CS 361 – Software Engineering I

Catalog Description: Introduction to the "front end" of the software engineering lifecycle; requirements analysis and specification; design techniques; project management.

Credits: 4  
Terms Offered: All

Prerequisites: CS 261

Courses that require this as a prerequisite: CS 461

Structure:  
On-Campus: Three 50-minute lectures per week or two 80-minute lectures per week.

Ecampus: This course combines approximately 120 hours of instruction, online activities, and assignments for 4 credits (30 hours of online instruction, 10 hours of online participation, 2 hours of online quizzes, 30 hours of offline reading/study, 15 hours of offline homework/lab assignments, 30 hours of offline programming projects, and 3 hours of proctored exams).

Instructors: Christopher Scaffidi, Margaret Burnett, Carlos Jensen, Justin Wolford, Danny Dig

Course Content:  
- Software lifecycle activities and models
- Requirements engineering, requirements elicitation, writing requirements documents, requirements reviews, UML notation
- Software architectures, distributed system architectures
- Object-oriented design, design patterns
- Project management, risk analysis
- Formal and informal writing

Learning Resources: [Revised Fall 2009]  
Waltzing with Bears by Tom DeMarco & Timothy Lister (optional)

Measurable Student Learning Outcomes:  
At the completion of the course, students will be able to…
1. Select the most appropriate software process model to use in a particular situation (Level 4; ABET Outcomes: a, b, c)
2. Synthesize requirements for a realistic software system and write a requirements specification document (Level 5; ABET Outcomes: B, c, f, I, j)
3. Model system requirements using one or more semi-formal notations such as UML, dataflow diagrams, entity-relationship diagrams, or state diagrams (Level 4; ABET Outcomes: a, b, c, I, j)
4. **Design** software systems at an architectural level and at lower levels, using one or more techniques, such as object-oriented design or agile methods, and express these designs in design specification documents (Level 5; ABET Outcomes: a, b, c, i, K)

5. **Validate** designs and adjust the specification or design as necessary (Level 4; ABET Outcomes: a, b, c, j, k, n)

6. **Describe** several methods of estimating the cost and developing a schedule for a programming project (Level 1; ABET Outcomes: a, b, f, i)

7. **Participate** effectively in a team environment (Level 3; ABET Outcomes: d, e, f, O)

8. **Produce** professional-quality software-related documents (Level 3; ABET Outcomes: d, f, I, O)

**Students with Disabilities:**
Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at [http://ds.oregonstate.edu](http://ds.oregonstate.edu). DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

**Link to Statement of Expectations for Student Conduct**, i.e., cheating policies [http://oregonstate.edu/studentconduct/offenses-0](http://oregonstate.edu/studentconduct/offenses-0)
Please make yourself familiar with the **Student Conduct Code**, which can be accessed at [http://studentlife.oregonstate.edu/studentconduct/](http://studentlife.oregonstate.edu/studentconduct/). Please pay particular attention to the section on Academic Dishonesty, which OSU defines as “an intentional act of deception in which a student seeks to claim credit for the work or effort of another person or uses unauthorized materials or fabricated information in any academic work.” For some guidelines on plagiarism, see [http://www.wpacouncil.org/node/9](http://www.wpacouncil.org/node/9), and don’t hesitate to talk to me if you are uncertain about how to properly utilize or cite material.

Revised: Spring 2016