

CSC 481 – Software Engineering
CSC 581 – Advanced Software Engineering

Instructor	Jack Han	E-Mail	jhan@csudh.edu
Classroom	SAC 3142	Class Meeting	Tuesday and Thursday 5:30pm – 6:45pm
Office	NSM A-133		
Phone	(310) 243-2624	Office Hours	W.9:30-13:30 or by Appointment

CATALOG DESCRIPTION:

The main object of this course is to provide a general overview of the software engineering and related various aspects of software development. The topics include software requirements specification, software design, software project management, dependable systems development, critical systems, software verification and validation, and software evolution. The course is centered on the concept of a software engineering process and includes discussion of system models for software development.

PRE-REQUISITE: CSC311: Data Structures and
CSC321: Programming Languages

TEXTBOOK:

Ian Sommerville (2010) *Software Engineering*, 9th Edition, Addison Wesley,
ISBN-13: 978-0-13-703515-1, ISBN-10: 0-13-703515-2

COURSE GOALS:

This course aims to expose students the general overview of 1) software engineering process, 2) software development system models, and 3) software project management, as well as related concepts and professional skills. Software engineering process consists of software requirements engineering, software analysis and modeling, software design and implementation, software verification and validation. Software development system models include waterfall model, incremental development models, and reuse-oriented model. Software project management covers project planning, project schedule, risk management, staff management, quality management, cost estimation, and configuration management. Students are expected to best practice in software engineering process, management and evolution and to develop professional executive skills.

COURSE OUTCOMES:

Upon completion of this course, students will:

1. familiarize with the general concepts of software engineering and methodologies of software development;
2. master the skills of software requirements engineering processes and system models;
3. be able to use professional technologies to model and design software;
4. understand the software implementation techniques and software evolution;
5. be able to verify and validate software, and design software test cases;
6. know how to manage software projects, including planning, scheduling, staffing, cost estimating, risk and quality management, configuration management as well as process improvement; and

7. understand rapid software development using Agile

REQUIREMENTS:

CSC481 and CSC581: There will be FIVE (5) intensive writing assignments and ONE (1) examination. The writing assignments will be chosen from the exercises of text chapters on the understandings and summarizations of chapters. The examination will be comprehensive.

CSC481 only: ONE (1) term-long team project is required, which will consist of FIVE (5) parts for students to practice the professional skills that are discussed in the course. Each team will have 5 students. At the end of the semester, each team must present its final product.

CSC581 only: ONE (1) research project is required, which must be reported to the instructor and presented in the class. Each graduate student must consult with the instructor to determine your research topic and get your topic approved. The requirements of the research report and presentation will be handed out. Graduate students will be assigned reading chapters on advanced software engineering topics, which must also be presented in the class.

GRADING BREAKDOWN:

CSC481:

Assignments:	25%, 5% each
Examination:	45%
Team Project:	25%, 5% each part
Project Presentation:	5%

CSC581:

Assignments:	20%, 4% each
Examination:	40%
Advanced Topics Presentation:	5%
Research Project Presentation:	5%
Research Project Report:	30%

GRADING SCALE:

[93,100] = A [90-93) = A- [85-90) = B+ [80-85) = B [75-80) = B- [70-75) = C+
 [65-70) = C [60-65) = C- [55-60) = D+ [50-55) = D below 50 = F

COURSE OUTLINE (Tentatively and subject to change)

Week	Topic and Chapter	Assignments	CSC481 Project	CSC581 Project
1	1. Introduction	A1		
2	2. Software process			
3	4. Requirements engineering	A2	Team Project – Part 1	
4	22. Project management			
5	23. Project planning	A3	Team Project – Part2	
6	5. System modeling			Topic Selection
7	6. Architectural design	A4	Team Project – Part 3	
8	7. Design and implementation			Reading List
9	8. Software testing	A5	Team Project --Part 4	
10	9. Software evolution			Abstract

11	3. Agile software development		Team Project – Part 5	
12	Examination			
13	10. Sociotechnical systems 11. Dependability and security 12. Dependability and security specification 13. Dependability engineering 14. Security engineering 15. Dependability and security assurance	Graduates Advanced Topics Presentations		Draft of research report
14	16. Software reuse 17. Component-based software engineering 24. Quality management 25. Configuration management 26. Process improvement	Graduates Advanced Topics Presentations		
15	Graduates Presentations			Presentation
16	Team Project Presentation		Presentation	Final Report

GENERAL POLICIES:

ACADEMIC HONOR CODE

Programming assignments must be done individually. Failure to do so will result in a violation of the CSUDH Academic Honor Code. The following cases will be considered as violations: identical code, and extremely similar code. Violations will be reported to the Office of Vice President of Academic Affairs.

STUDENT ACADEMIC APPEALS PROCESS

Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, error, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

ADA STATEMENT

Students with disabilities, who believe they may need an academic adjustment in this class, are encouraged to contact me as soon as possible to better ensure receipt of timely adjustments.

DEFINITION OF CHEATING AND PLAGIARISM

CSUDH is dedicated to a high standard of academic integrity among its faculty and students. In becoming part of the California State University academic community, students are responsible for honesty and independent effort. Disciplinary action will be taken against any student who alone or with others engages in any act of academic fraud or deceit. (Read University Regulations in University Catalog)