CISC 3600 – Game Programming

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General Information

- **COURSE WEBSITE**

  http://www.sci.brooklyn.cuny.edu/~meyer/CISC3600/

- **COURSE INFORMATION**

  Course Abbreviation: CISC 3660 (formerly CIS 54.1)
  Schedule: M,W 09:30-10:45AM
  Room: 4411 N
  Lab: 5301 N

  INSTRUCTOR INFORMATION

  Instructor: Matthew Meyer
  Office: 534 NE
  Office Hours:
  - Monday, 1:00-3:00 PM
  - Wednesday, 1:00-3:00 PM
  E-mail: meyer@sci.brooklyn.cuny.edu
  Web Page: http://www.sci.brooklyn.cuny.edu/~meyer

Class Rules

▸ In addition to all rules set down by department, college, university, city, state, country and common sense, we have two additional class rules:

1. Respect
   ◦ I show it to you, and you in turn will show it to your classmates and to me.
2. Get your money's worth.
   ◦ Somebody is paying for you to be here.
   ◦ You wouldn't spend $2K on a TV and not watch it.

So, you want to be a game programmer.

‣Based on the most recent information available typical **entry-level** salary for a Interactive Simulation / Game <u>Programming</u> professional is around $50,000 *(PayScale.com, International Game Developers Association).*

‣The annual median wage for Computer Simulation and Game Programming varies from $69,000 to $93,000. *(swz.salary.com)*

‣To enter this field enter this field you need to obtain at least a bachelor's degree. This degree is typically earned in simulation or game programming, computer graphics, software engineering or computer animation.

‣The expected growth in the coming years (to 2016) is around 40-45% (U.S. Department of Labor's Bureau of Labor Statistics employment information).

What does it take to be a game programmer?

1. You have to be a STRONG programmer, skilled in the Imperative, Procedural and Object-Oriented paradigms.
2. You have to have a working knowledge of game design theory.
3. You have to have a working knowledge of specific programming techniques used in games (object-collision detection/response, graphics).
4. You have to be able to program a game.

Game Programming Education (1)

Cornell (Minor in Game Design)

Required Courses: (2)
- CIS 3000: Introduction to Computer Game Design
- CIS 4002: Advanced Projects in Game Design

Additional Courses: (4):
- CIS 5640: Computer Animation
- COM S 5643: Physically Based Animation
- COM S 4450: Computer Networks
- COM S 4620: Introduction to Computer Graphics
- COM S 5620: Interactive Computer Graphics
- COM S 4700: Foundations of Artificial Intelligence
- COMM 4220: Psychology of Television (and Beyond)
- ECE 4760: Digital Systems Design Using Microcontrollers
- INFO 3450: Human-Computer Interaction Design
- INFO 4400: Advanced Human-Computer Interaction Design
- COGST 3420: Human Perception: Graphics, Art, and Visual Display

Game Programming Education (2)

<u>University of Denver (B.A. Game Development)</u>

(Core and Advanced Math Requirements)

- Introduction to Computer Science I
- Introduction to Computer Science II
- Introduction to Computer Science III
- Discrete Structures in Computer Science
- Introduction to Algorithms and Data Structures
- Introduction to Systems Programming
- Introduction to Computer Graphics
- Game Programming I
- Game Programming II
- 4 from (AI for Games, Computer Graphics and Animation, Advanced Graphics and Animation, Operating Systems, Computer Networking, Network Games, Game Design I, Game Design II, Digital Audio Production I, Digital Audio Production II, topics in Game Programming, and topics in Game Design)

Game Programming Education (3)

<u>SMU (M.A. Interactive Technology)</u>

(57 Total Credit Hours)

- 7 term credit hours of Game Studies
- 10 term credit hours of Team Game Production,
- 12 term credit hours of Directed Focus Study,
- 6 term credit hours of Approved Electives, and
- 22 term credit hours in their chosen area of specialization.

Example Specialization Courses:
"Mathematical Methods of Games Physics"

- HGAM 6221: Mathematical Methods of Game Physics I
- HGAM 6222: Mathematical Methods of Game Physics II
- HGAM 6223: Mathematical Methods of Game Physics III

What we offer

- CISC 3620 [41] Computer Graphics

- **CISC 3660 [54.1] Game Programming**

  - CISC 3665 [54.2] Game Design

So... what should we do with this class?

- No, seriously, what do YOU think we should do with this class?
- How many of you would like to be a game programmer?
- How can this course help you get that job?

How to get a job

There are a lot of well established approached to getting a job:

1. Sitting on couch waiting for the phone to ring
2. Resume spamming
3. Online site posting/response
4. Job fairs
5. Internships
6. Contact Mining
7. Placement Services
8. Informational Interviewing

The goal of this class

- If you somehow manage to get your foot in the door, before you get the job, you will have to go on an interview.

- This class is built around preparing you to do well in an interview situation at a game development company.

- The final exam for this course is a mock interview.

Preparing for the interview/final

Imagine you own/manage a game design/development company. You are looking to hire someone for an entry level programming position.

What are you going to ask them?
What are you going to want them to know?
What are you going to want them to show?

Is it clear?

1. This course is a comprehensive introduction to the wide variety of topics within game programming. The goal is to build your vocabulary and provide you with a high-level understanding of as many topics in game-programming as we can get too.

   - NOTE: We will go into game mathematics and game physics as deep as possible in the time available.

2. As part of this class, you will create a portfolio of 3 games. Two of these games you will create on your own, and one game you will create in a group.

3. Your final exam will be a mock interview, in which you will present your resume and portfolio as well as answer 2 "interview like" questions (chosen at random).

Seriously, I want to be a game programmer

- How do you get your foot in the door?
- Information Interviewing is one of the BEST techniques for finding a job (and not just any job, a job you actually want).
- Informational Interviewing works well for people just starting out in their careers and for people switching careers.
- Informational Interviewing takes time.

Informational Interviewing

An informational interview involves talking with people who are currently working in the field or job that you want to gain a better understanding of that occupation or industry (and to build a network of contacts in that field).

Think of it like this, what you want to do is find the person who has the job that you want, and then find out HOW they got that job.

Using Information Interview (in order to get a job)

Think of it an a year long process:

Month 1: Find the companies and the people within that company that you are going to contact. Do your homework!

Month 2: Conduct a targeted mailing/ emailing/ calling of those corporations.
- Make it clear that you are NOT looking for a job, just information.

Month 3: Go visit the companies/individuals and conduct your interviews. Make it clear that you are NOT looking for a job (remember you are looking for "career advice").

Month 4: Send thank you notes. Ask for permission to "stay in touch". Ask for other people (contacts) who might be willing to talk with you. Create a list of "the skills I didn't have".

Months 5-10: Acquire the skills you didn't have!

Month 11-12: Go back to your contacts, tell them that you are now looking for work.

Links to more information:

http://www.quintcareers.com/informational_interviewing.html

http://www.bls.gov/opub/ooq/2002/summer/art03.pdf

http://jobsearch.about.com/cs/infointerviews/a/infointerview.htm

http://www.careerbuilder.com/Article/CB-481-Getting-Ahead-How-Does-an-Informational-Interview-Work/

Questions?

- Yes?
  - Ask.

- No.
  - Go Home.