

# SE463

## Software requirements specification & analysis

Overview and admin notes

Fall 2011

Daniel Berry

# Welcome

- ... to Software Requirements Specification and Analysis
- This course is known as:

- ECE 451
- CS 445
- CS 645
- SE 463

But we're going to call it "SE 1"

- It is one course of a three-course set on software engineering:
  - ECE452/CS446/SE464 (SE 2): Software Design and Architecture.
  - ECE453/CS447/SE465 (SE 3): Software Testing, Quality Assurance, and Maintenance.

# Changes

- Previously, the courses could be taken only in order, as they shared an incremental project
  - SE1 → SE2 → SE3
- In Fall 2008, the three courses were de-coupled, so they can be taken (in theory) in any order
  - This is the third such offering of SE-1
  - The project is new this term (tho similar in theme to previous ones)

Dan



# Dan

## Prof. Daniel Berry

- DC 3329
- Office hours: by appointment made by e-mail
  - Feel free to knock if the door is closed
- Email: [dberry ATT uwaterloo DOTT ca](mailto:dberry ATT uwaterloo DOTT ca)
- Web: <http://se.uwaterloo.ca/~dberry>

# Contacting Us On Class Issues

Please use the course account email instead of my personal email, unless it is about a personal or administrative matter:

- [se463 ATT student DOTT cs DOTT uwaterloo.ca](mailto:se463_ATT_student_DOTT_cs_DOTT_uwaterloo.ca)
  - Ali, the head TA, reads this too.

# Dan outside of the classroom

- I'm a researcher in the field of software engineering, particularly requirements engineering
- I specialize in:
  - Requirements Elicitation
  - Ambiguity in Natural Language Requirements Descriptions
  - Creativity in Requirements Elicitation
- I dabble also in Electronic Publishing: formatting, typography, etc.

# Dan outside of the university

- I swim, skate (both kinds), and ski
- I'm considered a good cook
- I am even semi-professional as a cook, having catered two weddings, one not my own!
- I am a "Star Trek" and a "Big Bang Theory" fan
- I write scientific satire
- I write Biblical commentary
- I have 4 grandchildren
- I love programming

[Now, do I seem human enough? 😊]

# Back to the course

- Each week, we expect that you will attend
  - Two 80-minute lectures
  - Zero or one 50-minute tutorial, led by Ali
- Tutorials are important!

# Grading scheme

Project	40 %
Assignments	10 %
Final exam	50 %
<b>Total</b>	<b>100 %</b>

- Grad students will be required to do an extra project worth 10% (grade will be rescaled)

# Course web page

<http://www.student.cs.uwaterloo.ca/~cs463>

- Lots of details will appear there over the term
- Watch for announcements too.

# Course newsgroup

`uw.se.se463`

- You are on your own to find a newsreader (Thunderbird works)
- This is the best place to ask clarification questions about the project.

# Course email

[se463 ATT student DOTT cs DOTT uwaterloo DOTT ca](mailto:se463_ATT_student_DOTT_cs_DOTT_uwaterloo_DOTT_ca)

- Please send most questions here
  - Ali will read and redirect, e.g., to Dan as appropriate
  - You may send Dan questions that relate to course administration or are personal in nature directly.

# Grad students

- ... who are taking this as CS645
  - Please send Dan e-mail ASAP!
- You will be required to do a 20 minute lecture and written report on a topic related to the course material
  - I'm very open to possible topics
  - It's worth 10% of your final grade
- [NOTE TO ALL!] Grad lecture material can be on the exam!

# Course project

- To be done in groups of 3 or 4, self-chosen
  - You will all get the same project grades
    - ... unless your partners think you're loafing
- You will determine and then specify the requirements for a fully bi-directional version of some word processor, e.g., TextEdit, Notepad, WordPad, MS Word, etc.
- Doing so will allow you to apply the requirements engineering principles and techniques discussed in lecture to the problems of eliciting, documenting, and validating the specification of a non-trivial software system.

# Working in groups

- Don't just pick your friends
- Consider:
  - Similar / complementary work habits, goals  
e.g., early bird vs night owl, OCD vs slacker
  - Need 1+ person with good organization skills for project co-ordination
  - Need 1+ person with good writing skills
- Ideally:
  - Equitably distribute work load
  - Minimize resentment

# Working in groups

- The purpose of working in groups is to get you used to working in groups
  - I mean, it's not just 'cos the course staff is lazy
- Working in groups is a key skill for success in industry.
  - It's also really hard to teach or lecture about, so we try to make sure that you have some interesting experiences.

# Working in groups

- Your project is not a collection of little independent tasks; instead, there will be several work stages for each deliverable:
  - Discuss and allocate tasks to group members
  - Work on tasks (alone or not)
  - Distribute draft solutions
  - Meet to discuss drafts, evaluate, iterate, plan
  - Revise, evaluate, iterate
  - Stitch together final draft and submit

# Course project

- This is the first time we have used bi-directional word processing as the project.
  - So we're still expecting a few glitches along the way
  - But specifying something real is much more interesting than a mocked-up example
- Your group will be assigned a TA, who will grade all of your submissions
  - And thus you'll get some consistency in marking too

# Course project

- Your job:
  - Create detailed models of the various entities and processes
  - To decide what features should be there
  - To decide the correct functionality of these features
  - Eventually, use these models and decisions to create a user's manual or an SRS describing your bi-directional word processor

# Course project

- Your job, Cont'd:
  - For the user's manual or SRS, you will also describe a set of *new features*, not in the existing system
    - You should be thinking of these as you progress through the project
  - Without these new features, the maximum grade your user's manual or SRS can get is 70/100

# Learning the ropes

- You will get a lesson in reading bi-directional text in a tutorial soon
- You will participate in a brainstorming session to identify requirements (not with your group, but with others that we choose)
- The anonymous ideas found by all sessions will be shared with the whole class
- Your group will decide on a consistent set of requirements and then model and specify a word processor with these requirements in the form of a user's manual or SRS

# New features

- The final deliverable is a user's manual (UM) or an SRS
  - You will be expected to devise a set of new features for the bi-directional word processor of your choice
    - You don't have to implement them (or anything else!), pretend they already exist and clearly mark them as **new features** in the UM or SRS

# Course software

- You will need to use:
  - A UML modelling / drawing tool
    - We recommend MagicDraw (free to UW students)
    - But you could use MS-Visio, OmniGraffle, dia or ....
  - A document editor
    - MS-Word / OpenOffice
    - OR use LaTeX
- Many more details on course webpage under “project info”

# First tutorial

- Will take place on Friday as scheduled.
- Ali, the head TA, will give you an overview of the course
- There will also be free time to pick your group partners.

# First assignment

- Send email to the course account ([se463 ATT student DOTT cs DOTT uwaterlooDOTT ca](mailto:se463 ATT student DOTT cs DOTT uwaterlooDOTT ca)) with your group composition, formatted like this:

```
Fine, Larry 234567891 larry larry@threestooges.org  
Howard, Curley 345678912 curley curley@threestooges.org  
Howard, Moe 123456789 moe moe@threestooges.org
```

If the message is not in the specified format, it will be returned for correction!

- We will assign your group a number and a TA, and let you know by email.
- Groups are due by 5pm on Fri of second week
  - But earlier is better ...
  - You can use the course newsgroup as a dating service if you can't find a group of 3 or 4.

# Course text

- There are no required texts or course notes.
- If you want extra reading, we recommend the references under the Readings section of the course Web page, particularly those by Gause and Weinberg
- If we find anything relevant, we will add it or a reference to it to the course Web page.

# Sources

- The course materials are derived from many sources, especially slides created by:
  - Prof. Jo Atlee (course designer)
  - Prof. Dan Berry
- With additional materials by:
  - Prof. Nancy Day
  - Prof. Mike Godfrey
  - Dr. Davor Svetinovic
- Any missteaks are most likely ours 😊

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