Syllabus

Course
Time: Lecture/Lab: T/R 9:30–10:50
Place: Hentschke 101
Website: Blackboard

Instructor: Hamid R. Ekbia
Office: Hentschke 210
e-mail: ***hamid_ekbia@redlands.edu***
Phone: x 3127
Office Hours: 1:30 – 2:30 M/F, 2:30 – 3:30 T/R, or by appointment

Textbook: *Object-Oriented and Classical Software Engineering*
Sixth Edition
Stephen Schach
McGraw Hill

Additional readings will be also assigned and made available for short essay questions.

Course Description

This course pursues three major objectives:

1. To provide you with a comprehensive picture of the software development process;
2. To study the different approaches (classical, object-oriented, etc.) to analysis and design
3. To get you started on your main (capstone or individual) project and to prepare you for your future careers as computer *professionals*, not mere programmers.

The first goal involves the learning of the concepts, methods, and models commonly used in the development, study, and evaluation of software systems. This covers almost the first half of the semester. The second half of the semester is mostly devoted to the second goal, which is achieved through hands-on experience with case studies, design and analysis exercises, and so on. Finally, the last goal is a backdrop for the whole course. A term project conducted in teams will be the main vehicle for this, but it also involves the identification, proposal, and preparation of an individual project. For computer science seniors, this will be their capstone project and for MS GIS students it will be their MIP.

Grading
Based on the above goals and the structure of the textbook, the final grade consists of four major components:

- A take-home midterm (%15) and final exam (15%) to test your conceptual understanding
- The software term project in teams (20%)
- Assignments including short essays, case-study exercises, and design and analysis problems (%35)

- The identification, proposal, presentation (to the class), and defense of individual projects (15%)

Participation: Students are expected to take active part in class discussions by paying close attention, raising questions, making suggestions, posing challenges, casting doubt, sharing experience, and so on — basically, any means that demonstrates their interest and enthusiasm but does not violate the University of Redlands' Standards of Academic Honesty.

Taking advantage of instructor office hours is strongly recommended.

Late hand-in is *not* accepted, except under documented emergency situations.

The take-home **midterm** will be taken over the weekend of Oct. 23-24 and the take-home final will be given on Monday Dec. 13th and due on Thursday, Dec. 16th.

Schedule

Period	Topic	Reading	Discussion Exercises	Term Project	Research Essay	A & D
			Part 1			
Week 1	The Scope of SE	Chapter 1, Appen. A	1.1,3,5,6,7, 13	1.15	Schach et al. 2003b	
Week 2	Software Life Cycles	Chapter 2	2.1, 3, 7, 8,9, 11, 12	2.13	Larman and Basili	
Week 3	Software Processes	Chapter 3	3.1, 2, 6, 7,8	3.9	Manzoni & Price	
Week 4	Tools	Chapter 5	5.1, 2,3,4,5, 10	5.11	Wirth	
Week 5	Testing	Chapter 6	6.2, 3,4,6,7,8 ,10	6.16	Lieberman & Fry	
Week 6	Modules and Objects	Chapter 7	7.2, 3,4, 8, 9, 14	7.17	Johnson	
Week 7	Reusability & Portability	Chapter 8	8.1, 2, 6,7,9, 15, 17	8.18	Morisio et al	
			Part 2			
Period	**Topic**	**Reading**	**Discussion Exercises**	**Term Project**	**Case Study**	**A&D**
Week 8	Requirements	Chapter 10	10.2,3,7,8,9	10.13	14, 15	10, 12
Week 9	Classical Analysis	Chapter 11	11.2, 3,4,5,6, 7, 8,11,13	11.15	17, 18, 19	-
Week 10	Object-Oriented Analysis	Chapter 12	12.1, 6, 7, 16, 17, 18, 19	12.27	28, 29	24, 26
Week 11	Design	Chapter 13	13.1,2,3,4	13.10	12,13	7, 9
Week 12	Implementation	Chapter 14	14.1,5,18,25, 26	14. 28, 29	30, 31, 32,34	-
Week 13	Maintenance	Chapter 15	15.2., 7, 8	15.10	11,12,13, 14	-
Week 14	UML	Chapter 16	16.1, 2, 3, 4, 5, 6, 7	-	-	-