





---

## Welcome to Software Engineering




## Lecture 01: Course Overview

---

Valentin Razmov

CSE403, Summer'05, Lecture 01




## Everyone Meets Everyone: Instructor

---

- Valentin Razmov
  - Ph.D. candidate, Computer Science & Engineering
    - M.Sc. (from UW) in 2001
  - Course-related Experience
    - 5 quarters as a TA in CSE403
      - One of the courses I enjoyed TAing the most!!
      - Authored 4 conference papers on education-related experiences from CSE403
    - 3 years of industrial experience across 5 different companies (including 3 internships)
  - Career Interests
    - Teaching; Project Management
  - Research Interests
    - Methods for Effective Teaching and Learning
    - Computer Systems Security

CSE403, Summer'05, Lecture 01




## Everyone Meets Everyone: Teaching Assistant

---

- Alan Liu
  - Ph.D. student, Computer Science & Engineering
    - M.Sc. (from UW) in 2005
  - Course-related Experience
    - several quarters as a TA in other capstone courses
  - Research Interests
    - Human-Computer Interaction

CSE403, Summer'05, Lecture 01




## Everyone Meets Everyone: You...

---

- We'd like to get to know you, so tell us a bit about yourself.

CSE403, Summer'05, Lecture 01



## Outline for Today

---

- Course logistics
  - Course web, mailing list, room, technology
- What is Software Engineering about as a discipline?
- What to expect from this course
  - Readings, assignments, projects
  - Unique aspects
- What you will have learned by the end of this course

CSE403, Summer'05, Lecture 01

## Course Logistics

- Course web
    - <http://www.cs.washington.edu/403/>
    - Will contain lecture/section materials, assignments, resources, latest class schedule
  - Class mailing list
    - Subscribe to it today!
      - Instructions are on the course web
  - Room: CSE403
    - For both lectures and sections, unless otherwise announced
    - Will have meetings in other rooms, so stay tuned!
  - Technology
    - Support has equipped the computer labs with the latest and greatest software, so you can do your job well
    - Will occasionally use **tablet PCs in the classroom**

CSE403, Summer'05, Lecture 01

## In Your Current Understanding, What Is Software Engineering?

- This is not a graded activity.
- Write your answer on a 3"x5" card, and put your names.
  - There is no right or wrong answer – we will return your card to you on the last day of the class, so you can see how much you've learned!

CSE403, Summer'05, Lecture 01

## What Is Software Engineering?

- There is no right or wrong answer...
- According to one colleague:
  - "Software engineering is about people working in **teams** under stress to create **value** for their **customers**."
- Throughout this class, as in this activity:
  - Everyone can add something of value to the discussion.
  - Everyone has a view of the overall picture, but maybe not a full view.
  - Together, we all can reach a more accurate understanding and, ultimately, higher quality results.

CSE403, Summer'05, Lecture 01

## What Software Engineering Encompasses

In contrast to many CS disciplines you have been exposed to, this one involves aspects of:

- Computer science** (incl. algorithms, data structures, programming languages, tools)
- Business and management** (incl. project management, scheduling, prioritization)
- Economics/marketing** (incl. what makes a product sell, niche markets, monopolies)
- Communication** (incl. managing relations with stakeholders – customers, management, developers, testers, sales)
- Law** (incl. patents, licenses, copyrights, reverse engineering)
- Sociology** (incl. modern trends in societies, localization, ethics)
- Political science** (incl. topics at the intersection of law, economics, and global societal trends; (public) safety)
- Psychology** (incl. personalities, styles, usability, what makes things fun)
- Art** (incl. GUI design, what makes things appealing)
- ... more?!

Hence, the flavor you get of the discipline will necessarily be "softer" and there will be fewer clearly right/wrong answers.

CSE403, Summer'05, Lecture 01

## What to Expect from This Course: Learning

- Learning = experience + reflection
  - "Learning requires practice and feedback."
    - Richard Felder
  - Experiences come from your work on a quarter-long team project
  - Reflection comes through readings, discussions in class, and homework assignments
- Critical skills for learners
  - Problem solving
  - Team work
  - Stress management
  - Communication
  - Self-assessment

CSE403, Summer'05, Lecture 01

## What to Expect from This Course: Readings

- "Rapid Development" by Steve McConnell
  - Main text: inexpensive, a good reference
- "The Pragmatic Programmer"
  - Strongly recommended, but not required
  - Some overlap with "Rapid Development, but more recipe-oriented (if that's what you want or need)
- Handouts, distributed in class
  - Short, targeted at specific topics of interest
- Articles online
  - Some already linked from the course web

CSE403, Summer'05, Lecture 01

## What to Expect from This Course: Projects

- Your make project proposals (and then vote on which projects to keep)
  - Start thinking about ideas today!
  - Sample project ideas are linked from the course web
- Project development in stages
  - Reflects modern methodologies for effective software project development
  - You get feedback from us after each stage, but also regularly during development at each stage
- Project teams need to be of size at least 6
  - Otherwise it'd be toy development, and you'd miss on some of the most important experiences

CSE403, Summer'05, Lecture 01

## What to Expect from This Course: Peer Reviews

- A standard form of *constructive* peer feedback used widely in industry
- Allows you to see yourself through the eyes of your teammates
  - ... and assess what they think you are doing well and what you are not doing so well
- Allows you to learn to provide useful feedback
- Peer reviews will *not* be used for grading purposes (but you need to participate)
- Peer reviews will be anonymous to students, but not to instructors

CSE403, Summer'05, Lecture 01

## What to Expect from This Course: Homework Assignments

- Individual assignments
- One-page reflective essays
  - ... asking you to relate project experiences to ideas from readings and/or class discussions
  - Emphasis will be on depth of reasoning, not whether you have the "right" answer
- Hands-on exercises
  - related to material discussed in class

CSE403, Summer'05, Lecture 01

## What to Expect from This Course: Unique Aspects

- Cross-disciplinary nature of the discipline
- Large teams
- You have the opportunity to propose and work on your own ideas
- Instructors in the coach role
- Mistakes along the way are encouraged, not penalized
- Few clearly right/wrong answers
- Plans (always) change
- Content topics: software design, testing, project management, etc.

CSE403, Summer'05, Lecture 01

## What to Expect from This Course: Grading Criteria (tentative)

- Evaluation based on both effort and quality
- Group project: 40%
  - LCO (6%), LCA (6%), zero-feature release (6%), beta release (10%), final release (12%)
- Homework: 20%
  - 3-4 individual assignments
- Midterm: 12%
- Final exam: 20%
- Participation: 8%
  - In class and on the project

CSE403, Summer'05, Lecture 01

## What to Expect from This Course: To Succeed It Takes...

- Students in the past had been spending on average ~15 hrs/week on this course.
- Before the end, we would like to have seen evidence that you personally have learned.
- Be proactive and open to learning.
- Be responsible toward your teammates.
- Honesty is prized highly.
- Do not skip assignments / miss deadlines – they are all important (and not hard to complete / meet).

CSE403, Summer'05, Lecture 01



## What You Will Have Learned by the End of This Course

- Get exposure to some of the best software development practices in use today
- Learn how to more effectively collaborate with others toward a common goal
- Understand how software is produced – from conception to shipping and subsequent maintenance
- Have experience working in a larger team toward a common goal
- Be able to lead an intelligent conversation with expert practitioners in the field of software engineering
- Understand the issues and tradeoffs involved in making decisions as software engineers and project managers

CSE403, Summer'05, Lecture 01