Introduction

CSCI 201
Principles of Software Development

Jeffrey Miller, Ph.D.
jeffrey.miller@usc.edu
Outline

• Introduction
• Syllabus
Have you traveled out of the United States? If so, stay standing.

Was C/C++ the first programming language you learned? If so, stay standing.

Have you ever been to a USC football game? If so, stay standing.

Are you a CECS or CSCI major? If so, stay standing.

Do you wear glasses or contact lenses? If so, stay standing.

Have you ever been to Alaska? If so, stay standing.

Did you play a sport in high school? If so, stay standing.

Are you originally from California? If so, stay standing.

Are you a first generation college student? If so, stay standing.

Were you ever a Girl Scout? If so, stay standing.
My Background

- BS in Computer Engineering and Computer Science in 2002
- MS, Ph.D. in Computer Science in 2002, 2007
- Adjunct Professor from 2002-2007
- Assistant/Associate Professor from 2007-2013
- Associate Professor of Engineering Practice at USC from 2013-present
- Worked part-time and full-time as a system administrator, junior programmer, intermediate programmer, senior programmer, technical lead, chief architect, director of engineering, and founder of a company
- Still do consulting work for all types of applications and companies, including expert witness work on legal cases
Research Interests

▪ Ethics with Driverless Vehicles
▪ Intelligent Transportation Systems (ITS)
  › Routing algorithms
  › Dynamic graph algorithms
  › Data gathering and mining
▪ Vehicular Networking
  › Vehicle-to-Vehicle (V2V)
  › Vehicle-to-Infrastructure (V2I)
  › Vehicle-to-Vehicle-to-Infrastructure (V2V2I)
▪ Computer Science Education
Ethics with Driverless Vehicles

- You are in the middle of a three lane road with cars next to you on each side and a large obstacle in your lane. Assume you can’t stop before hitting the large obstacle.
  > What do you do?
What if you are by yourself and the neighboring vehicles have families of four in them?
What if the neighboring vehicles were school buses full of children?
Ethics with Driverless Vehicles

- What if the neighboring vehicles were motorcycles?
  - What if one motorcyclist had a helmet and the other didn’t?
Students lose interest in STEM fields based on

- Stereotypes
  - “Boys are good at math and science, girls are good at art and history”
  - “Only nerdy white guys are programmers”
- Lack of encouragement
  - “My parents don’t even know what programming is”
  - “My friends don’t want to program”
CS@SC Summer Camps
Outline

• Introduction
• Syllabus
Course Description

- Object-oriented paradigm for programming-in-the-large in Java; writing sophisticated concurrent applications with animation and graphic user interfaces; using professional tools on team project.
- We will port over all of your C++ knowledge to Java
- By the end of the semester, you should be more proficient in Java than you are in C++
- You will understand how to program large-scale applications
- You will understand general software engineering principles and methodologies
- Prerequisite – CSCI 104L – Data Structures and Object-Oriented Design
Textbooks

Office Hours

- The course staff has office hours in SAL open lab:
  - Monday-Saturday from 10:00a.m.-8:00p.m.
- My office hours in SAL 342 are:
  - Tuesday 6:00-7:00a.m., 12:30-1:30p.m.
  - Thursday 6:00-7:00a.m., 1:30-3:30p.m.
  - Any day by appointment
- Piazza is also open 24 hours a day for questions
Grading

- Labs 10%  Written Exam #1 15%
- Assignments 20%  Written Exam #2 15%
- Group Project 30%  Lecture Attendance 10%

Grades will be based on a curve that operates in favor of the students. The following percentages are guaranteed though. If the average is higher than 80%, the average will be the cut-off between a B- and a C+.

\[
\begin{array}{|c|c|c|}
\hline
\text{x} & \text{Grade} & \text{X}\text{.X} & \text{X}\text{.X} \\
\hline
\geq 93 & A & 73 & < x < 77 & C \\
90 & A- & 70 & < x < 73 & C- \\
87 & B+ & 67 & < x < 70 & D+ \\
83 & B & 63 & < x < 67 & D \\
80 & B- & 60 & < x < 63 & D- \\
77 & C+ & x & < 60 & F \\
\hline
\end{array}
\]

In fall 2018, 91.84% of the class earned a B- or better, and the average was 86.49% before extra credit.

Infall 2018, 91.84% of the class earned a B- or better, and the average was 86.49% before extra credit.
Exams

- Exams (30%)
  - The written exams are closed book with one 8.5”x11” double-sided paper of **hand-written** notes
  - The written exams will consist of theoretical questions and may have code to be analyzed, though very little code will be required to be written.
  - Previous exams and solutions are posted on the course web site

<table>
<thead>
<tr>
<th>Written Exam #1</th>
<th>Thursday</th>
<th>February 28, 2019</th>
<th>7:00 p.m.-8:50 p.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Exam #2</td>
<td>Monday</td>
<td>May 6, 2019</td>
<td>8:00 a.m.-10:00 a.m.</td>
</tr>
</tbody>
</table>
Exams (cont.)

- Exams can only be taken on the date and time scheduled (Note: DSP students coordinate with me ahead of time)
- There are no makeup exams
- If you must miss an exam because of an emergency, you must provide me with documentation as soon as possible
  - Approval will be based solely on my discretion based on a documented illness or emergency
- If an excuse is not approved, you will receive a 0 on the exam
- If the excuse is approved...
  - For written exam #1, the percentage will be added to written exam #2
  - For written exam #2, you will receive an Incomplete in the course and have to make up the exam based on the conditions of an Incomplete
Labs

- Labs (10%)
  - The TA/CPs will lead the lab section each week.
  - The lab program will reinforce the topics covered.
  - Each lab will be graded on effort, attendance, completion, and understanding.
  - You must attend your own lab section.
  - You will be asked one or more questions by a lab assistant when you finish the lab, which you must answer correctly to receive full credit for the lab.
  - Labs are worth 0.8% each, and the lab grade is worth 10% total.
    - Any percentage earned over 10% does not count in the final grade.
Assignments

- Assignments (20%)
  - The program needs to compile, and grading will only occur if the program is able to be run.
  - Grading criteria will be provided at the time the assignment is given.
  - The graders will grade the assignments, and the TA will enter scores in Blackboard
    - If any questions arise based on the grade on the assignment, students will submit a formal regrade request via an online form
      - There is only one regrade request allowed per assignment, so all information must be included during the form submission
    - The TA will review the request and approve or deny it
      - If the request is denied, the original grade will stand
      - If the request is approve, the TA will forward the request to a grader (possibly a different one than who originally graded the assignment)
        » The TA will then enter the updated grade into Blackboard
    - If any concerns still exist, the student will need to speak with the professor in person

- Assignments will be submitted via Github/Blackboard and are due by 11:59 p.m. on the due date (see Late Policy).
Attendance

- Attendance (10%)
  - Attendance will be taken during lecture
  - Students can attend any of the lecture sections to get credit
  - To receive full credit, you must attend 26 lectures (there are 30 total lectures)
  - If you attend more than 26 lectures, no additional credit is earned
  - If you must miss a lecture, there is no make-up
    - There are more than 26 lectures during the semester, so you are able to miss lectures without penalty to your final grade
  - You must be present at the time attendance is taken, which will be at a different time each lecture, to earn credit for that day
Project

- Project (30%)
  - The project in the class will be assigned and discussed about half-way through the semester.
  - The project will consist of between 4-6 students.
  - The software engineering process including high-level requirements, technical specifications, design, architecture, implementation, testing, and formal documentation will be required.

- The project deliverables will be submitted via Blackboard and are due by 11:59p.m. on the due date (see Late Policy).
Late Policy

- There is no late policy.
  - In extenuating circumstances, students may be allowed to submit an assignment late, but only if approved by the professor. This typically should be done before the due date, though I understand some situations may not allow this.
  - For any assignment or project that is submitted after 11:59p.m. on the due date, the student will receive a 0.
Academic Integrity

- The Viterbi School of Engineering’s policy on Academic Integrity can be found at http://viterbi.usc.edu/academics/integrity/.
- All students are expected to understand and abide by these principles.
- SCampus (http://scampus.usc.edu), the Student Conduct Code, contains information about violating University standards in Part B Section 11.
- Any potential violations will be taken seriously and the proper academic process will be followed, including reporting to the USC Student Judicial Affairs and Community Standards (SJACS).