COMP 5900H
Advanced Computer Gaming

Doron Nussbaum

Admin

- **Instructor:** Doron Nussbaum
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- **Office hours:** Monday 13:00-15:00
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- **Classroom:** PA 240
- **Class Hours:** Wednesday 14:35-17:25

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Course Objectives

- To gain insight into computer game design and gaming components.
- Usage of computer graphics (e.g., DirectX) as a tool for creating games
- Special/advanced features of gaming

- Secondary objectives
  - Incorporate all what you learned so far
  - Have Fun

Background Expectation

- Coding experience
- Open mind
- Computer science knowledge
- Knowledge of graphics, gaming

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Labs

- Computer labs
  - Labs of the 4th floor
    - Assuming that you do not have access to a lab
  - Access card ?
    - Check the schools web pages

Environment

Windows (XP or Vista)
- Programming Language
  - C and/or C++
- DirectX

- Other options – Linux, Open GL

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Communication

- Course Web Page:
  - http://www.scs.carleton.ca/~nussbaum/courses/COMP5900

  - As well as being announced in class, all important information, such as course news, assignments, instructor office hours, will be available on the course web page

- It is the student's responsibility to check this web page for new information.

- I will also try to communicate via e-mail
  - Connect Account

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Code of Conduct - Ethics

- You must write your own assignments/code etc.
- External Contribution
  - all external contributions must be properly references and acknowledged (books, example algorithms, ideas)

- Collaborations and discussions are welcomed with respect to
  - Getting ideas (books, web sites)
  - Discussing ideas, approaches with your colleagues
  - Consult example programs, algorithms, text books

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Code of Conduct - Ethics

- Not Allowed
  - Share your code with your colleagues
  - Present ideas from other sources as yours
  - Present code from other sources as yours

- Copying of assignments is strictly disallowed.
  - 1st occasion - the students involved will be warned and may obtain a negative mark.
  - Subsequent occasion, students will be asked to withdraw from the course (calendar rules - plagiarism)

Course Evaluation

- 3-4 Assignments - 30%
  - if less assignments are given then some weight will be transferred to Reading Papers)
- Reading Papers – 15%
- 2-3 Presentations - 20%
- Project - 30%
- Participation - 10%

- All marked assignments (once handed back) should be retained by students as proof of completion. At the end of term you should verify all assignment marks entered; in case of discrepancy hand in your assignment(s) with an explanatory note.

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Course Evaluation

- Paper / topic presentation
  - Presentation in class
    - 45 minutes
    - Summary of paper and its significance
  - 3-5 pages paper summary and critics about the paper
  - Bring to class
    - Hard copy of the presentation for each class
    - Hard copy of the paper
    - Softcopy of the presentation and papers if applicable
    - Softcopy of summary of paper
- Project
  - 10% project proposal/project plan
  - 10% project design/intermediate report
  - 20% project final presentation (poster presentation)
  - 60% project implementation & final report

Contents (Tentative):

- Game design concepts
- Basic of Game programming (review)
  - Graphics (DirectX)
    - 3D
    - Textures
    - Sprites
  - Animation
  - Geometric manipulation

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Contents (Tentative):

- Collision detection
- AI
- Network games
- Multi resolution/levels of details
- Input and Output – stereo vision
- Cheating in games

Presentation Topics

- Selected from papers
  - I will provide a list of papers to select from
  - If you have an interesting paper then come and see me

- Examples of areas
  - Input/Output
    - New media
  - Motion Capture Technology
  - Security in games
  - Social aspects of games
  - Educational games
  - Serious games

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Projects

Two types of projects
- Implementation
  - Purpose: to Create a Game
    - Net work game
  - Can work in groups of two

  - Implementation of a special feature in gaming
    - Levels of details in a fly through
    - New I/O

- Research
  - Purpose: present an improved or new technique (mini paper).

Text Book

- No specific book for the course
  - A lot of material is available on the internet

Many Books:
- Luna, Introduction to 3D Game Programming with DirectX
- Steve Rabin, Introduction to game development
- Stahler, Beginning Math and Physics for Game Programming, New Riders,
- Many others
- Foley, van Dam, Feiner, Hughes, Computer Graphics Principles and Practice, Addison Wesley
- Watt, 3D Game Programming
- …

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Paul Menton Centre

- Students requiring academic accommodations are encouraged to contact the Paul Menton Centre to complete the necessary letters of accommodation.

- The Paul Menton Centre is located in room 500 at the Unicentre
  - Tel: ext. 6608 (520-6608).
  - http://www.carleton.ca/pmc/

- Please note that there are deadlines for submitting completed forms to the Paul Menton Centre
  - In class tests (midterm) - 2 weeks before exam date
  - Final Exam – check at the PMC

- In addition to PMC, discuss your needs with me at least two weeks before the midterm and/or final exam. This is to ensure sufficient time to make the necessary accommodation arrangement.

Other Accommodations

- You may need special arrangements to meet your academic obligations (e.g., disability, pregnancy or religious obligations).

- Review the course outline promptly – e.g., in-class tests, midterm, final exam, as well as any change in due dates for papers.

- Make a request for accommodation by writing to me within the first two weeks of the term, or as soon as possible after the need for accommodation is known to exist.

- Visit the Equity Services website to view the policies and other related information
  - http://www.carleteon.ca/equity/accommodation

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Important Dates

Sept. 28	Project Proposal
Oct. 26	Project Preliminary Report
Nov. 28, and/or Dec. 3	Project Presentations
Dec. 12	Project is due

•No class on September 26
•Make up class on Dec. 3

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