

CSCI 441 Game Programming

Instructors: Dr. David Turner, Dr. Kerstin Voigt

Lecture: MW 12 :00 – 1:15 PM JBH 114

Lab: W 1:30 – 3:20 PM JBH 360

Office Hours: M 1:30 – 3:30 PM JBH 340
W 3:30 – 5:30 PM

Quarter: Spring 2009

Class Number: 43573/43574

Units: 4

Prerequisites: CSCI 420 or consent of instructor

Course Description:

This is the course web page for CSCI 441 Game Programming. All reference materials and readings for this course are available as free resources on the Web; there is no assigned textbook that you need to purchase.

The course will focus on reading and writing code that illustrates fundamental concerns in video game programming. We will use Microsoft's XNA game development framework, which means the programming language will be C#.

The prerequisite for this course is CSCI 420 Graphics Programming. If you have not taken CSCI 420, then you can still enroll in 441, but be prepared to learn about graphics programming if you have not already studied this topic.

Course Objectives:

- 1) Understand the role and technique of shader programming in video games.
- 2) Understand the process by which animated 3D models are created and incorporated into video game systems.
- 3) Understand how to use 3D sound systems to enhance the realism of virtual worlds in video games.

- 4) Understand the fundamental concerns and their order within the game loop.
- 5) Learn how to implement collision detection and resolution.
- 6) Learn basic artificial intelligence (AI) techniques to control characters in video games.
- 7) Learn the use of network programming to support multiplayer video games with a client-server architecture.
- 8) Learn the use of object-oriented programming in the design of video game software.
- 9) Learn the use of integrated development environments for software development.
- 10) Understand how to use Subversion for version control of software development projects.

Assignments:

Assignments are based on exercises posted on the course web site. See <http://cse.csusb.edu/turner/441>

Assignments should be submitted in hard copy form, including any required UML diagrams. Include a cover page with your name, date, course number and assignment number. Assignments must be neat and readable. Points will be taken off for generally sloppy work. Points will also be taken off for code that does not consistently follow a logical pattern. Assignments with incomplete solutions will be marked down in points. With each problem solution, include a statement as to whether you have completely solved the problem or are submitting an incomplete solution. If you are submitting an incomplete solution, explain what works and what doesn't work about your program. The instructor may ask for you to demonstrate your solutions by running them in lab and explaining your work. If your code does not work as claimed in your report, your score on the assignment will be marked down further. Artifacts in the form of source code and other files that comprise the solution to your assignments should be committed into a Subversion repository that will be created for you.

Grading:

The course will include graded assignments and presentation-based midterm and final exams. Assignments are submitted as reports that include source code and written explanations of the code. For the midterm and final exam presentations, students will propose mini-projects that are variations on the assignments. Group projects are acceptable. Proposals must be written and get prior approval from the instructors.

Assignments	45%
Mid term	25%
Final exam	30% (12:00 – 1:50 Wednesday, June 17)

Late Assignments:

Students will lose points for submitting assignments late unless a valid excuse is presented to the instructor. Falling behind in assignments will make it more difficult to complete material by end of the quarter.

Students with Disabilities:

If you are in need of an accommodation for a disability in order to participate in this class, please let me know as soon as possible, and also contact Services to Students with Disabilities at UH-183, (909)537-5238.

Academic Regulations and Procedures:

See the CSUSB Bulletin of Courses for the university's policies on course withdrawal, cheating, and plagiarism.