

BSU Computer Science

CS 471/571 Software Engineering

Fall 2014 Syllabus

Instructor

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Meetings

Lectures: WeFr 9:00AM - 10:15AM, Micron Engineering Center Rm 309
Office hours: WeFr 10:30am-12:00pm, 2-5pm or by appointment, MEC 302A

Credits: 3

Course Catalog

A formal study of the software development process. Topics include: life cycle models, requirements definition, specification, design, implementation, validation, verification, maintenance, and reuse. Students work in small teams on significant projects.

Prerequisites:

CS230 and either CS 321 or CS342

Course Objectives

Students are introduced to the basic concepts of software engineering and software development, including:

- Explain how software life-cycles address the needs for a rigorous approach to software development
- Apply methods (e.g., Use Cases, Stories, UML) for documenting the requirements and design of a software system
- Apply object-oriented software design methods
- Contribute effectively through the completion of a software development team project
- Identify appropriate verification and validation activities for a software project
- Demonstrate knowledge of other contemporary topics.

Evaluation Procedures and Criteria

Grading Components:

- Team Project: 30 points

- Individual Assignments: 25 points
- Quizzes: 5 points
- Midterm: 15 points
- Final: 25 points

Final grades will be assigned by the following rule: A for 90% or above of the total points, B for 80 to 89%, C for 70 to 79%, D for 60 to 69%, and F for less than 60%.

All assignments will be announced in class and posted on blackboard. If you miss class for any reason, it is *your* responsibility to find out what assignments you missed. *No late assignments* will be accepted and there are *no make-up exams*. Discuss unusual circumstances *in advance* with the instructor.

All assignments must be completed in a manner consistent with BSU code of academic conduct (e.g., described in the BSU Student Handbook). Cheating on an exam or plagiarizing others' work will result in a grade of zero, and possibly further disciplinary action.

Topics

- What is software engineering?
- Software development process and life cycle
- Agile software development
- Cohesion and coupling
- Requirements analysis
- Object-oriented design
- Verification and validation

Textbook

- Schach, Stephen. Object-Oriented Software Engineering. McGraw Hill. 2008. ISBN 978-0-07-352333-0.

Supplementary Materials

- Simms, Chris and Johnson, Hillary Louise. The Elements of Scrum. 2011. ISBN 978-0-98-286691-7. There is also a Kindle edition.
- Shari Lawrence Pfleeger and Joanne M. Atlee, Software Engineering: Theory and Practice, 4th Edition, ISBN: 978-0136061694. Prentice-Hall, 2009.
- Steve McConnell. Code Complete: A Practical Handbook of Software Construction. ISBN 978-0735619678. 2nd Edition. Microsoft Press, 2004.
- Martin Fowler, Kent Beck, John Brant, William Opdyke, and Don Roberts. Refactoring: Improving the Design of Existing Code. ISBN 978-0201485677 Addison-Wesley, 1999.
- Dave Astels. Test Driven Development: A Practical Guide, ISBN 978-0131016491. Prentice Hall PTR, 2003.

Tentative Schedule (Subject to change)

Week	Dates	Topics / Chapters
1	8/25-8/29	Ch 1 What Is Software Engineering
2	9/01-9/05	Introduction to Team Project, Ch 2 Life Cycle Models
3	9/08-9/12	Ch 2 Agile Development
4	9/15-9/19	Ch 2 Life Cycle Models
5	9/22-9/26	Ch 3 Unified Process, Ch 4 Teams
6	9/29-10/03	Ch 7 From Modules to Objects
7	10/06-10/10	Ch 7 From Modules to Objects, Ch 6 Testing
8	10/13-10/17	Ch 6 Testing
9	10/20-10/24	Midterm Project Presentations and Midterm Exam
10	10/27-10/31	Ch 10 Requirements
11	11/03-11/07	Ch 11 Analysis
12	11/10-11/14	Ch 12 Design, Ch 9 Planning
13	11/17-11/21	Ch 12 Design
14	11/24-11/28	Thanksgiving
15	12/01-12/05	Ch 13 Implementation, Ch 8 Reuse and Portability
16	12/08-12/12	Project Presentations, Final Review

Special Needs

Students with disabilities needing accommodations to fully participate in this class should contact the Disability Resource Center (DRC). All accommodations **MUST** be approved through the DRC. Please stop by Administration 114 or call 208-426-1583 to make an appointment with a disability specialist. To learn more about the accommodation process, visit our website at <http://drc.boisestate.edu>.