Today’s Topics

- Welcome
- What is CS?
- Course Overview
- Administration

- Terms & Concepts
- Programming Languages
- Algorithms
Welcome to EECS 183!

- Instructors
  - Chandra Boyapati <bchandra@umich.edu>
  - Mary Lou Dorf <mdorf@umich.edu>

- Discussion Instructors

- Graders
What EECS 183 is About

- A first course in computer programming

- Gain knowledge:
  - Grasp fundamentals of how programs work
  - Understand the programming process

- Gain skills:
  - Learn basics of programming (in C++)
What EECS 183 is About

- This course is NOT about USING software
- It is about designing and writing software
Almost every major challenge facing our world is turning to computing for a solution

- Conquering disease
- Eliminating hunger
- Improving education
- Protecting the environment
CS is in Medical

- genetic databases: improve usability of
- infectious disease outbreaks: prevent, detect, respond to, and manage
- improved scans
CS in Transportation
CS is in Entertainment

- Super Mario Galaxy 2
- Avatar
- StarCraft II
- Shrek
CS is in Environmental Science

- monitor rivers, forests, farms, oceans, air
Profession that use/apply CS

- Scientist
- Doctor
- Business professional
- Financial analyst
- Etc, etc, etc, etc
Profession that use/apply CS

- Scientist
- Doctor
- Business professional
- Financial analyst

challenge: come up with a career that does NOT use CS
Social Media

- Social Media Revolution 2011
  - http://www.youtube.com/watch?v=3SuNxoUrnEo
  - http://www.youtube.com/watch?v=ypmfs3z8esI
  - http://www.youtube.com/watch?v=mgp7GwHxV14
  - http://www.youtube.com/watch?v=emx92kBKads
What does this course offer you? Future Job Possibilities

- Bureau of Labor Statistics
  - Computer systems design
    - Grow by 39.5%
    - Add ¼ of new jobs in scientific & technical services
  - Management, scientific, technical consulting
    - Grow by 60.5%
  - Network systems and data communications
    - Grow by 81.5%
Growth in STEM Jobs

Percentage Of New STEM Jobs By Area Through 2018

- Computing 71%
- Software Engineering 27%
- Computer Networking 21%
- Other Computing 3%
- Systems Analysis 10%
- Database Admin. 2%
- CS/IS Research 1%
- Other 1%
- Life Sciences 4%
- Mathematics 2%
- Traditional Engineering 16%
- Physical Sciences 7%

Reality
- Not enough students for jobs available
- CS students are highly sought after
- CS minor also very desirable
2009-2010 Stats on job fairs

- Undergrad Majors Most Requested
  - Computer Science
  - 63% of jobs (58% in 2009-2010)
  - 2,592 requests (1,098 requests in 2009/2010)

- Highest of any major
## Internships/Full-Time Salaries

<table>
<thead>
<tr>
<th>2009-2010</th>
<th>Average Salary</th>
<th>Median Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internships</td>
<td>$4,797 / month</td>
<td>$4,940 / month</td>
</tr>
<tr>
<td>Full-Time</td>
<td>$73,910</td>
<td>$75,000</td>
</tr>
</tbody>
</table>

Plus
- Assistance in room/board
- Travel
- Moving expenses
First course in computing for LS&A students
  - For LS&A majors and non-majors
  - Engineering students should take ENGIN 101

Lead into EECS 280
Thinking about 183 vs. 280?

- See a CS advisor (call 763-2305 for appointment)
- Score $\geq 3$ on the C++ AP exam places you out of 183
- Score $\geq 4$ on the Java AP exam places you out of 183
- Experience writing code – language doesn’t matter
Course Administration

- http://ctools.umich.edu
  - Syllabus
  - Policies & Procedures
  - Lecture Slides
  - Past Exams
  - Sample Code
  - Assignments
  - Links
Textbooks

- **Required:**
  - CodeLab membership (www.tcgo1.com)
  - $25.00

- **Optional text book:**
  - Many possibilities
  - Earlier version is also OK and may save you money
Getting Information

- Go to the CTools site!

- Read your e-mail!
  - Class e-mail group to be set up by the teaching staff
  - Membership mandatory
  - We assume you read everything sent to this list!

- Google

- phorum.eecs.umich.edu
When you have questions

- Regarding HELP with course materials & projects
  - www.phorum.eecs.umich.edu
  - 183help@umich.edu
  - See anyone on the teaching staff (office hrs posted)

- Regarding project submission or regrade requests:
  - go to your discussion instructor

- Regrade requests
  - Must be made in **writing within 7 days** of the project or exam being handed back
  - Procedure detailed on website (Resources section)
Academic Integrity

- Students must follow Engineering Honor Code

- Violations will be reported to the Engineering Honor Council and/or the LS&A Academic Standards Board

- See LS&A document “Academic Integrity in the College of LS&A”

- See “EECS 183 Cheating Policy”
EECS 183 Cheating Policy

- First two projects must be done individually.
- The rest of the projects may be done as a “pair”.
  - Two people, one computer
- Discussing concepts is generally OK, exchanging or copying files or written work is NEVER OK
- Come to the teaching staff for help if:
  - you have questions about course material
  - you are having trouble with the assignments
  - you have uncertainty about cheating policy
  - you feel like it
Overall Course Grading

- Exams (3): 57%
- Projects: 35%
- Codelab: 7%
- Survey/Evals: 1%
Assignment Deadlines

- Programming Assignments
  - Always due by **midnight** on the due date specified
Program grading guidelines (Will not hold on all programs)

- **Functionality and Correctness**: 86%
- **Structure, Style, Comments, etc.**: 14%
Late Policy

- 3 “late days” for the semester with NO penalty
  - Submit as normal.
  - We ALWAYS take last autograder submit and will determine late days accordingly

- Late days tracked through ctools/gradebook
- 4th late day, graded at 50% off
- 5th late day, automatic 0
Late Policy

- Given flexible late penalties, exceptions granted only under the most extraordinary circumstances
- PLAN for things to go wrong!
- We strongly suggest you NOT use your late days for the early projects – they will get harder
Bonus Points

- Promote starting early
  - 2 days early: 5% bonus points
  - 1 day early: 2.5% bonus points
Exam schedule: posted on syllabus

- Midterms Exams (evening)
  - Week 6: Wed. Feb 8 6:00 - 7:30 pm
  - Week 12: Wed. March 21 6:00 - 7:30 pm

  - Rooms will be on the syllabus

- Final Exam
  - Mon April 23 7:00-9:00 pm
  - NO EARLY FINALS regardless of circumstances

  - Rooms will be announced later
Your SITES account is all that is needed

For home use:

- PC users: Visual C++ 2010 Express

- Mac users: xcode
Computer Accounts & Software

- All projects are autograded
- We use linux machine and g++
- Stick to standard C++
Classroom Rules

- **OK**
  - Eating or drinking - OK if the room permits it
  - Stepping out to take a bio break
  - Asking questions at any time
  - Correcting me when I make a mistake

- **Not wise – but OK**
  - Coming late or leaving early
  - Skipping class: but you’re responsible for all covered
Classroom Rules

- NOT OK
  - Doing things that distract other students or make it difficult for us all to learn
Other Rules

- NOT OK
  - Skipping class or sleeping in class and then expecting staff to repeat lecture in office hours
Other Rules

NOT OK

- Skipping class or sleeping in class and then expecting staff to repeat lecture in office hours
- Waiting to the last minute and asking staff to review the whole semester in office hours
Other Rules

- NOT OK
  - Skipping class or sleeping in class and then expecting staff to repeat lecture in office hours
  - Waiting to the last minute and asking staff to review the whole semester in office hours
  - Waiting to the last minute to start projects and then asking dozens of questions via email/phorum and whining because we are not giving you the answers
Best Way to get an ‘A’

- Come to lecture
- Start assignments early
  - Submit early
  - Submit often
- Attend discussion section
- Ask questions