This course will cover technical aspects of Computer Graphics Animation and Visualization Techniques. I plan to cover selected chapters of several books (Computer Graphics, Principles and Practice by Foley, Van Dam, Feiner and Hughes; 3D-Computer Animation by John Vince; and Advanced Animation and Rendering Techniques by Alan Watt and Mark Watt, Disney Animation Books, and Computer Facial Animation book), and selected visualization papers from journals (The Visual Computer, Transaction on Graphics, IEEE CG&A).

This course involves a major term project. All the programming assignments could be implemented on the Silicon Graphics systems using the animation package called Maya. The use of Maya (MEL) is recommended as it is one of the best animation systems available. Silicon Graphics systems are housed at the Advanced Computer Laboratory (Room 143 EAS). The World Tool Kit package, the Graphics Libraries (OpenGL), PHANToM force-feedback device, stereo-glasses, 3D ultrasound trackers are also available for a suitable project. An term project must have both a research and an implementation component to it.

I am attending a conference/panel and would miss February 1st, 3rd, and March 1st classes, the dates for missed classes is scheduled for Saturday February 19th 2005 at 9 am-11:30 am. In case of other weather related
cancellations or other scheduling conflicts, Saturday April 2nd, 2005 9:11:30 am is another backup date if needed. Please make a note of it.

1 The Term Project: 50 percent

This research term project would be based on researching (reading) and implementing some advanced animation or visualization technique. Recent SigGraph Proceedings are a good source of current research. Emphasis would be on selecting an advanced area of your choice in the area of animation and visualization, and implementing advanced algorithms. The term project would also involve a written report on the results of your project. The suggested size of this term-paper report is around 15-20 pages. This report is due when the take-home final examination would be given. There are following deadlines for the term project:

1. Phase I: One page project proposal due (3 percent). Deadline Feb 11th (Friday), 2005 (e-mail submission as text/word files are encouraged). All projects will be discussed in the following class.

2. Phase II: Project demonstration (10 percent) based upon the code-implementation upto that point. Deadline on or before March 18th (Friday), 2005. Demonstration times by appointment.


4. April 28th - May 5th: Term-paper presentation (in class, time of presentation for a student to be selected around November 11th, 7 percent). The term-paper report is due on or before May 6th 2005 (10 percent).

Late submissions of homeworks/demonstrations would be accepted, but with a penalty of 20 percent of the grade for that assignment. Under extreme circumstances (such as job related or illness), an extension would be provided on an individual basis.

2 Mid Term

Tuesday March 10th, 2005 (25 percent, closed book, in class). Will include everything covered in the class till that point.
3 Final Exam

The final (given April 28th, 2005, 25 percent) is a take home exam providing two weekends before it is due. Due on Tuesday May 10th, 2005 by 7:00 p.m.

4 Term Paper Presentation

The last one-two weeks of the course would schedule twenty-five minutes presentations by each student. The presentation would be based on the term project material. The presentation would give a summary of the techniques and results obtained by the student. A projector would be available for your power-point presentation. If needed, you could also use showcase available on SGIs to make transparencies, and capture images. Please contact semwal for special arrangements, if any.

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

WF: 11am-12 noon Tues, Thursday: 8:39-9 p.m. You are welcome to discuss/talk about the course any time you find me free. If I am busy outside the office hours then please do return at some later time so that I could answer your questions. You could also send me an e-mail at semwal@cs.uccs.edu.