CS188 – Science Gateway Seminar for CS and Math (Part II)

Spring 2014 – Class 1

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Contact Information

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- Office – S-3-071
- Office hours - Tu Th 3:00–4:00 or by appointment.
- Course schedule: Tu Th 11:00–11:50 at S-3-143 (CS/IT seminar room)

Course Description

- This is the second part of a two-semester sequence. Successful completion of the sequence will fulfill the students First-Year Seminar requirement.

- We will discuss different concepts of CS, read relevant articles, and discuss important matters in writing and orally, both individually and in small groups.

- We will become increasingly familiar with and experienced in scientific discourse, the scientific method and scientific communication.

- Course website: http://www.cs.umb.edu/~nurith/cs188.

- Syllabus: http://www.cs.umb.edu/~nurith/cs188/Syllabus_spring.pdf.

- CS187 website: http://www.cs.umb.edu/~nurith/cs187.

The Course Structure

- Unlike most courses – the class will be run in sequence, no particular order.
- The following topics will be focused upon this semester:
    - Intermediate programming, emphasis on C/Unix and Java.
    - Applications of Computer Science and Math to other areas – physics, biology etc.
    - Other "hot" topics: Android programming, git and version control, embedded systems (arduino and raspberry pi).
- There will be guest talks from people in the college.
- A large part will be dedicated to Glasgow Caledonian University (GCU) exchange program.
- Student presentations.

General Stuff

- The course material will be available online and updated regularly with class notes and announcements.
- Attendance is required and accounts for 20% of your grade.
- If you miss a class for a justifiable reason (should be documented) please let me know as soon as possible.
- Don't be afraid to ask questions in or out of class. I won't think you are stupid and it won't lower your grade. Active participation is highly encouraged in this course.
- Don't hesitate to send me e-mails. I expect e-mails. It won't lower your grade.

Course Requirements

- Attendance – 20%.
- Homework assignments will be given from time to time – 20%
- Team topic essay (5 pages) – 30%.
- Team topic presentation – 20%.
- See Syllabus for more details.
- English majors are available to help with written assignments – you are highly encouraged to use them.

- Nicholas Rosato: njrosato@gmail.com .
- Anthony Reid: Anthony.Reid99@gmail.com .
- Location: Unix lab. Office hours: By appointment.
- They are here for you!
- They assigned to our class to help you with any questions regarding CS188, any other coursework, and administrative matters.
- For example, if you have a question about CS210/CS240, Calc I or a difficulty elsewhere on campus, they can help you out.
- They will also deliver several subjects.

Introduction to Freshman Success Community (FSC)

- The CSM Student Success Center was established in Sep. 2008 to promote student success.
- Webpage: http://www.umb.edu/academics/csm/student_success_center
- It houses 13 Freshman Success Communities, CS is one of them.

Seminar Objectives

1. Critical reading: Careful and critical reading skills: determining truth from fantasy in popular articles about CS, math, and science in general.

2. Critical thinking: We will formulate our own opinions in our papers, our classroom discussions and our oral presentations. Our discussions in class and in writing should promote clearer thinking in all of us.

3. Clear writing: We will be writing essays that go through two drafts in both semesters. After the first draft is collected, your peers and I will make comments and you will submit a second, final draft. This will be a 5-page essay for team writing assignment and possibly shorter essays regarding your coursework. Help will also be available through English majors.

Seminar Objectives

4. Academic self-assessment: we will respond and constructively criticize each other's writing (mine included). This should promote cross discussion among teams and permit suggestions of additional material the teams might consider, highlight deficiencies in a group' choices of source material, and/or guide us about our critical reading of the source material. Also, our peers will comment on the two drafts of our essays (before the instructor does); we will get both sets of comments to work from when making our revisions.

5. Collaborative learning: both in face-to-face meetings and using collaborative tools on the web. We will be doing research, writing articles and making oral presentations, both in teams and individually. This will become especially important this semester since we will collaborate closely with GCU and the Engineering FSC.

Seminar Objectives

6. Information technology: We will learn how we can use information technology in our own class work. Representatives will visit us from both the Library and the IT department, who will demonstrate available (electronic library) research and collaboration (e.g. Wiki, google docs) tools. As a CS course, IT will definitely be a large part of the course material.

7. Oral presentation: We want to be able to effectively speak about CS and Math. Students will give both a team presentation and an individual presentation (based on their formal writing topics)

Seminar Objectives (CS-Math specific)

8. We wish to understand several fundamental aspects of Computer Science/Math and how they are used in science, technology and everyday lives. This will be addressed in the topics we study and some of the presentations given by the instructor, peer mentors and guest speakers.

9. We wish to use these two semesters to build a community of fellow learners. You will be working with classmates and teammates on various topics, doing on-line research, posting findings and your opinions on the seminar's materials and papers.

Glasgow Caledonian University (GCU) and the Exchange Program

- An urban, relatively modern university, located in the center of Glasgow.
- Similar in size to UMB (campus and student-wise) and also serves a diverse population (by Scottish standards...).
- Webpage: `http://www.gcu.ac.uk`
- We have had exchange programs with GCU in recent years, and they included 1-week visits.

Glasgow Caledonian University (GCU) and the Exchange Program

- The exchange itself will take place in March (exact dates will be announced).
- 2-3 people from the CS FSC will visit GCU, several GCU students will visit us.
- The exchange visits do not overlap (GCU students will probably visit 1 week after our students go to Glasgow).
- **Everyone will be involved in this effort**, not only the visiting students.
- The exchange will take up a considerable chunk of the entire semester, starting this week.

Glasgow Caledonian University (GCU) and the Exchange Program

- The overall goal, as defined by the Dean is to build a community and interact with students from different cultures.
- In the past, some students went on to do a semester abroad.
- The School of Engineering and Built Environment at GCU includes computing research (Interactive and Communications Engineering).
- Webpage: `http: //www.gcu.ac.uk/isetr/researchareasandthemes/ interactiveandcommunicationsengineering`.
- Focusing mostly on games, augmented reality, networks etc.

The Combined Project Overview

- In collaboration with UMB's Engineering FSC (instructed by Prof. Walter Buchwald).
- In collaboration with UMass Amherst's Prof. David McLaughlin (ECE Department).
- ECE 361 at UMass Amherst – students will build model cars using Arduino processors and sensors to control the vehicle movement.
- In CS we'll do the Wifi connection between cars.
- The idea – building a game interface where students can control the cars and race/compete/play/fight/collide with each other

Some Details

- Students will be divided into 9 teams of 2 (by this weekend! And that's a firm deadline).
- Each team from CS FSC will team up with one team from Engineering FSC
- Each UMB team will team up with 2 teams from GCU
- Help will be provided by UMass Amherst's students and by our mentors.