Informatics 43

INTRODUCTION TO INTRODUCTION TO SOFTWARE ENGINEERING (AKA "COURSE OVERVIEW")

Today's Lecture – **What is this class about?**

- Course introduction
- Getting to know each other

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Teaching Staff

- Professor: James Jones
- TAs
  - Hang Du
  - Steven Ngo
  - Sahithi Reddy Chimmula
- Readers
  - Yang Liu
  - Antriksh Ganjoo

Course Basics

- Course: Informatics 43 – Introduction to Software Engineering

- Professor: Jim Jones (jajones@uci.edu)

- Live, in-person lectures in HSLH 100A, also recorded for asynchronous viewing

- See Course Schedule on Canvas

- Discussions are simply TA office hours — attendance is optional

Course Basics

- Questions
  - "ed" is where you can ask questions. Accessible via Canvas. This is preferred. When possible, post publicly so everyone can see answers, and answer.
  - Email
    - Questions may not be answered very close to the due date, so plan ahead
  - Discussion section office hours
- Announcements
  - Canvas announcements
- Recommended (but definitely NOT required) textbook: Tsui, Karam, Bernal, "Essentials of Software Engineering," Third or Fourth Edition

Material

- Lecture Slides: Canvas (Files section)
- Lecture Videos: YuJa (accessible via Canvas)
- Readings: websites and PDFs linked via Canvas

Discussion Sections

▶ Mostly used as office hours to meet with the TAs

▶ There may be some topics that the TAs present in some weeks if the need arises

▶ No attendance is required, but the TAs will be there to answer your questions

▶ We will share the Zoom links next week

▶ No discussion sections in Week 0

Quizzes

- 8 quizzes (see schedule)
- Lowest score dropped
- Schedule:
  - 4:20–4:50, 30 minutes. Accommodations for DSC students will extend this time appropriately.
  - Starting in Week 2, held every Tuesday
  - Quiz 8 will be on Thursday of Week 10 (Dec. 7)
- Rules
  - You must take it during this time
  - Open-notes, open-book Canvas quiz
  - Part multiple-choice, part free-form
  - **No collaborating—take it individually**

Course Exam

- One cumulative final exam

- Time/date: Tuesday, Dec 12, 4:00–6:00pm

- In-person, required physical attendance

- Closed notes

- Will be mostly based on the content included in the weekly quizzes

Grading (I)

- Quizzes: 40%
  - Lowest score dropped
- Four homework assignments: 30%
- Attendance quizzes: 5%
- Course exam: 25%

Grading (II)

- Performed by TAs and Reader
- Double-checked by Professor
- Disagreements
  - Resolve with TA first, then with professor
  - If you believe a mistake has been made prepare the following before arranging a meeting with the TA
    - What is the mistake?
    - Why is it a mistake?
    - Support that demonstrates your arguments
  - **You have one week from the time a grade is released to request a regrade. After that, all grades are final.**
- Keep up with your grades on Canvas!

Cheating

- DON'T DO IT!!
- All assignments are checked thoroughly for plagiarism
- Collaborating with someone else during a quiz is cheating
- Plagiarism/cheating consequences
  - Fail the assignment
  - Offense recorded with Student Affairs

Late Work

- Late work will not be accepted
- Truly extenuating circumstances will be evaluated on a case-by-case basis
    - Must provide official documentation (e.g., doctor's note)
    - Exceptions only granted by the professor
    - Contact professor as soon as possible
    - Contact professor with valid reasons

Rules for Success in INF 43 (I)

- Attend (watch) every lecture
  - Take notes—lecture slides alone not sufficient
  - Most quiz questions will be drawn from lecture material
  - Official place for announcements
  - Attendance quizzes are 5% of your grade
    - Many quiz questions will be drawn from these activities as well

Rules for Success in INF 43 (II)

- Complete the assigned readings
  - Take notes
  - Some quiz and test questions will be drawn from readings
- Configure Canvas to send you Canvas announcements via email
  - Canvas announcements primary method of class announcements outside of lecture
- Check your UCI email daily
- Check course Website often
  - For schedule, deadlines
- Work hard throughout the quarter
  - Expect some memorization and perceived tediousness
  - Not just at the end!

Retrieval Practice

https://www.youtube.com/watch?v=ZO8abw3DHxs&t=2s

- We will do semi-frequent retrieval practice in lecture (through Canvas quizzes)

  - Unless otherwise stated, these Canvas quizzes are ungraded for right/wrong answers; you get participation points for completing them

- More info: https://www.retrievalpractice.org

Course Content: Answering the following questions

- What is "software engineering"?

- How do we know what to build?

- How do we structure the software?

- How do we design the details of the software?

- How do we make software that meets the users' needs?

- How do we know that the software works?

- What process do we follow to develop the software?

Course Content: Topics

- What is software engineering?
  - Perspectives, definitions, essential qualities (complexity, conformity, changeability, invisibility)
- Software engineering principles
  - Rigor and formality, separation of concerns (modularity, divide and conquer, abstraction), anticipation of change, generality, incrementality
- Software failures/fiascos
  - Many related to requirements

Course Content: Topics

- Requirements Engineering (how do we know what to build?)

  - Requirements document (Homework 1)

- Use cases

- Software architecture (how do we structure the software?)

  - Several common architectural styles

Course Content: Topics

- Designs, models, notations

- User orientation (how to we make software that meets the users' needs?)

- Testing (how do we know the software works?)

  - (Homework 3)

Course Content: Topics

- Software process models (what steps do we follow to develop software?)

- Version control

  - Git (Homework 2)

- Project estimation

- Social responsibility of software engineering

Course Content: Your learning outcomes

By the end of this course, you will be able to:

- Describe the fundamental principles of SE
- Create a requirements document
- Create a use case model
- Describe what software architecture is
- Describe different software architectural styles
- Create a UML class diagram
- Create a black-box testing plan
- Create white-box test for different coverage criteria
- Describe different software process models
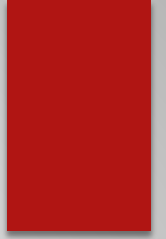- Identify the principles and practices of good user orientation

Quarter Schedule

Today's Lecture – **What is this class about?**

- Course introduction
- Getting to know each other

Who am I?

Attendance Quiz

Attendance quiz: Who are you?