Lecture 1

Software Requirements Engineering

COM S/SE 4090 & COM S 5090

Robyn Lutz

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Contacts & office hours (see Canvas for any updates)

Robyn Lutz: rlutz@iastate.edu
Office Hours: 3:30 Wed (230 ATAN); 1 Fri (https://iastate.zoom.us/my/rlutz), & by appointment

TAs' Office Hours start next week:
Carter Wunsch (10 hrs/wk)
Email: *cwunsch@iastate.edu*
Office hours: 12:30 Wed (0112 Pearson?) & by appointment

Abdurahman Mohammed (10 hrs/wk)
Email: *abdu@iastate.edu*
Office hours: 11:30 Wed (0112 Pearson?); 2 Thurs (https://iastate.webex.com/meet/abdu) & by appointment

Pratik Maitra (10 hrs/wk)
Email: *pmaitra@iastate.edu*
Office hours: 4:30 Wed (0112 Pearson?) & by appointment

Schedule (tentative)

I. ***Discovering and Analyzing the Requirements:***
Sept. 18: Homework 1 due

II. ***Communicating the Requirements:***
Oct. 2: Homework 2 due
Oct. 7: Review
Oct. 9 Exam 1

III. ***Validating the Requirements***
Oct. 30: Homework 3 due
Nov. 13: Team Project delivery: Software Requirements Specification (SRS)

IV. ***Evolving the Requirements***
Nov. 13: Review
Nov. 18: Exam 2
Dec. 2, 4, 9, 11: 5090 Presentations: Attendance required for all 4090/5090 students
Tues, Dec. 16, 9:45-11:45: RE's Future. Class meets; no final exam.

Textbook & readings

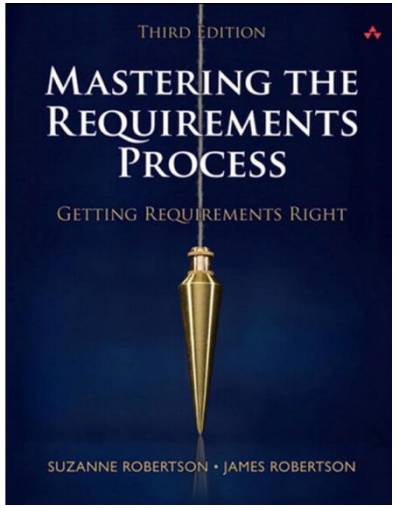
Required:

- No required textbook.
- Required papers and case studies will be posted on Canvas

Optional:

- Supplemental materials will be posted with some lectures
- Optional textbook: Suzanne Robertson and James Robertson, "Mastering the Requirements Process: Getting Requirements Right," **3rd ed. (not 4th)** https://learning.oreilly.com/search/?q=MASTERING%20REQUIREMENTS%20PROCESS&rows=100&language=en

Login through ISU library with your netid, via:



Grading

Grading:
Exam 1: 35%
Exam 2: 35%
Homework: 15%
Team Project: Software Requirements Specification (4090 & 5090) & Presentation (5090): 10%
Participation: 5% (in-class exercises; attendance at 5090 talks)

To pass the course, you must pass the Exam component. That is, if the average of your scores on the two exams is an F, you get an F in the course.

5090: Additional HW & exam problems; presentation on a paper about a recent RE advance

Also (syllabus has details):

- ✓Academic Honesty: don't cheat; we'll monitor & report. No generative AI use. Effect: 0 on exam/assignment **+** final grade lowered a full letter grade
- ✓No photos, recording, posting, sharing, uploading, or distributing of course materials without my prior written permission
- ✓Wellbeing: keep in touch; ask for help; care for your communities

  https://cyclonesupport.iastate.edu/

Me & RE

- Me: worked in RE; research in RE; teach RE; service to RE
- RE: “the systematic handling of requirements” [SWEBOK int’l standard for SE courses.]
- Software RE: concerned with “the elicitation, analysis, specification, and validation of software requirements”
- Job titles vary; everyone needs RE!
- Deciding **what** to build is the hardest part, so RE skills are highly valued by employers.

Why RE?

"If we are to build some software or a product or a service, then it must provide the optimal value for its owner. . . .

[W]hat it comes down to is that it does not matter how you develop your software, but rather what that software does for its owner that matters.

You can finish a project on time and on budget, but if the delivered software brings little benefit to the owning organization, it is a waste of money. Alternatively, you can overspend and be late, but if the delivered product brings several million dollars of value, then it is more beneficial than its cheaper counterpart.

The task of the business analyst *[aka the requirements engineer]* is to discover the real business that the software is supposed to improve. This cannot be done at the keyboard . . . because software is a **solution**, and to provide a valuable solution you first have to understand the problem—the **real problem**—that it is meant to solve."
[Robertson & Robertson, *Mastering the Requirements Engineering Process: Getting Requirements Right"*]

Aim

In 4090/5090 you'll learn a requirements engineering process & a set of techniques for discovering, analyzing, communicating, validating and evolving requirements.

Assignment: form teams by Friday

- Teams: HW and Project may be done in teams of 3 or 4
- 4090 teams & 5090 teams
- Email Pratik pmaitra@iastate.edu by this Fri, 8/29:
  - Option 1: with the **names & emails** of your team's members. If your team has 2 members & you'd like more, put that in your email.
  - Option 2: with a statement that you want to work individually
  - Option 3: otherwise, we'll assign you to a team