented Programming • Tracking User Input • Using available Unity Docs VR (Virtual Reality) in Unity	**Book:** **Chapter 25, 26.**	**Assignment 4:** Scripting assignment. Keyboard Input Controller. **Quiz 1: week 1 to 5**
6	Introduction to **Physics** in Unity3D • Colliders, Triggers, Rigidbodies and Joints. • 2D Physics • Understanding physics related functions • Using Velocity and Force	**Manual:** Physics	**Assignment 5:** Implementing physics for a 3D platformer. **Midterm project submission**
7	Introduction to **Dynamic UI** in Unity3D • Understanding Canvas • UI components • Manipulating UI	**Manual :** Unity's new UI	**Final Project Proposal**

8	Creating a mobile game **& Proposal feedback**. • Importing and structuring assets • Implementing User Input • Implementing Physics and UI • Building and Testing on a device.		**Assignment 6:** Finish the Game with two added features.
9	Understanding **Animation** in Unity3D: Mecanim • Animation Controller and State Machines • Humanoid Avatars and Blend trees. • Importing animations.	**Manual:** Animation in Unity	**Assignment 7:** Implementing menu UI with animation. **Re-submission of project proposals**
10	Introduction to **Standard Assets & Animation(continued)** • Asset Store and Plugins • Using Standard Assets • Controlling animation from scripts.		**Assignment 8:** Implementing First Person Character Controller.
11	**Scripting** techniques • Singletons • Events and Delegates • Audio Manipulation • Platforms and Player settings.	**Manual:** Audio in Unity	**Quiz 2: week 5 to 10**
12	**Lighting, Materials and Shaders** in Unity • Built-in Shaders. • Skyboxes. • Particle Systems • Cinematic Effects.	**Manual:** Graphics Overview	**Assignment 9:** Adding Audio to Game build in previous assignments.
13	**Mobile and Touch** • Multi Touch • Pinch to zoom • Drag input • Accelerometer input	**Manual:** Mobile Input	**Assignment 10:** Adding touch controls to game build in previous assignments.
14	**Navigation and AI** in Unity • NavMesh Agents • NavMesh Obstacles • NavMesh Baking	**Manual:** Navigation	**Final Project Progress Report(GDD)**
15	Final Project Progress Review • In-class Demo. • Peer Evaluation.		**Quiz 3: week 10 to 15**

EVALUATION OF GRADES

Assignment	Points	% of Grade
Class Attendance and Participation – Students are expected to actively participate in class discussions, both in class as well as in online forums. Each student will be required to post a weekly critique of their classmates' work on CANVAS. (**Peer Reviews will be included here**)	100	10%

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10 Weekly Assignments – Weekly assignments are due the first session of each week after the week it was given. The work will be uploaded to CANVAS prior to the beginning of class otherwise it will be considered late.	250 (25 points each)	25%
3 In-class Quizzes – There will be three in-class quizzes based on the topics taught during the previous weeks as specified. Instructor will provide adequate information and reading material before quiz for preparation.	300	30%
Midterm Project – Midterm project should be a basic interactive Unity project involving concepts discussed during the previous classes.	100	10%
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.	250	25%

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:

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 will class participation be measured and graded.
(See Evaluation of Grades section for more detail)

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 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.

UF POLICIES:

ACADEMIC INTEGRITY:
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. "*   You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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*."   It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see:
http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php

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.

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UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES:
Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) 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.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT:
Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at http://www.dso.ufl.edu/students.php.

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/docs/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/.

GETTING HELP

For issues with technical difficulties for E-learning in Canvas, please contact the UF Help Desk at:
- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- https://lss.at.ufl.edu/help.shtml

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.
Other resources are available at http://www.distance.ufl.edu/getting-help for:
- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

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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.