Syllabus

COEN 396 Interactive Multimedia and Game Programming
Department of Computer Engineering
Santa Clara University

Dr. Ming-Hwa Wang   Winter Quarter 2006
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Course website: http://www.cse.scu.edu/~mwang2
Office Hours: Tuesday & Thursday 9:00-9:30pm

Course Description
Game engine and architecture, game data structures and algorithms, window game programming, 2D and 3D programming, scripting and parsing, massively multiplayer online real-time games, p2p networking, game mathematics and physics, artificial intelligence game techniques, interactive multimedia, etc.

Prerequisites
Data Structures and Computer Algorithms. Computer Graphics, Real-time Operating Systems, Computer Networks, Artificial Intelligence, Compiler, etc.

Required Textbooks
1. "SMIL 2.0 : Interactive Multimedia for Web and Mobile Devices", by Dick C.A. Bulterman and Lloyd Rutledge, Springer, 2004
2. "AI for Game Developers", by David M. Bourg and Glenn Seemann, O'Reilly, 2004
3. "Tricks of the Windows Game Programming Rurus, 2nd Edition", by Andre LaMothe, Sams, 2002

References
1. "3D Game Engine Architecture, Engineering Real-time Applications with Wild Magic", by David H. Eberly, Morgan Kaufmann, 2005
2. "Game Coding Complete, 2nd Edition", by Mike McShaffry, Paraglyph, 2005
3. "Game Programming Gems 5", by Kim Pallister, Charles River Media, 2005
4. "Killer Game Programming in Java", by Andrew Davison, O'Reilly, 2005
5. "Beginning Mobile Phone Game Development", by Michael Morrison, Sams, 2004
6. "Essential Mathematics for Games & Interactive Applications, A Programmer's Guide", by James M. Van Verth, Lars M. Bishop, Morgan Kaufmann, 2004
7. "Game Physics", by David H. Eberly, Morgan Kaufmann, 2004
8. "Programming Game AI by Example", by Mat Buckland, Wordware Publishing, 2004
9. "AI Game Programming Wisdom 2", by Steve Rabin, Charles River Media, 2003
10. "Core Techniques and Algorithms in Game Programming", by Daniel Sanches-Crespo Dalmau, New Riders Publishing, 2003
11. "Managed DirectX 9 Kick Start: Graphics and Game Programming", by Tom Miller, Sams, 2003
12. "Tricks of the 3D Game Programming Gurus-Advanced 3D Graphics and Rasterization", by Andre LaMothe, Sams, 2003
13. "Real-time Rendering, 2nd Edition", by Tomas Akenine-Moller and Eric Haines, AK Peters, 2002

Grading Policy
Course grade is determined based on the total score (maximum 1000 points + up to 200 optional bonus points for extra work) from:
1. Final exams of 300 points. Makeup exams (must have a very good reason for makeup) are much difficult than normal exams.
2. One Programming assignment of 100 points (late penalty: 20 points/day.) Makeups are more difficult too.
3. A group (prefer 2 people in a team) programming term project of 600 points (late penalty: 140 points/day.) No makeup is allowed.
4. Bonus assignments including submission (10 points), presentation and participation (190 points, very subjective, but mostly based on presentation skill and questioning). No late work accepted for bonus assignments.
5. Class average targeted at **B+**.

Table 1: Grade-score table

1000 - 1200	950 - 999	900 - 949	850 - 899	800 - 849	750 - 799	700 - 749	650 - 699	0 - 649
A	A-	B+	B	B-	C+	C	C-	F

Course Schedule (Tuesday & Thursday 7:10pm-9:00pm)
Table 2: Course Schedule

#	week	Readings	Remarks
1	1/10 1/12	introduction	submit due 1/12
2	1/17 1/19	window game programming	game presentation 1/17
3	1/24 1/26	game engine/architecture	program #1 due 1/22
4	1/31 2/2	data structures/algorithms	problem due 1/31
5	2/7 2/9	game mathematics/physics	group & topic due 2/7
6	2/14 2/16	2D/3D game programming	paper presentation
7	2/21 2/23	AI game techniques	proposal due 2/21
8	2/28 3/2	p2p networking and MMORG	
9	3/7 3/9	scripting and parsing	
10	3/14 3/16	interactive multimedia	final exam 3/14
11	3/21		project defense 3/21

Reminder

- No cheating, and no register complaint without talking to me first.
- No incomplete. Due date for withdraw is March 17.
- No sit-in or audit the class except formally registered.
- Read files under /home/mwang2/tips for help.
- Handouts, assignments, and solutions will be posted on the web. You should check the class web site at least once a week. You are responsible for printing and bring the handout to the class.
- Put a cover page posted my website on top of each of your submitted written/hardcopy assignment.
- Office hours are 9:00pm-9:30pm after each lecture.

Honor Code
All students taking course in the school of engineering agree, individually and collectively, they will neither give nor receive unpermitted aid in examinations or other course work that is to be used by the instructor as a basis of grading.

Disability Accommodation Policy:
To request academic accommodations for a disability, students must contact Disability Resources located in The Drahmann Center in Benson, room 214, (408) 554-4111; TTY (408) 554-5445. Students must provide documentation of a disability to Disability Resources prior to receiving accommodations.