CMPE/CMSE312 – Software Engineering

Department: Computer Engineering	**Program:** Computer/Software Engineering	**Program Code:** 25/29
Course Instructor **Name Surname:** Emre Rifat Yıldız **E-mail:** emre.yildiz@emu.edu.tr **Office:** CMPE109 **Office Tel:** 2849	**Lab Instructor Information:** To be announced during the lecture	
Course Code: CMPE312	**Credits:** 4	**Year/Semester:** 2024-2025 Spring

☒ Required Course   ☐ Elective Course

Prerequisite(s): CMPE211 – Object Oriented Programming

Course Description:

    The aim of the Software Engineering course is to provide students with basic information about the principles of software engineering. The course content includes basic concepts of software analysis and design, components of software systems, software features, software development methods, software engineering tools, project management, system analysis approaches, scope definition phase, problem analysis phase, requirements analysis phase, preparation of use-case reports, data modeling and analysis, process modeling, feasibility analysis, fundamentals of testing in software projects, test strategies, test management, debugging, documentation and preparation of software project proposals, etc.

Course Web Page: https://staff.emu.edu.tr/emrerifatyildiz/en/teaching/cmpe312

Textbook(s):

    Software Engineering APractitioners's Approach, Roger S. Pressman, McGrawHillPublishing Co.; 7th Ed edition (2009), ISBN: 9780071267823

Supporting Resources:

    Resources to be distributed during the course.

Course Topics and Weekly Schedule:

Week	Date	Topic	Lab	Notes
1	20.02.2025-02.03.2025	Introduction		
2	03.03.2025-09.03.2025	Software Development Methods, Life Cycle Models		
3	10.03.2025-16.03.2025	Software Engineering Processes, Change Processes and Improvements	Lab #1	Team Establishment
4	17.03.2025-23.03.2025	Software Cost Assessment (CoCoMo)	Lab #2	
5	24.03.2025-30.03.2025	Project Time Management (CPM-PERT)	Lab #3	
6	31.03.2025-06.04.2025	Software Requirements Analysis	Lab #4	PPM Report Submission
7	07.04.2025-13.04.2025	Software Requirements Analysis		
8	14.04.2025-20.04.2025	11 -26 April – Midterm Exam Period		
9	21.04.2025-27.04.2025			
10	28.04.2025-04.05.2025	Risk Management		
11	05.05.2025-11.05.2025	Software Design Activities		SRD-SRS Report
12	12.05.2025-18.05.2025	UML Design – Use Case, Activity, Sequence	Lab #5	
13	19.05.2025-25.05.2025	UML Design – BPMN, Class, E-R	Lab #6	
14	26.05.2025-01.06.2025	Software Tests	Lab #7	
15	02.06.2025-08.06.2025	Revisions - Presentations		Final Report / Demo
16-18	09.01.2025-29.06.2025	11 -26 June – Final Exam Period		

Course Learning Outcomes:
Upon successful completion of the course, students are expected to have the following competencies:
1. Draw an annotated parse tree for a given input and attribute grammar (SO 1)
2. Have knowledge of various programming languages, their features, history and category (SO 1)
3. Use LR parsing tables for bottom-up parsing of a given input (SO 1)
4. Work effectively with context free grammars (SO 1)
5. Draw a parse tree for a sentence in a language, given its grammar (SO 1)
6. Derive a sentence in a language, given its grammar (SO 1)
7. Demonstrate that a specific grammar is ambiguous (SO 1)
8. Write a simple lexical analyzer (SO 1)
9. Write a simple top-down parser (SO 1)
10. Show the contents of the system stack after several function calls (SO 1)
11. Differentiate between static and dynamic scope (SO 1)
12. Trace output of programs with various parameter passing methods (SO 1)
13. Be familiar with the implementation techniques of object-oriented constructs (SO 1)
14. Write and trace simple programs in the Haskell Functional Programming Language (SO 1)

	Method	No	Percentage
	Mid-Term Exam	1	% 25
	Final Exam	1	% 35
Assesment	Lab Reports	2	% 10
	Presentation (SRS&SDS Reports)	1	% 15
	Presentation (Final Report)	1	% 15
	Attendance	Every Lecture	% 0

Policy on makeups: Based on the regulations of EMU, a make-up exam will be provided for any missed exam. If more than one exam (midterm, final) is missed, only one make-up exam will be provided. For eligibility to take a make-up exam, a legally valid report must be submitted to the course instructor within 3 business days of the exam date.

Policy on the NG grade: If both the midterm and final exams are missed with no valid excuse, the student will be graded as NG.

Policy on missed labs: There will be no makeup for missed labs. If you cannot attend a lab for some reason, you should contact the assistant beforehand so that you can present your work in advance.

Important Notes:
All documents related to the course will be shared on the course web page. Visit this address regularly. All announcements in this area are deemed to have been made to all students taking the course and students are deemed responsible for the announcements. All education, teaching activities, explanations and announcements made during the courses are deemed to have been received by all students, whether they attend the course or not.

Relationship of the course to ABET Student Outcomes:
The course has been designed to contribute to the following student outcomes:
1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Meeting Times and Places:
Mon, 14:30 – 16:20
Tue, 12:30 – 14:20

Prepared By: Emre Rifat Yıldız	**Date Prepared:** 14.02.2025	**Revision:**