

INTERDISCIPLINARY DESIGN METHODS

Course Number: DIG3506

Credit Hours: 3.0

Semester/Year: Spring 2016

Class location: ORC, Norman (nrg) 0120

Meeting Times

W 10:40-12:35

Instructor: Patrick Pagano

Office Hours: Thursday 11:00 ,Äì 12:00 pm

Course TA or Coordinator: TBD

Course Website: <http://lss.at.ufl.edu>

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:

UNITY3D

3 Button Mouse

Recommended Texts and online resources:

Unity 3D Game Development by Example Beginner's Guide

ISBN-10: 1849690545

ISBN-13: 978-1849690546

KINDLE and E-BOOKS are ALLOWED

Course Description:

This course provides students with a comprehensive overview of industry- and academy-standard design methods and processes. It teaches students a ,Äübig picture,Äù perspective on digital arts and sciences (DAS) design. As such, this course gives students an overview of interdisciplinary design practices from process-focused fields like interaction design, human-centered design, design research, and computer-supported collaborative work. Specific topics covered include the construction of interfaces and applications using iterative design practices like rapid prototyping, user testing, real-time research, conceptual

design, and agile development. Students use one of these design frameworks as they take a DAS design prototype through the design process from conceptualization to user-testing.

Edited lectures will be available for your viewing within 24-48 hours after the end of the each of class meetings on TUES and THURS.

Prerequisite Course:

Course Goals and/or Objectives: By the end of this course, students will be able to:

- 1.) BECOME FLUENT IN THE BASICS OF DESIGN WITH UNITY3D

- 2.) Identify and explain DAS design processes related to design and user-centered design

- 3.) Create conceptual design prototypes using UNITY3D

- 4.) Present Design Ideas for Production to groups

- 5.) Perform usability testing of software designs

Instructional methods: The course incorporates lecture, in-class exercises and assignments to apply and reinforce skills learned. Additionally, students will be asked to participate in weekly online critiques to strengthen their skills in analysis and critical thinking. Individual assignments will be explained in detail as the course progresses.

Course Schedule:

4. Applying Materials27m 45sCreating and organizing new materials8m 42sUsing composite maps for smoothness and height7m 48sAdjusting metallic and smoothness properties5m 31sCreating normal maps from grayscale5m 44s,Äã

Week

Class Topics + Objectives

Assignments + Project WORK

1

Course Objectives

Overview of course and objectives

History of UNITY
Foundational terms

Review the class lecture

ESSENTIAL UNITY CONCEPTS

1. Game Objects and Components
2. Prefabs - Concept & Usage
3. Tags
4. Layers

2

PROJECT SETUP

Setting Up the Project

Setting up the project overview

Importing standard packages

Creating a player controller

Setting the resolution and quality

USING THE UNITY INTERFACE

1. Interface Overview
2. The Scene View
3. The Game View

3

Review: Basics of UNITY3D

2. Importing and Managing Assets

Importing meshes

Importing textures

Importing animation

Importing audio

Exporting models from 3ds Max

Exporting models from Maya

1. The Hierarchy and Parent-Child relationships
2. The Project Panel and Importing
3. The Inspector
4. Build and Player Settings

5. Introduction to the Profiler

4

3. Setting Colliders and Creating Prefabs

- Generating colliders on geometry
- Applying and optimizing colliders
- Creating a prefab
- Creating and applying a custom mesh collider
- Updating geometry in a prefab
- Adding physics to game objects
- Adding audio clips to a prefab

FIRST PERSON SHOOTER TUTORIAL

4. Applying Materials

- Creating and organizing new materials
- Using composite maps for smoothness and height
- Adjusting metallic and smoothness properties
- Creating normal maps from grayscale

PHYSICS TUTORIAL

6

5. Creating and Implementing Animation

Segmenting imported animation into clips
Accessing animation using Mecanim
Creating event-driven transitions in Mecanim
Using scripts in Mecanim
Animating an object in Unity
Adjusting animation in the Curve Editor
Using the Dope Sheet to scale animation timing

SOUND TUTORIAL

7

02/17-02/19

LIVE TUTORIALS WORK

2D ROGUELIKE TUTORIAL

8

LIVE TUTORIALS WORK

TANKS TUTORIAL

9

NO CLASS: Spring Break

ROLL A BALL TUTORIAL

10

LIVE TUTORIALS WORK

PICK AN ANIMATION TUTORIAL

11

6. Designing and Constructing the Game Level

Instancing prefabs to build a level
Placing level prefabs for variety
Bounding the player through design
Creating and sculpting terrain
Painting terrain materials and textures
Adding trees and grasses to terrain

STUDENT SELECTION

CHOOSE ANY TUTORIAL RELEVANT TO YOUR PROJECT DESIGN

12

7. Lighting the Level

Fine-tuning the default daylight
Creating and adjusting point lights
Adding mood with spot lights
Setting area lights for baking
Excluding lights from geometry

WORK TIME

IN CLASS

13

8. Baking Lighting

Setting up the level for baking lighting
Adjusting baking parameters for a designed look
Setting object and light parameters for baking
Using light probes to light dynamic objects
Adding reflection probes for simulated dynamic reflections

9. Adding Polish with Particles and Effects

Creating a particle system
Adjusting the behavior of particles
Modifying the appearance of particles
Adding depth of field to focus the view
Letting lights and highlights glow
Grounding the scene with ambient occlusion
Using color correction to create a mood

WORK TIME

IN CLASS

14

10. Adding Audio to the Game

Bringing the environment to life with ambient sound

Triggering sound to play with an animation

Creating reverb zones

Mixing and balancing sound

11. Building the Game for Deployment

Setting up occlusion culling

Enabling batching to reduce draw calls

Creating a splash screen and icon

Compiling a desktop build

Building for Android

Making Revisions

FINAL PROJECT

15

Review: Final Project Progress

Work on Final project

Final Critiques in Class

FINAL PROJECT

Critiques of Prototypes/USER TESTING AND DEPLOYMENT

STUDENT MEETINGS

REVIEW

16

FINAL PROJECTS DUE

Tuesday, April 21

Final project folder must be submitted by Due

PRESENTATIONS

Grading breakdown:
Assignment

Percentage

Class Attendance and Participation ,Ä Students are expected to actively participate in class discussions, both in class as well as in class online forum.

20%

Weekly Assignments and Group Projects ,À Weekly assignments are due at the beginning of the next session of each week unless otherwise noted. The work will be uploaded to CANVAS prior to the beginning of class otherwise the work will be considered late.

50%

Final Project ,À 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.

30%

Grading Scale:
Letter Grade

% Equivalency

GPA Equivalency

A

94 ,À 100%

4.0

A-

90 ,À 93%

3.67

B+

87 ,À 89%

3.33

B

84 ,À 86%

3.00

B-

80 ,Äì 83%

2.67

C+

77 ,Äì 79%

2.33

C

74 ,Äì 76%

2.00

C-

70 ,Äì 73%

1.67

D+

67 ,Äì 69%

1.33

D

64 ,Äì 66%

1.00

D-

60 ,Äì 63%

.67

E, I, NG, S-U, WF

0.00

Course Policies:

Attendance Policy:

- a. At the sole discretion of the instructor, documented Emergencies or medical situations may be the only acceptable reasons for an excused absence. At the very least, students must contact the Instructor 24 hours before class time if they wish to be considered for an excused absence.
- b. Unexcused absences will accrue to the detriment of the portion of the final grade given for class participation.
- c. Three unexcused absences will result in the drop of one letter grade (i.e. the student will now only be able to obtain a maximum grade of ,A-B, for the course).

Make-up Policy:

- a. At the sole discretion of the instructor, Exams may or may not be taken late. Documented Emergencies or medical situations may be the only accepted reasons for an excused absence on the day of an exam.
- b. Any assignment turned in past the due date may lose up to 10% of the total point value of the assignment for each class day it is late.

Assignment Policy:

- a. At the sole discretion of the instructor, late work may be penalized according to the late policy.
- b. Any assignment turned in past the due date may lose up to 10% of the total point value of the assignment for each class day it is late.

CELL PHONE POLICY: There will be no cell phone use in this class. Keep your cell phones off please.

Course Technology: The students will be required to have access, and use a personal computer with the access to the Internet. The required software and hardware are expected to be installed and tested prior to class sessions/assignments.

UF Policies:

University Policy on Accommodating Students with Disabilities: Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

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>.

Plagiarism is claiming the work someone else did, as work you did. Please DO NOT DO IT. (Every assets/materials used in Weekly/Final project must be original unless the instructor addresses any exception for particular section. Please read each assignment guideline carefully.)

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 based on ten criteria. These evaluations are conducted online 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 <http://evaluaations.ufl.edu>.

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

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.