Course Description

Introduction to the design and implementation of computer games, including realtime graphics, audio and interactive multimedia programming techniques. Prerequisite: Computer Science 2336

Goals

The goal of this course is to master the basics of game development theory and game development implementation in the Unity game development platform.

Learning Outcomes

When you complete this course, you should be able to:

1. Students will learn the aesthetic and technical aspects of game development including story development, game play & mechanics, game content development, game programming, and play testing.
2. At the end of the course, students will have designed a new game, developed the story board and art assets for the game.

Required Materials


Software:

1. Unity:
   • Available on the machines in the MCS computer labs.
   • You can download Unity free of cost from unity3d.com. Details will follow when class starts.
2. Visual Studio:
   - Available on the machines in the MCS computer labs.
   - You can download Microsoft Visual Studio Community 2017 free of cost from Microsoft. Details will follow when class starts.

**Blackboard:** Blackboard will be used for lecture note postings, assignment postings, and assignment submissions.

**Computer:** You must have access to an adequate computer and Internet connectivity to participate fully in the class. A table describing supported browsers can be viewed on Blackboard’s support site.

**Communication**

You are responsible for checking your ASU email account and Blackboard throughout the duration of this course.

**Activities Assessing Learning Outcomes**

**Programming Assignments** The purpose of the programming assignments is to give you individual practice on the topics that you are learning and to explore some ideas more deeply. Programming assignments will be in the form of C# labs and game programming exercises.

**Quizzes** You will be assigned textbook material, videos, and PowerPoint slides. This material will help you build the knowledge and skills needed to complete the programming assignments. You will also be given quizzes during class. Quizzes will cover the material assigned in the previous class.

**Homework** Homework assignments will take the form of written papers related to the theory and approach taken in Game Development. The purpose of homework assignments is to assess student’s learning in aspects that are non-programming related.

**Final Project** In the place of a final exam, a final project will be completed by the student. The final project will be an original game of the student’s own creation. The project will consist of the student creating a 10-15 minute presentation detailing how each of the topics covered throughout the semester were implemented in the digital game. The student will then present to the instructor and class the presentation on **December 10, 2019 from 1:00 - 3:00 p.m.**

**Grades**

Your course grade will be based on the following:
<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>25%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>25%</td>
</tr>
<tr>
<td>Programming Assignments</td>
<td>25%</td>
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<tr>
<td>Final Project</td>
<td>25%</td>
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</tbody>
</table>

ASU employs a letter grade system. Grades in this course are determined on a percentage scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90-100</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
</tr>
<tr>
<td>C</td>
<td>70-79</td>
</tr>
<tr>
<td>D</td>
<td>60-69</td>
</tr>
<tr>
<td>F</td>
<td>0-59</td>
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</table>

Course Outline

Weekly tentative schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
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<tbody>
<tr>
<td>1</td>
<td>Intro to Game Dev, Game Design Theory</td>
</tr>
<tr>
<td>2</td>
<td>Game Design Theory</td>
</tr>
<tr>
<td>3</td>
<td>Game Design Theory</td>
</tr>
<tr>
<td>4</td>
<td>Intro to Unity, 3D Space</td>
</tr>
<tr>
<td>5</td>
<td>Enemies and Projectiles</td>
</tr>
<tr>
<td>6</td>
<td>Enemies and Projectiles</td>
</tr>
<tr>
<td>7</td>
<td>Graphics</td>
</tr>
<tr>
<td>8</td>
<td>Graphics</td>
</tr>
<tr>
<td>9</td>
<td>2D Games</td>
</tr>
<tr>
<td>10</td>
<td>2D Games</td>
</tr>
<tr>
<td>11</td>
<td>Player Movement and Animation</td>
</tr>
<tr>
<td>12</td>
<td>Player Movement and Animation</td>
</tr>
<tr>
<td>13</td>
<td>Interactive Devices and Items</td>
</tr>
<tr>
<td>14</td>
<td>Interactive Devices and Items</td>
</tr>
<tr>
<td>15</td>
<td>Audio and Music</td>
</tr>
<tr>
<td>16</td>
<td>Project Presentations</td>
</tr>
</tbody>
</table>

Course Policies

Policy on absenteeism/non-communication

- Attendance will be taken every day in the beginning of class. In-class quizzes and programming assignments will be given, so absenteeism will negatively impact your grade. Failure
to participate or communicate on your part will result in an appropriate reduction of your grade and possibly in your failure of this course.

**Late work**
- All assignments, unless otherwise specified, must be submitted to Blackboard containing your name, course name, the title of the assignment and the due date.
- No late assignment will be accepted. No e-mail submission is accepted. There are no exceptions to this rule.

**Student Disability Services**

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation.

The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student’s responsibility to initiate such a request by contacting:

**Ms. Dallas A. Swafford**  
Director of Student Disability Services  
- 325-942-2047  
- dallas.swafford@angelo.edu  
- Houston Harte University Center

**Title IX Statement**

Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU’s Title IX Coordinator:

**Michelle Nicole Boone, J.D.**  
Director of Student Disability Services  
- 325-486-6357  
- Michelle.boone@angelo.edu  
- Mayer Administration Building 204

**Student Absence for Observance of Religious Holy Days**

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence
for Observance of Religious Holy Day for more information.

**Incomplete Grade Policy**

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

**Student Conduct Policies**

**Academic Integrity**

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU. Visit ASU’s Academic Integrity page for more information.

**Plagiarism**

Plagiarism is a serious topic covered in ASU’s Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else’s work, idea, etc., and passing it off as one’s own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality via Turnitin. Resources to help you understand this policy better are available at the ASU Writing Center.

**Copyright Policy**

Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

**General Policies Related to This Course**

All students are required to follow the policies and procedures presented in these documents:
- Angelo State University Student Handbook
- Angelo State University Catalog
Modifications to the Syllabus

The instructor and the university reserve the right to modify or change the syllabus (schedule, course requirements, grading policy, etc.) as the curriculum and/or program require(s).