



Welcome to Software Engineering

"... 'cause if you're gonna play the game, boy,
you've got to learn to play it right."
-- from "The Gambler"

Jun 21, 2006

CSE403, Summer'06, Lecture 02



Lecture 02: Course Overview

Valentin Razmov

Jun 21, 2006

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Everyone Meets Everyone: Instructor

- n Valentin Razmov
 - n Ph.D. candidate, Computer Science & Engineering
 - n M.Sc. (from UW) in 2001
 - n Course-related Experience
 - n CSE403: 1 quarter as instructor + 5 quarters as a TA
 - n One of the courses I enjoyed being involved in the most!!
 - n Authored 5 conference papers on education-related experiences from CSE403
 - n 3 years of industrial experience across 5 different companies (including 3 internships)
 - n Career Interests
 - n Teaching; Project Management
 - n Research Interests
 - n Methods for Effective Teaching and Learning

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Everyone Meets Everyone: Teaching Assistant

- n Lincoln Ritter
 - n Ph.D. student, Computer Science & Engineering
 - n M.Sc. (from UW) in 2006
 - n Course-related Experience
 - n Several quarters as a TA in other CS courses
 - n Research Interests
 - n Computer graphics and visualization

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Everyone Meets Everyone: You...

- n We'd like to get to know you all, so please tell us a bit about yourselves.

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Outline for Today

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

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Course Logistics

- Course web
 - <http://www.cs.washington.edu/403/>
 - Will contain lecture/section materials, assignments, resources, latest course schedule
- Course mailing list
 - You should all be subscribed by now.
 - If not, instructions are on the course web.
- Room: CSE305
 - For all class sessions, unless otherwise announced
- 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

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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.

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What Software Engineering Encompasses

- In contrast to many other CS disciplines you have been exposed to, this one involves aspects of:
 - Computer science** (incl. algorithms, data structures, prog. 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. negotiations; 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 to users)
 - ... more?!
- Hence, the flavor you get of the discipline will necessarily be "softer" and there will be fewer clearly right/wrong answers.

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What to Expect from This Course: Learning

- Learning = Experience + Feedback + Reflection**
 - Experiences come from your work on quarter-long team projects
 - Feedback comes from instructors, peers, guests, etc.
 - Reflection comes through readings, discussions in class, and homework written assignments
- Iterating further strengthens the learning and retention of knowledge.
- Critical skills for learners
 - Problem solving
 - Team work
 - Stress management
 - Communication
 - Self-assessment

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What to Expect from This Course: Readings

- "Rapid Development" by Steve McConnell
 - Main text: inexpensive; a very good reference after the course
 - Specific readings will be suggested throughout the quarter.
- "The Pragmatic Programmer" by Andrew Hunt & David Thomas
 - Main text: more recipe-oriented and not as complete as "Rapid Development", but has sample problems
 - Very well written and organized
- "Death March" by Edward Yourdon
 - Recommended (but not required) reading
 - Supplements the above two by its unique perspective from industry
- Handouts, to be distributed in class
 - Short, targeted at specific topics of interest
- Articles online
 - Some are already linked from the course web.

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What to Expect from This Course: Projects

- You make project proposals (and then vote on which projects to develop)
 - Start thinking about ideas today!
 - Project ideas united under a common theme: "remote collaboration" (more details on this will follow)
 - Project ideas from previous quarters are linked from the respective course webs.
- Project development in stages
 - Reflects modern methodologies for effective software project development
 - You get feedback from us after each stage, but also regularly during the development at each stage.
- Project teams need to have at least 5 members.
 - Otherwise it'd be toy development, and you'd miss on some of the most important experiences.

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What to Expect from This Course: Peer Reviews

- n A standard form of *constructive* peer feedback used regularly and widely in industry
- n Allows you to see yourself through the eyes of your teammates
 - n ... and assess what they think you are doing well and what you are not doing so well
- n Allows you to practice providing useful feedback
- n Peer reviews are anonymous to students, but not to instructors.
- n To foster individual accountability within teams without causing pressure, the final round of peer reviews can be used for grading purposes.
 - n Let's vote: *Do you accept this kind of accountability?*

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What to Expect from This Course: Homework Assignments

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

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What to Expect from This Course: Unique Aspects

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

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

- n Evaluation based on both effort and quality
- n Project: 40%
 - n LCO (6%), LCA (6%), zero-feature release (6%), beta release (10%), final release (12%)
 - n Includes both a team grade and an individual grade.
- n Homework: 20%
 - n 3-4 individual assignments
- n Midterm: 12%
- n Final exam: 20%
- n Participation: 8%
 - n In-class and intangibles

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

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

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What to Expect from This Course: To Succeed It Takes... (cont.)

- n "You get out of this class exactly as much as you put into it."

	<p>M21.5 I could have extracted more value out of this course by ...</p>	<ul style="list-style-type: none"> 3 Doing more of the readings. 3 doing some of the suggested reading that I didn't have the time to read thoroughly 3 Forcing myself to apply some of the practices despite the limited scope of the project. In the very least it would have exposed me directly to some of them. 3 taking less classes...then I would have more time to spend on this class 3 Doing more of the suggested readings. 3 I could have taken more initiative and contribute to and learn about other aspects of the project such as project management. 3 Being able to get up in the morning. 3 I think a larger team would have made for an even more interesting learning experience.
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