

GAMING & 3D SIMULATION PROGRAMMING I
CSIT 1670

Class Hours: 3.0
Laboratory Hours: 3.0
Credit Hours: 4.0
Revised: June 2009

Instructor:
Office No.:
Phone No.:
Email:

Course Description:

Students will explore 3D virtual simulation and game development using a selected game development tool or engine. In depth development of game strategy, action figures, movement, sound and object generation will be the focus of this course.

Entry Level Standards:

Students will need a home 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. Students must be able to read, write, speak and reason at the college level.

Prerequisites: CSIT 1620 or CSIT 1510, or department approval

Textbook and Other Reference Materials:

- Introduction to Linden Scripting Language, Jeff Heaton, Heaton Publishing
- Scripting Recipes for Second Life, Jeff Heaton, Heaton Publishing
- Extensive online tutorials, handouts, in-class presentations and virtual world resources will be provided.

Suggested Optional Supplementals: Creating Your World, Weber, Rufer-Bach, Platel, Wiley Books. Web site material will be used to supplement this course.

I. WEEK / UNIT / TOPIC BASIS:

Week	Topic
1	Introduction, simulation and game design process and management
2	Design, Development, Primitives, Texturing, Graphics, linking, root prim
3	Game and simulation structures, math, geometry and virtual physics
4	Programming concepts for Virtual Reality environments, States, structures
5	Program coding, functions, scripts, Quiz
6	Creating Content, sound, media, animation
7	Characters, vehicles, weapons, items, objects, structures and obstacles
8	Midterm test. Game and real world simulation, sound, music

- 9 Server-side programming considerations and development
- 10-12 Individual product development, Quiz
- 13-14 Collaboration and team product development (in class and online)
- 15 Final comprehensive test / project / product completion

II. COURSE OBJECTIVES:

The student should be able to:

- A. Discuss the need for game and simulation development today, (including aspects beyond traditional game play products). I, II, III, IV, XI
- B. Demonstrate an understanding of game development, play, animated 3D backgrounds and 3D actionable motion, programming and interaction. I, II, III, IV, XI
- C. Demonstrate use of algorithms, math, concepts and data structures as applied to programming and scripting of simulation and game-base products. I, II, III, V, IX, XI, XII
- D. Demonstrate and recognize proper syntax, code structure, structured design and object coding to produce functional game-based and simulation products. III, X, XI
- E. Generate figures, environmental objects, controls and attributes, game design mission, scoring and end-game goals. V, VI, VII, IX, XI, XII
- F. Demonstrate logic, use of resources and tools to develop a programmed and fully functional/working set of game elements. V, VI, VII, IX, XI, XII

III. INSTRUCTIONAL PROCESSES:

Student will:

- 1. Acquire resources, tools and methods for game development and share resources, interactive coding and strategies with other students. (Active Learning Strategies, Communications Outcome)
- 2. Learn, plan, schedule, execute, control, enhance, debug and meet deadlines. (Active Learning Strategies)
- 3. Apply game development techniques, programming and script-coding to novel problem situations, and generate an individual project (simulation). (Active Learning Strategies, Social/Behavioral Sciences Outcome)
- 4. Learn about hardware, languages, engines, tutorials and software implementations used for game generation, including those used in class and others found through handouts and online research. (Active Learning Strategies, Social/Behavioral Sciences Outcome)
- 5. Effectively utilize the resources provided and other sources of research to create functional elements and two working finished products. (Active Learning Strategies, Technological Literacy Outcome)

IV. EXPECTATIONS FOR STUDENT PERFORMANCE:

1. Demonstrate knowledge of game and simulation usage and development. (A, F, G)
2. List, discuss and use 2D/3D development programming tools. (B, D, E)
3. Generate working code that will demonstrate game play and simulations of real-world actions and outcomes. (B, C, D, E, F)
4. Demonstrate proficiency of the tools being used. (A, B, C, D, E, F)
5. Use software and online tutorial resources. (B, C, D, E, F, G)
6. Create computer programs that utilize correct methodologies. (B, C, D, G, E)
7. Create computer controlled (scripted) objects in a 3D virtual environment. (B, C, D, G, E)
8. Design, build and demonstrate a final product. (A, B, C, D, F)

V. EVALUATION:

A. Testing Procedures:

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

B. Laboratory Expectations:

Lab is part of this lecture/lab course and attendance is required. Assignments and projects will be given and must be completed and handed in at the designated date. The student is expected to turn in all required documentation for each lab.

C. Field Work: N/A

D. Other Evaluation Methods:

Class participation and online activities/homework will also comprise the final grade for the course.

E. Grading Scale:

93 – 100	A
88 – 92	B+
83 – 87	B
78 – 82	C+
73 – 77	C
65 – 72	D
Below 65	F

VI. POLICIES:

A. Attendance Policy:

Pellissippi State Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. [NOTE: No differentiation is noted for excused/unexcused absences. These will be treated as an absence.] (Pellissippi State Catalog)

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 Catalog)

C. Computer Usage Guidelines:

College-owned or –operated computing resources are provided for use by students of Pellissippi State. All students are responsible for the usage of Pellissippi State's computing resources in an effective, efficient, ethical and lawful manner. (Pellissippi State Catalog)

D. Accommodation for Disabilities:

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins134 or 126 or by phone: 694-6751(Voice/TTY) or 539-7153. More information is available at www.pstcc.edu/departments/swd/