

Cleveland State University
Department of Electrical Engineering and Computer Science

EEC 421/521 Software Engineering

Catalog data: EEC 421/521 Software Engineering (4-0-4).
Class: Online.
Software process, methods, and tools; phases of software development process including requirements analysis, design, coding, and testing; methods and techniques for software engineering, and software project management, metrics, and quality assurance.

Textbook: Ian Sommerville, Software Engineering, 8th ed. Addison-Wesley. The material in the textbook will be supplemented by lecture notes and a set of research papers that will be assigned in class.

Coordinator: Dr. Nigamanth Sridhar
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Phone: 216.687.5341

CourseWeb Page: The following URL will contain class announcements, handouts, assignments, and other useful resources. In general, this will be the primary way in which I will communicate information to you (other than class lectures, of course)
<http://selab.csuohio.edu/~nsridhar/teaching/fall12/eec521/>

Objectives: Upon successful completion of this course, the student should:

1. Be familiar with the different stages of the software development life-cycle
2. Be familiar with the different kinds of documentation generated throughout the development life-cycle
3. Understand the fundamental components of quality software
4. Be able to work successfully in a group with colleagues
5. Be introduced to various new technologies that are being used to produce software in the industry

Course Outline:

Week	Topic	Reading
1	Introduction and course policies Software Product Software Process, Prescriptive Process	Somerville, Ch. 1
2	Models Agile Process Models	Somerville, Ch. 4 Somerville, Ch. 4
3	Software Cost Estimation Requirements Engineering	Somerville, Ch. 26 Somerville, Ch. 6, 7
4	Analysis Modeling Analysis Modeling	Somerville, Ch. 7, 8 Somerville, Ch. 7, 8
5	Classes and Objects; UML Formal Specification	Somerville, Ch. 8 Somerville, Ch. 10

6	Formal Specification Midterm Exam 1	Somerville, Ch. 10
7	Introduction to Software Design Software Architectural Design	Somerville, Ch. 11 Somerville, Ch. 11
8	Object-Oriented Design Contract-Based Design	Somerville, Ch. 14 Somerville, Ch. 10
9	Design Patterns Design Patterns	
10	Design Patterns Refactoring	
11	Midterm Exam 2 Aspect-Oriented Programming	Somerville, Ch. 32
12	Aspect-Oriented Programming Verification and Validation	Somerville, Ch. 32 Somerville, Ch. 22
13	Black-Box Testing, Junit White-Box Testing	Somerville, Ch. 23 Somerville, Ch. 23
14	Object-Oriented Testing Thanksgiving Day; No class	
15	Software Model Checking Model Checking with SPIN	
16	Final Exam	

Grading:

The following grade components will be assessed in this course:
 Mid-term Exams: 30%
 Final Exam: 30%
 Homework Assignments: 40%

Pop Quizzes: At random times throughout the semester, I will give quick quizzes about current concepts and materials. The quizzes will be in a variety of formats. Most will be given during class, some at the start of class and some at the end of class. If you are not present for a pop quiz, you automatically receive a zero grade for the quiz. No make-up will be given for pop quizzes.

Late Assignments, Missed Exams, Quizzes, and Presentations: Any assignments must be submitted online at the time they are due. Late projects will not receive any credit. Similarly, failure to submit an exam, quiz, or scheduled presentation will result in an automatic zero grade for the work. Make-up work will be granted only with a valid, written, medical, or university excuse. It is your responsibility to give me the written excuse and to arrange for the make-up work within one week of your absence.

Academic Integrity: This course is all about training to be a software professional, so I will expect you to be professional during the course as well. No form of cheating will be condoned. If I find you cheating, I will be forced to refer you to University Academic Misconduct Committee. Further, in the event that the committee finds you guilty, you will receive an “F” grade for the course regardless of your scores. It is not, however, wrong to refer to other sources when preparing your written submissions; just make sure that you cite the source properly.