GAME & SIMULATION DESIGN II  
MDT 1670

Class Hours: 3.0  Credit Hours: 3.0  Laboratory Hours: 0.0  Revised: Spring 08

Note: it is highly recommended that students have access to a computer with enhanced graphics video and high-speed internet access or use of our open lab systems beyond the class meetings and scheduled lab times.

Catalog Course Description:

Course emphasis will be to fully develop the game or simulation project prototyped in previous (MDT 1620) class at a basic level of play. Class will also focus on industry tools like game engines and character modelers. Using appropriate tools, scenery, world geometry, 2D and 3D objects, animated characters and sound elements will be developed and included into a one level game or simulation. Where possible, this class will coordinate with students in a corresponding CSIT programming class so that more complicated scripting and programming can be developed and included in the finished project.

Entry Level Standards:

College level reading and writing, plus adequate planning and logic skills are expected. Students will be expected to understand and employ the overall workflow necessary for developing a game or simulation product. They should already be familiar with related tools like Adobe Photoshop, Avid or Final Cut video editing and basic sound production.

Prerequisites:

Familiarity with the operation of desktop computers and popular game consoles is essential. An interest in game design, sound production, animation and video editing is important. 3D modeling and animation at a basic level using Cinema 4D or Studio 3DMax recommended.

Textbook(s) and Other Course Materials:

TBD  
Web site material will be used to supplement this course.

I. Week/Unit/Topic Basis:

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<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Review applications and markets for game and simulation products. Review workflow of preproduction, production and postproduction processes utilized in game and simulation development. Establish production goals for this class and project. Assign teams for various aspects of the production.</td>
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Characters, vehicles, weapons, objects, structures, obstacles and other elements combined in Unity as the “element blending tool” – a powerful tool for creating games.

3-6
A. Introduction to “Poser” as a characters development tool. Re-examination of game and simulation structures for this project, including geometry and virtual physics
B. Add surfacing and textures.
C. Fully develop characters and animation.
D. Complete sound design for this project.

7-10 All elements of project in full production and completion phase.

11-12 Create the users menus and control panels. Polish GUI.

13-14 Final element polishing and debugging and testing.

15 Final comprehensive test /project /product Completion. Final product should reflect near commercial production values.

II. Course Objectives*:
A. Discuss the applications and potential markets for game and simulation products today, (including aspects beyond traditional game play products). I
B. Demonstrate an understanding of game development, play, 2D and 3D motion, programming and user interaction. II, III
C. Demonstrate working knowledge of a game creation software package such as “Unity”. II, III, IV
D. Demonstrate working knowledge of a simple character creation software such as “Poser”. II, III, IV
E. Generate working central figures, environmental objects, controls and attributes, game design mission, scoring and end-game goals. II,III, IV
F. Demonstrate logic, use of resources and tools to develop a well designed and fully functional set of game elements. II, III, IV
G. Employ resources and skills necessary to communicate problems to programmers which require programming assistance beyond the scope of the designers. I, IV

*Roman numerals after course objectives reference goals of the Media Technologies program.

III. Instructional Processes*:
Students will:

1. Acquire resources, tools and methods for game design and share resources, design goals and strategies with other students. (Active learning Strategies, Communication Outcome)
2. Devise production plan (including testing and debugging), schedule and meet milestones and deadlines and execute goals. (Active Learning Strategies)
3. Apply game and simulation design techniques, to achieve novel and compelling user experience. (Active Learning Strategies, Social/Behavioral Sciences Outcome, Technological Literacy Outcome)
4. Learn about and employ a game engine, 2D and 3D character modeler, animation tools, surfacing, texturing, and lighting tools to add realism to the game or simulation. (*Active Learning Strategies, Technological Literacy Outcome*)

5. Effectively utilize the resources provided and other sources of research to create functional elements and a working finished single level product of near commercial quality. (*Active Learning Strategies, Technological Literacy Outcome*)

6. Employ online testing to gauge general interest in product and to substantiate debugging procedures. (*Active Learning Strategies, Social/Behavioral Sciences Outcome*)

*Strategies and outcomes listed after instructional processes reference TBR's goals for strengthening general education knowledge and skills, connecting course work to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

**IV. Expectations for Student Performance***:

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of preproduction, production and postproduction approach to creating a game or simulation (B, F)

2. By implementation, demonstrate working knowledge of a game engine, character modeling tool, 2D and 3D animation tools, texturing and surfacing tools and sound design tools. (C, D, E, F)

3. Specify by design and intent, nature of final product, including intended market audience. (A, F)

4. Design comprehensive and functional user interface that is harmonious with the overall motif of the game or simulation. (E)

5. Use software and online tutorial resources. (B, C, D, E, F)

6. Refine game or simulation events to improve and enhance player/user experience. (B, C, D, E, F)

7. Modify and refine product by employing a logical debugging process and online testing and evaluation. (F)

8. Design, build and demonstrate a final product. (F)

*Letters after performance expectations reference the course objectives listed above.

**V. Evaluation**:

A. Testing Procedures:

Students are evaluated primarily on the basis of attendance, assignments, homework and projects. Each instructor must provide full details the first week of class via a syllabus supplement.

**How grades will be determined:**

Assignments (as specified by instructor) will constitute 35% of final grade, online and homework expectations, 15% of final grade and projects, 50% of final grade. Quizzes and Tests will not be given as a part of this class, but students may be required to complete
tutorials in order to employ various software tools. These will be considered assignments and successful completion will be necessary to earn this portion of the final grade.

B. Laboratory Expectations:

Lab is a major part of this course and attendance is required. It is assumed that considerable lab work and tutorials will have to be completed outside of the regularly scheduled lecture time. Assignments and projects must be completed by the designated date. Failure to meet deadlines will result in reduction of final grade.

C. Field Work:

Some photography, videography and sound recording may be required.

D. Other Evaluation Methods:

Class participation and online activities/homework will also be weighed in the evaluation of the final grade for the course.

E. Grading Scale:

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<table>
<thead>
<tr>
<th>Score</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90 – 100</td>
<td>A</td>
</tr>
<tr>
<td>85 – 89</td>
<td>B+</td>
</tr>
<tr>
<td>80 – 84</td>
<td>B</td>
</tr>
<tr>
<td>76 – 79</td>
<td>C+</td>
</tr>
<tr>
<td>70 – 75</td>
<td>C</td>
</tr>
<tr>
<td>65 – 69</td>
<td>D</td>
</tr>
<tr>
<td>Below 65</td>
<td>F</td>
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VI. Policies:

A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Learning, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Learning.

B. Academic Dishonesty:

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions which may be imposed through the regular Pellissippi State procedures as a result of academic misconduct, the instructor has the authority to assign an F or a zero for the exercise or examination or to assign an F in the course. (Pellissippi State Online Catalog)

C. Accommodations for disabilities:

If you need accommodations because of a disability, if you have emergency medical information to share, or if you need special arrangements in case the building must be
evacuated, please inform the instructor immediately. Please see the instructor privately after
class or in his/her office. Students must present a current accommodation plan from a staff
member in Services with Disabilities (SSWD) in order to receive accommodations in this
course. Services for Students with Disabilities may contact by going to Goins 127 or 131 or by
phone 694-6751(Voice/TTY) or 539-7153.

D. Other Policies:

Use of Equipment:
Any act of misuse, vandalism, malicious or unwarranted damage or destruction, defacing,
disfiguring, or unauthorized use of property/equipment belonging to Pellissippi State is subject
to disciplinary sanction.