1 What is involved

This course will cover some of the advanced topics in Computer Graphics related to the design and creation of 3D games and digital contents creation. 3D Games are an important development in entertainment computing. For this class, Game programming Gems 1, 2, 3 (Charles Rover Media) form a resource where a variety of diverse topics are discussed. The emphasis will be on 3D graphics techniques. Another resource is the 3D Games Animation and advanced Real-Time Rendering by Watt and Policarpo (Addison-Wesley). Time permitting, I would also cover some recent articles related to these areas from VR conferences, SIGGRAPH proceedings, IEEE CG&A, Game Development magazines and other sources, as necessary. Please note that all these books are recommended, not required.

This course involves a major term project. A project must have a strong programming component in an environment of your choice. Once you decide what you are planning to do, please let me know, so that we could discuss the extent of the project. A group of at most two students is recommended.

All the graphics projects could be implemented on your own PC, or on a system available in CS labs. Both OpenGL, DirectX, or your choice of
library could be used. ARToolkit (Augmented Reality Toolkit) working with a camera, Crossbow sensors, and a NOMAD Headmounted Display are also available for your implementations for mobile game development.

Please note that the backup lecture days are September 9th, 16th, or October 21st, or November 11th (9:15-10:30am), 2006 in case classes cannot be held during normal hours.

2 The Term Project: 55 percent

The term project would also involve a written report on the results of your project. The suggested size of the report is around 15-20 pages. This report is due when the finals examinations would be given. There are following deadlines for the term project:

1. September 7th and 12th, 2006: Ten minute project-proposal presentation due in class (A brief survey of the sub-area and detailed plan suggested, mid semester and final demonstration goals clearly specified in a written one-page term project proposal.) (2.5 percent).

2. October 12th-19th, 2006: Mid Semester project demo due including a one-two page report as to the progress to-date and goals to be met (20 percent)

3. November 28th - December 7th, 2006: Final Demo (20 percent) and a complete term-paper report around 15-20 pages long (7.5 percent).

4. November 28th and 30th, December 5th, and December 7th, 2006: Term-paper presentation (5 percent). A time slot of approximately 20-30 minutes would be given to the student. Although it will depend upon the topic of the project, and the student’s style of presentation, the presentation should cover a brief survey of existing methods, the method used, implementation details, conclusions, and future research. To avoid extensive writing during presentation, I will also suggest to prepare some Power-point presentations in advance. Apart from the hard-copy submission of term project report, an electronic (pdf) submission is also required. A one page product-announcement must also be part of the term report.
Please make an effort to follow these deadlines. There is a penalty of 5% if late by more than one week. However, projects and assignments submitted after two weeks of the deadline would not be accepted, unless special circumstances warrant an extension. Please talk to Semwal at your earliest convenience in this case. There are no extensions for in-class presentations.

3 The Mid Term: 22.5 percent

Will be in class exam and will be held the Thursday (October 19th, 2006). The course will be whatever covered till that point in the class.

4 The Final Exam: 22.5 percent

The final take home exam is for approximately one week. The take home is due on Tuesday December 12th, 2006 by 9:45 p.m.

5 Department Policy on Late Drop

A late drop will be approved only if there is documented evidence that the student was prevented from attending a significant number of classes by circumstances beyond his or her control.

6 Office Hours

You are welcome to discuss/talk about the course any time you find me free. However, if I am busy outside the office hours then I would say so and tell you to come later.