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| **CMPE 312 - Software Engineering Course Outline** |
| **Department:** Computer Engineering |
| **Instructor Information****Name:** Selin Bitirim**E-mail:** selin.bitirim@emu.edu.tr**Office:** CMPE 203**Office Tel:** 0 392 630 1191  |
| **Research Assistant****Name:Begüm Koru****E-mail: begum.koru@emu.edu.tr****Office:** CMPE 204**Office Tel:** 0 392 630 1199  |
| **Lecture and Lab Hours**Monday 08:30-10:20, CMPE126 (Lecture)Thursday 10:30-12:20, CMPE126 (Lecture)Wednesday 14:30-16:20, CMPE137 (Lab) |
| **Program Name:** Computer Engineering | **Program Code:** 25 |
| **Course Code**CMPE 312 | **Credit**4  | **Year/Semester**Spring 2023-2024 |
| [x]  Compulsory Course [ ]  Elective Course |
| **Prerequisite Course:**  CMPE 211 |
| **Catalog Description**The software life cycle and the phases in software development: Project scheduling, feasibility study, analysis, specification, design, implementation, testing, quality assurance, documentation, maintenance. Management issues: Planning, organization, control. Also included are formal specification techniques, structured programming, modular system design and other current issues.**Aims & Objectives**Teaching the basic concepts of software engineering with specific emphasis on the practical issues involved in software project management through the use of a one-semester design project. The students will work in teams on projects of interest to industry and will be involved in analysis of requirements, architecture and design, implementation, testing & validation, project management, software process, software maintenance, and software re-engineering. |
| **Website**<https://staff.emu.edu.tr/selinbitirim/en/teaching/cmpe312> |
| **Textbook**1. Software Engineering 8, Ian Sommerville, 8th Ed. Addison Wesley, 2007, ISBN 0321313798
2. Software Engineering APractitioners's Approach, Roger S. Pressman, McGrawHillPublishing Co.; 7th Ed edition (2009), ISBN: 9780071267823
3. Modern Systems Analysis and Design, 8th Edition, Valacich & George ©2017 | Adobe Reader | ISBN-13: 9780134205663, <https://www.vitalsource.com/educators/textbooks?term=9780134205663>
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| Topics Covered, Lab Schedule and important dates:(4 hours of lectures per week) (2 hours of laboratory per week) |
| Wk. | **History** | Topic |
| 1 | 12/02/24-18/03/24 | Chapter 0 – Introduction of Course Content and Project Team |
| 2 | 19/02/24-25/02/24 | Chapter 1 - Software Features, Software engineering ethics, Case studies |
| 3 | 26/02/24-03/03/24 | Chapter 2- Software Development Methods, Software Engineering Tools, Software Development Life Cycle Models  |
| 4 | 04/03/24-10/03/24 | Chapter 3- Project management Chapter 4 – Project planning-NW-CPM-PERT-Crashing |
| 5 | 11/03/24-17/03/24 | Chapter 5- Estimation techniques-COCOMO |
| 6 | 18/03/24-24/03/24 | Chapter 6- Requirements Engineering & REPORT SUBMISSION DEADLINE:DEADLINE FOR SUBMISSION OF PROJECT PLANNING AND MANAGEMENT REPORTS: 21/03/2024 |
| 7 | 25/03/24-07/04/24 | MIDTERM EXAMS |
| 8-9 | 08/04/24-14/04/24 | No class- Ramadan Bairam (09/04-12/04) |
| 10 | 15/04/24-21/04/24 | Chapter 7- Architectural design |
| 11 | 22/04/24-28/04/24 | Chapter 8- System modeling Chapter 9-PM\_Tools  |
| 12 | 29/04/24-05/05/24 | DEADLINE FOR SUBMISSION OF SRS REPORT: 29.04.24–03.05.24 (presentation during lecture hour) |
| 13 | 06/05/24-12/05/24 | Chapter 9-PM\_Tools |
| 14 | 13/05/24-19/05/24 | Chapter 10 – Software Testing |
| 15 | 20/05/24-26/05/24 | DEADLINE FOR SUBMISSION OF FINAL REPORT: 20.05.24 - 25.05.24(presentation during lecture hour)FINAL PRESENTATION AND PROGRAM DEMO  |
| 16 | 27/05/24-02/06/24 |  |
| 17 | 03/06/24-16/06/24 | FINAL EXAMS |

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| **Lab Plan**

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| **Lab 1** | Term Project Planning, Preparation of SRS and Final Report Documents, Creating a Gantt Chart for Your Project, Project Scheduling Using MS Project Tool, Preparation of Resource Plan, Preparation of the Organizational Chart of the Project. |
| **Lab 2**  | Preparation of the interim report "Software Requirements Document", Determination of the Software Process Cycle Suitable for Your Project, Project Budget Management Study |
| **Lab 3** | Determination and Modeling of System Process Requirements (Use-Scenarios, Activity Diagrams, Sequence Diagrams, Business Process Modeling with Object Oriented Approach). |
| **Lab 4** | Determination and Modeling of System Data Requirements (Use of Class Diagrams), and Design Processes (Database design, Design of Forms and Reports, Interface/dialog designs). |
| **Lab 5** | Etude studies to eliminate the difficulties faced by students in term projects. |

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| **Course Learning Outcomes**On successful completion of this course, all students will have developed knowledge and understanding of:* Software engineering
* Software life cycle, effort, time and cost estimation, requirements specification, modular design, testing
* Project management and planning

On successful completion of this course, all students will have developed their skills in:* computer programming
* database design
* project management

On successful completion of this course, all students will have developed their appreciation of, and respect for values and attitudes to: 🡪 software engineering projects

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| **Assessment** | **Method** | **No** | **Percentage** |
| Midterm Exam | 1 | 25% |
| Final exam | 1 | 35% |
| Attendance | Every lecture | 0% |
| Lab (Project Planning & Management Report) | 5-6 | 10% |
| Project Intermediate Stage Presentations (SRS report) | 1  | 15%  |
|  | Project Final Report and Presentations | 1 | 15%  |

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| **Attendance:****Lectures:** * Attendance will be taken in every lecture.

**Exams:** * If you miss midterm exam, you must submit a written petition stating a valid reason to your instructor within 3 working days after that examination in order to be able to enter makeup exam.
* If you miss final exam, you must submit a written petition stating a valid reason to your instructor within 3 working days after that examination in order to be able to enter makeup exam.
* If you miss both midterm and final exams and have a petition for each, you will be able to enter makeup exam for the final exam only.
* If you miss both midterm and final exams and do not enter makeup exam, you will get “**NG**” grade.

**Laboratory Works:** * **No makeup for laboratory works.**
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| **Grading Policy**85-100 🡪 A 80-84 🡪 A- 75-79 🡪 B+ 70-74 🡪 B 66-69 🡪 B- 63-65 🡪 C+ 60-62 🡪 C 57-59 🡪 C- 54-56 🡪 D+ 50-53 🡪 D 45-49 🡪 D- 0-44 🡪 F |
| **Plagiarism**Plagiarism (which also includes any kind of cheating in exams, assignments and lab works) is a disciplinary offence and will be dealt with accordingly. Furthermore, the penalty of plagiarism is to get zero grade for the corresponding exam, assignment or lab work. |
| **Relationship of the course to Student Outcomes:****1.** Ability to identify, formulate, and solve complex engineering problems by applying principles of engineering,science, and mathematics2. Ability to apply engineering design to produce solutions that meet specified needs with consideration of public health,safety, and welfare, as well as global, cultural, social, environmental, and economic factors3. Ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments,which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts4. Ability to function effectively on a team whose members together provide leadership, create a collaborative andinclusive environment, establish goals, plan tasks, and meet objectives.5. Ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineeringjudgment to draw conclusions6. Ability to acquire and apply new knowledge as needed, using appropriate learning strategies. |
| **Prepared by:** Selin Bitirim | **Date Prepared:** February 19, 2024 |