Software Engineering

- The application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software.

CS 314 Software Engineering

- Methods used to develop large-scale software projects in industry emphasizing design, implementation, and testing.
- Semester “internship” to prepare for internship or job
  - Teamwork
  - Processes
  - Tools
  - Technology
- Build a browser application and the companion server.

Evolution of Internet Applications

- Static server pages
  - browser loading static pages from a server
- Active server pages
  - browser loading dynamically generated pages from server
- Mobile environments
  - m.xxx.com pages sized for smaller screens
  - mobile application environments (iOS, Android)
- Single page applications
  - browser application downloaded from server on a single page
  - interacts with a server for data and services
Assumptions

• Students meet prerequisites
  – CS 253
  – Implies CS 160, CS 161, and CS 200

• Students know how to
  – Solve problems
  – Create object oriented solutions
  – Program and debug in Java

Expectations

• Lecture attendance is critical.
  – No textbook! Ask questions in class.
  – Complete activities during / between classes.

• Product Increments completed iteratively.
  – Make visible contributions.
  – Don’t procrastinate.
  – Teamwork is the key.
  – Talk to me if your team is having a problem.
Grading

- Elements
  - 40% Midterm and Final Exams (60% required to pass course)
  - 25% Product Increments
  - 25% Process Activities
  - 10% Classroom/Homework

- Late policy
  - 12 pm is noon, 12 am is midnight. Know the difference.

Team Activity Distribution During Sprint
Résumé before CS 314

- Bachelor of Science, Computer Science, 20xx, GPA x.x
  Colorado State University, Fort Collins, Colorado
  - 4xx Courses

- Skills
  - Java, C++, C, Eclipse, ?

- Experience
  - ?

Résumé after CS 314

- Bachelor of Science, Computer Science, 20xx, GPA x.x
  Colorado State University, Fort Collins, Colorado
  - Completed Scrum-based team project that created a mobile single page application interacting with an SQL database.
  - 4xx courses

- Skills
  - Scrum, Test Driven Development, Configuration Management, Continuous Integration, Unit and Coverage Testing, Inspections, Maintainable Code
  - GitHub, Maven, Travis, Zenhub, JUnit, Emma, Code Climate, Better Code Hub
  - Java, Eclipse, IntelliJ, Javascript, JSON, React, SQL, SVG, KML

- Experience
This Week

• Topics
  – Configuration Management
  – Teamwork

• Canvas
  – Identify team members
  – Submit your GitHub username
  – Submit your personality type
  – Submit your teamwork questionnaire responses

Identify your team members

• Teams of four
  – schedule compatibility

• Pick an empty team on Canvas and add yourselves.
• Choose yourselves or be assigned after the deadline
GitHub Username (www.github.com)

GitHub is a development platform inspired by the way you work. From open source to business, you can host and review code, manage projects, and build software alongside millions of other developers.