CS 4371-010: Computer Game Development II

Grant Wilde
Spring, 2021

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Office Hours: MWF 1-3 pm, TR 11:30 am - 1:30 pm
Office: MCS 205K

Course Website: Blackboard
Class Hours: MWF 11:00-11:50 am
Class Room: MCS 114

Course Description

Continuation of Computer Science 3371. Advanced game programming techniques, including designing game mechanics, concepts of emergence and progression, and the use of visual design tools.

Prerequisite

CS 3371: Computer Game Development I

Learning Outcomes

When you complete this course, you should be able to:
1. Develop a basic, 2D Platformer game
2. Develop terrain/height maps for 3D games
3. Utilize Unity’s Nav Mesh for enemy movement
4. Model a basic object and incorporate it into a game
5. Incorporate audio into 2D/3D games
6. Develop a complete, 3D game in Unity
7. Connect a complete game to the internet
8. Deploy a 2D/3D to user’s devices

Course Delivery

This is a face-to-face course with learning resources and supplemental materials posted in Blackboard. You are allowed to come to class every Monday, Wednesday, and Friday, i.e. there will not be split classes. All material needed to take this course remotely will be posted to Blackboard. Materials posted to Blackboard will take the form of PDF notes, Powerpoint slides, and recorded videos.
Required Text and Materials


Technology: You must have access to an adequate computer or laptop (Chromebook is insufficient) with a webcam and Internet connectivity to participate fully in the class. ASU computer labs are available for your use. A table describing supported browsers can be viewed on the Blackboard support site.

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.

COVID Related Requirements

Face Coverings: As a member of the Texas Tech University System, Angelo State University has adopted the mandatory Facial Covering Policy to ensure a safe and healthy classroom experience. Current research on the COVID-19 virus suggests there is a significant reduction in the potential for transmission of the virus from person to person by wearing a mask/facial covering that covers the nose and mouth areas. Therefore, in compliance with the university policy students in this class are required to wear a mask/facial covering before, during, and after class. Faculty members may also ask you to display your daily screening badge as a prerequisite to enter the classroom. You are also asked to maintain safe distancing practices to the best of your ability. For the safety of everyone, any student not appropriately wearing a mask/facial covering will be asked to leave the classroom immediately. The student will be responsible to make up any missed class content or work. Continued non-compliance with the Texas Tech University System Policy may result in disciplinary action through the Office of Student Conduct.

Exemptions: Students requesting an exemption to the face mask may need to wear a clear plastic face shield instead of a face mask. Students needing this accommodation should register with Student Disability Services and provide the appropriate documentation supporting this request. No accommodation exists that would exempt a student from wearing a mask/facial covering at any university-sponsored activity or event.

Sanitation: Wipes will be provided for students to wipe down keyboards and other surfaces before class begins. Please wipe/clean your area upon arrival to class.

Wellness Screening: The ASU daily wellness screening must be completed prior to coming to class.
Communication

- **Email:** All private communication will be done exclusively through your ASU email address. Check frequently for announcements and policy changes. In your emails to faculty, include the course name and section number in your subject line.
- **Blackboard Collaborate Office Hours:** I will be available every weekday during office hours in the virtual Collaborate classroom under Blackboard. You will be able to text, audio/video chat and share your computer screen with me/

Activities Assessing Learning Outcomes

**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.

**Status Checks** Following the completion of each topic this semester, students will submit a screen recording showing completion of all course lecture material.

**Programming Assignments** The purpose of the programming assignments is to give you individual programming practice on the topics that you are learning and to explore some ideas more deeply. Assignments will be given frequently for you to complete. Due dates will be posted on Blackboard and no late assignments will be accepted.

**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. Students will then upload their games to gamejolt.com for the instructor to play and evaluate.

Grades

Your course grade will be based on the following:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>25%</td>
</tr>
<tr>
<td>Status Checks</td>
<td>20%</td>
</tr>
<tr>
<td>Programming Assignments</td>
<td>25%</td>
</tr>
<tr>
<td>Final Project</td>
<td>30%</td>
</tr>
</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>
</tr>
</thead>
<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>
</tr>
</tbody>
</table>

**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.

**Course Outline**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>January 25 - 29</td>
<td>2D Platformer</td>
</tr>
<tr>
<td>2</td>
<td>February 1 - 5</td>
<td>2D Platformer</td>
</tr>
<tr>
<td>3</td>
<td>February 8 - 12</td>
<td>Terrain and Height Maps</td>
</tr>
<tr>
<td>4</td>
<td>February 15 - 19</td>
<td>Unity Nav Mesh</td>
</tr>
<tr>
<td>5</td>
<td>February 22 - 26</td>
<td>Modeling</td>
</tr>
<tr>
<td>6</td>
<td>March 1 - 5</td>
<td>Connecting Games to the Internet</td>
</tr>
<tr>
<td>7</td>
<td>March 8 - 12</td>
<td>Connecting Games to the Internet</td>
</tr>
<tr>
<td>8</td>
<td>March 15 - 19</td>
<td>Audio</td>
</tr>
<tr>
<td>9</td>
<td>March 22 - 26</td>
<td>Audio</td>
</tr>
<tr>
<td>10</td>
<td>March 29 - April 2</td>
<td>Completing a 3D Game</td>
</tr>
<tr>
<td>11</td>
<td>April 5 - 9</td>
<td>Completing a 3D Game</td>
</tr>
<tr>
<td>12</td>
<td>April 12 - 16</td>
<td>Deploying games to devices</td>
</tr>
<tr>
<td>13</td>
<td>April 19 - 23</td>
<td>Deploying games to devices</td>
</tr>
<tr>
<td>14</td>
<td>April 26 - 30</td>
<td>Special topics</td>
</tr>
<tr>
<td>15</td>
<td>May 3 - 7</td>
<td>Special topics</td>
</tr>
<tr>
<td>16</td>
<td>May 10 - 14</td>
<td>Final Project</td>
</tr>
</tbody>
</table>

**Course Policies**

All students are required to follow the policies and procedures presented in these documents:
- Angelo State University Student Handbook
- Grading Procedures
Policy on absenteeism/non-communication
• Attendance will be taken every day in the beginning of class. New lecture material 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.

Submissions/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.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student’s responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the Student Disability Services website. The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Ms. Dallas A. Swafford
• Director of Student Disability Service
• 325-942-2047
• dallas.swafford@angelo.edu
• Office of Student Affairs
• Houston Harte University Center, Room 112

Title IX Statement
The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.
Students are encouraged to report any incidents of sexual misconduct directly to ASU’s Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Miller, J.D.
- Director of Title IX Compliance/Title IX Coordinator
- 325-486-6357
- michelle.miller@angelo.edu

You may also file a report online 24/7 at www.angelo.edu/incident-form

If you are wishing to speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345.

For more information about Title IX in general you may visit www.angelo.edu/title-ix.

**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.

**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.

The College of Science and Engineering adheres to the university’s Statement of Academic Integrity.

All assignments should be the product of the student alone. Cheating occurs when a student either submits work for a grade that is not entirely due to his/her own effort or allows others to use his/her work.

**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.

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).