

SE482: Requirements Engineering

Spring 2013

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Office Hours: Wednesday 1.00-4.00pm or by appointment.

Class Overview

SE482 is structured around both theory and practice. At the end of the course you are expected to understand the basic Requirements Engineering practices as defined by the International Requirements Engineering Board (IREB) <http://www.certified-re.de/en/mission.html>. Note: It is not possible to cover ALL of these materials in a 10 week course, however some sections of the syllabus are covered in other core SE courses such as SE430 and so we won't need to cover them.

As requirements engineering is applicable to both software and systems engineering projects, and so we will be using both kinds of systems as the context for our work.

This is an interactive class. Online students are expected to complete the activities at home. In class students are expected to come to class ready to participate.

Course grades will be assigned as follows. Please note that I do not grade on a curve – each student will earn their own grade, regardless of other students' grades.

This quarter there will be **NO midterm or final exams** for this course.

Activities 30%

Requirements Engineering covers a fairly broad area ranging from people-centric activities related to identifying and working with stakeholders to very formal specifications (and everything in between). To this end, many topics will be supplemented by specialized activities. There will be at least 6 activities offered during the quarter and each person must complete 3 of them (according to your own interests).

I suggest that as soon as you see an activity of interest to you – you complete it. There is no deadline for completing these activities except for the end of week 10 – however if you leave all three activities until the end of the quarter you are setting yourself up for a disaster. You should expect to spend at least 2 hours on each activity. (Note: The RE Tooling (Doors or Reqpro tbd) activity is worth double points – and therefore will count as two activities).

Assignments 30%

There will be 3 homework assignments during the course. All assignments will be completed individually and you should expect to spend about 6 hours per assignment. These will be approximately assigned in weeks 2, 4, and 6, and you will have 13 days to complete each assignment. There will be a 10% late penalty for work turned in up to 3 days late, and a 20% penalty for work turned in up to 1 week late. No work will be accepted later than 1 week after the due date without a fully documented excuse.

Final Project or Term Paper 40%

You will have a choice to do a project or a research paper. I will provide detailed information about these options in week 4. However, the project will involve eliciting, analyzing, and specifying requirements for a specific product, while the research paper will involve identifying a requirements- related topic of interest to you and writing a fairly rigorous paper on the topic. (There are going to be a couple of 'banned' topics this year – but these will be discussed around week 4).

Grades will be assigned as follows:

A: $\geq 94\%$, A-: $\geq 90\%$, B+: $\geq 87\%$, B: $\geq 84\%$, B-: $\geq 80\%$, C+: $\geq 77\%$, C: $\geq 74\%$, C-: $\geq 70\%$, D+: $\geq 67\%$, D: $\geq 64\%$, D-: $\geq 60\%$, F: $< 60\%$. (The highest achieved grade applies).

Text book:

There are no required textbooks for this class. Readings will be provided on a weekly basis, and course presentations will be quite extensive and cover all necessary material. Check the weekly reading assignments on D2L.

Optional Text book

- Requirements Engineering: Fundamentals, Principles, and Techniques, Klaus Pohl
- Mastering the Requirements Process, Robertson and Robertson

Course Outline

(Please note that I reserve the right to change this outline of topics. Every time I teach the course I like to add/replace topics, and this outline reflect the topics covered in a previous course. For exact topics and readings to be covered each week you will need to see the D2L schedule.

There is a possibility of inviting guest speakers during the quarter – but that is not certain for this course. Also please note that I will be out of town at conferences two weeks. Instead of getting a substitute teacher, I prefer to pre-record materials and make the class online-only for that week. This way I ensure that we cover all materials that need covering.

- **Week 1:**
4/1/2013
Project Initialization and Stakeholder Analysis
Course overview
- **Week 2: Online only as I'm attending a Requirements Engineering conference in Germany**
4/8/2013
Goals and Boundaries,
Modeling goals using i* and other techniques
[Assignment 1](#)
- **Week 3:**
4/15/2013
Scenarios and Use Cases – Story telling in Requirements Engineering
- **Week 4:**
4/22/2013
Requirements Writing and specification
Easy Approach to Requirements Syntax (EARS)
State Charts
[Assignment 2](#)
- **Week 5:**
4/29/2013
Business Process Modeling
- **Week 6:**
5/6/2013
Requirements Elicitation and Negotiation using Win-Win methods
Agile approaches to working with requirements
More examples of business process modeling
[Assignment 3 \(business process modeling\)](#)

- **Week 7:**
5/13/2013
Non-Functional Requirements
- **Week 8:** Online only as I'm attending the International Conference on Software Engineering
5/20/2013
Requirements Management and Traceability
- **Week 9:**
5/27/2013
Memorial Day – no school
(However – there will be optional pre-recorded materials posted online for anyone who doesn't want to miss a week!)
- **Week 10:**
6/3/2013
Scaling up the requirements process
Critical Systems
Large Systems
- **Finals week**
No class – all final research papers and projects are due.

Plagiarism Policy

All assignments must be completed individually for this course. Plagiarism in any form will not be tolerated and will be reported. For anyone completing a final research project, all papers will be submitted to Turnitin.com, which will return a plagiarism report.