CPSC 315
Programming Studio
Fall 2020

Yoonsuck Choe

People

- Professor: Yoonsuck Choe
- Teaching Assistants
  - Zenhua He
  - Rahul Sridhar

Background on the Course

- "Capstone" to the lower-level classes.

- **Lots** of programming experience, in a team environment.

- To get prepared for any programming assignment in upper-level classes

- To be prepared for industry programming jobs (internships/co-ops)

"Studio" Course

- Programming as "art," "science," "engineering."
- The idea of a studio course is to have an environment where students can practice and refine their skills
  - Your skills should markedly improve over the semester
  - You should have plenty of interaction with and feedback from the professor/TA
  - Practice, practice, practice

"Writing Intensive" Course

- This is also a writing intensive course

- Minimum 2,000 words of writing, with multiple iterations of feedback.

- The content of the writing requirement would be technical writing (writing about your coding project).

Lectures

- We'll meet a minimum of 2/3 of assigned lecture periods.
  - Expect to meet most dates at the beginning of the semester
  - Will skip lectures later in the semester and during projects
- Lectures should be helpful for your programming work

Code Construction: Where It Sits (in the waterfall model)

System Specification

Requirements Analysis

Architectural Design

Detailed Design

Coding and Debugging

Unit Testing

System Testing

Maintenance

Topics

- Programming techniques and style
- Software design principles
- Basic collaborative programming skills
- Programming tools
- Project-specific subjects
- Writing effective technical documents

Projects

- 1 individual project and 2 team projects
- For the team project
  - 4 people per team max
- Might require use of specific tools, languages, approaches
- Topics from a wide range of CS fields
  - Lectures will cover additional material

Lab

- Lab times:
  - TA demos/tools instructions
  - Q and A
  - Use as team meeting/coding times
  - Code reviews
  - Status check on your progress

Code Reviews

- Might include code reviews
- Public review/comments on code/design/documentation/etc.
    - During lab or lecture times
- Programs you work on/submit will **not** be considered private, for this class
- You might be asked to present your code

Syllabus Review

- http://people.engr.tamu.edu/choe/courses/20fall/315
- Questions?

About Teamwork

- Working in a team is a major challenge for this course (both for you and for me), especially due to COVID-19.

- Look up on the web for info on teamwork.

- Do not slack off. Do not monopolize.

- If you have any issues with your team's dynamic/ chemistry, first try to reconcile. Report ASAP if it does not work out. Do not wait until the final project due date.

- Common problems: Not responsive to communication, cannot meet, divisive factions formed.

Common Mistakes

- Writing a lengthy code before compiling and running it. Try small bits at a time.

- Not testing your code.

- Waiting until the last moment/deadline.

- Not being proactive: Should have someone start working on parser when this week's submission is DB engine (e.g., for the second project).

- Only one person committing to GitHub.

- Uploaded to eCampus but did not finalize submission.

Plagiarism / Fraud

- We will use MOSS, an automated code plagiarism checker.

    - https://theory.stanford.edu/~aiken/moss/

- Will be checked within this semester's submissions and historical files.

- Multiple violations caught in the past.

    - Copied from other students
    - Copied from the same source online.

Credits

- Most of the course material for 315 we will use (including syllabus, slides) during this semester has been developed from scratch by Prof. John Keyser and former Prof. Jaakko Jarvi.

- Assignments/project details will differ from the past semesters.

- Long Mai and Allen Hurst at Improving Enterprises provided valuable feedback.

To Do

- Download and read this article:
  - Don Knuth's Turing Award Lecture:
  - "Computer Programming as an Art"
  - http://doi.acm.org/10.1145/361604.361612

- Read textbook chapters (see weekly schedule for chapters to read each week). There will be two quizzes (online) on the reading material.