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| **CMPE 312 Software Engineering**  |
| **Department:**   Computer Engineering   |
| **Instructor Information****Name:** Assoc. Prof. Dr. Alexander Chefranov**E-mail:** Alexander.chefranov@emu.edu.tr**Office:** CMPE 219**Office Tel:** 0 392 630 1190                                   |
| **Assistant Information****Name:  TBD****E-mail:** **Office:** **Office Tel:**                 |
| **Meeting times and places**Monday, 10.30-12.20, CMPE128, LectureWednesday, 8.30-10.20, CMPE128, LectureTuesdday, 14.30-16.20, CMPE134, Lab  |
| **Program Name:**  FORMTEXT Computer Engineering  | **Program** **Code:** 25 |
| **Course Code** CMPE 312 | **Credits** 4  | **Year/Semester**2020-2021 Spring |
|  FORMCHECKBOX   Required Course          FORMCHECKBOX   Elective Course |
|  **Prerequisite(s):** CMPE211 - Object Oriented Programming  |
| **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. (Prerequisite: CMPE 211) **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.  |
|  **Course Web Page** http://cmpe.emu.edu.tr/en/CourseLoad.aspx?id=CMPE412 |
| **Textbook(s)**  ̶        Pressman, Software Engineering, 8th ed., McGraw-Hill, 2015. |
| **Indicative Basic Reading List:** ̶        Software Engineering 10th ed., Ian Sommerville, April 2015.̶        Stephen Schach, Object-Oriented and Classical Software Engineering. 7th Edn, McGraw-Hill, 2007. |
| **Topics Covered and Class Schedule****(4 hours of lectures per week)**

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| **Week  1** | Introduction – Discussion about certain software projects examples and student term assignment. |   |
| **Week  2** | What is Computer Software? Software types.  |   |
| **Week  3** | Software Myths and Project Management – Problem, Process, People | . |
| **Week  4** | Project Management, Project Proposal & Planning, Introduction to Generic Processes, |   |
| **Week  5** | Software Development Life Cycle (SDLC) |   |
| **Week  6** | Project Metrics, Software Project Planning - COCOMO |   |
| **Week  7**  | Software Project Planning – COCOMO, Term project – Intermediate presentations |   |
| **Weeks  8, 9**  | MIDTERMS |   |
| **Week 10** | Software Engineering Requirements Modeling Principles |   |
| **Week 11** | Project Scheduling and Tracking |   |
| **Week 12** | Software Quality Assurance, Software Configuration Management |   |
| **Week 13** | Concluding remarks |   |
| **Week 14** | Term project - Final presentations  |   |
| **Weeks 15-17** | FINAL EXAMS |   |

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| **Lab Schedule (Tentative)**

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| **Weeks 3-4** | Discussing Project Proposal Documentation, Preparing Gantt Chart and Project Feasibility via MS Project Tool, Preparing Organization Chart |
| **Weeks 5-6**  | Discussing Term project |
| **Weeks 6-7** | Term project Proposal presentation |
| **Weeks 10-11** | Term project Design presentation |
| **Weeks 12-13** | Term project final presentations |

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| **Course Learning Outcomes** Upon successful completion of the course, students are expected to have the following competencies:1. Know software life cycle and the phases in software development and to be able to apply respective activites
2. Know project scheduling and to be able to apply it
3. Know about feasibility study and analysis, and to be ablle applyung them
4. Know methods of specification, design, implementation and to be able to apply them
5. Know methods of testing, quality assurance, documentation and to be able to apply them
6. Know maintenance methods and to be able to apply them
7. Know management methods on planning, organization and control and to be able to apply them
8. Know methods of effort, time and cost estimation and to be able to apply them
9. Know formal specification techniques, structured programming, modular system design and to be able to apply them
10. Work on the Term project in a team

 On successful completion of this course, all students will have developed their **appreciation** of, and respect for **values and attitudes** to: software engineering projects  |
| **Assessment** | **Method** | **No** | **Percentage** |
| Midterm Exam(s) | 1 | 25% |
| Final Examination | 1 | 35% |
|  | Attendance | - | 0% |
|  | Assignments & Labs | 1 | 40% |
|  **Attendance grade:**No grade will be given. However, attendance is compulsory. |
| **Policy on makeups:** For eligibility to take a makeup exam, the student should bring a doctor's report within 3 working days of the missed exam. |
| **Policy on the NG grade:** If you miss more than 20% of classes and/or have poor performance in assignments (including exams), NG grade may be given.  |
| **Policy on missed labs:** There will be no makeup for labs missed without valid excuse.  |
| **Relationship of the course to 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 mathematics2. an 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 factors5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives  |
| **Prepared by:** Assoc.Prof. Dr. Alexander Chefranov | **Date Prepared:** 2 March 2021 |
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