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| **CMSE 201 Fundamentals of Software Engineering** |
| **Department:** FORMTEXT Computer Engineering  |
| **Instructor Information****Name:** Assoc. Prof. Alexander Chefranov**E-mail:** Alexander.chefranov@emu.edu.tr**Office:** CMPE 219**Office Tel:** 1190                     |
| **Assistant Information**  |
| **Meeting times and places**Wednesday 8:30-10:20, Room CMPE 129Friday 10:30-12:20, Room CMPE 129Friday 16:30-18:20, Room CMPE 134 (Labs)  |
| **Program Name:** Software Engineering | **Program Code: 29** |
| **Course Number:** CMSE 201 | **Credits:** 4 Cr | **Year/Semester:**2018-2019 Fall |
|  FORMCHECKBOX   Required Course          FORMCHECKBOX   Elective Course       (click on and check the appropriate box)  |
| **Prerequisite(s):**

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| CMPE101  Foundations of Computer Engineering  |

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| **Catalog Description**: Phases of the software development process. Estimation, system modeling, requirements analysis. Project management, modular software design, object-oriented analysis and design techniques. Design documentation using symbolic representations, UML diagrams. Software testing, quality issues   |
| **Course Web Page:** <http://cmpe.emu.edu.tr/en/CourseLoad.aspx?id=CMSE201> |
| **Textbook(s):**Sommerville, I., Software Engineering, 8th Ed., ISBN 7-111-19770-4, 2006Pressman, R.S., Software Engineering: A Practitioner Approach, 5th Ed., ISBN -07-365578-3, 2001  |
| **Indicative Basic Reading List :** No  |
| **Topics Covered and Class Schedule:****(4 hours of lectures per week)**

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| **Weeks 1-2** | Introduction. Phases of software development process |
| **Weeks 3-4** | Estimation, system modeling, requirements analysis |
| **Weeks 5-7** | Project management, modular software design |
| **Weeks 7-8**  | Object-oriented analysis and design techniques. Problem sessions. |
| **Weeks 9-10****Week 11** | Midterm exams. Object-oriented analysis and design techniques.  |
| **Weeks 12-13**   | Design documentation using symbolic representations, UML diagrams. Software testing. Quality issues. |
| **Week 14**  | Problem sessions. |
| **Weeks 15-17** | Final exams. |

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| **Laboratory Schedule:****(2 hours of laboratory per week)**

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| **Week 4** | TBD as supporting the project |
| **Week 5** |   |
| **Week 6** |   |
| **Week 11** |   |
| **Week 12** |   |
| **Week 13** |   |
| **Week 14** |   |
| **Week 15** |   |

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| **Course Learning Outcomes:** On successful completion of the course, the student is expected to be able to:(1)      Know phases of the software development process j1, cmse-n, cmse-o(2)    Know waterfall, incremental, agile, component-based models j1, cmse-n, cmse-o(3)    Know methods of estimation, system modelling a1, a3,  cmse-l, cmse-m, cmse-n, cmse-o(4)    Know methods of requirements analysis a1, a3, e1-e3, cmse-l, cmse-n, cmse-o(5)      Know modular software design, object-oriented analysis and design techniques a1, a3, e1-e3, cmse-l, cmse-n, cmse-o(6)    Know methods of composing design documentation using symbolic representations, UML diagrams a1, a3, j1, k1-k3, cmse-l, cmse-n(7)    Know methods of behavioural and static system modelling a1, a3,  j1, k1-k3, cmse-l, cmse-n(8)      Know methods of testing k1-k3, cmse-l, cmse-m, cmse-o(9)    Know  project management approaches cmse-l, cmse-o(10) Understand notions of software quality assurance cmse-l, cmse-o |
| **Assessment** | **Method** | **No** | **Percentage** |
| Midterm Exam(s) | 1 | 30% |
| Attendance |   | 0% |
| Project | 1 | 25 % |
| Final Examination (Comprehensive) | 1 | 45% |
| **Computation of the attendance grade:** Attendance is taken every lecture and entered to EMU portal. Those missing more than 20% of classes without valid excuse may get NG grade.  |
| **Policy on makeups:** If you miss a midterm or final exam, you can take a make-up exam if you have valid excuses (e.g., you are sick) and provide material evidence for it (e.g., a doctor’s report which must be issued/approved by EMU Health Center) within 3 working days of the exam. If you miss laboratory works, make-up for at most one laboratory work can be organized after final exams provided a medical report or other valid document on the missed laboratory works is submitted to the Lecturer before the final exams.  |
| **Policy on cheating and plagiarism:** Any student caught cheating at the exams or assignments will automatically fail the course and may be sent to the disciplinary committee at the discretion of the instructor.  |
| **Contribution of Course to ABET Criterion 5**Credit Hours for:  Mathematics & Basic Science : 0Engineering Sciences and Design : 4 General Education : 0  |
| **Relationship of Course to Program Outcomes****The course supports achievement of the following program objectives**(a1). an ability to apply knowledge of mathematics 3-7(a3). an ability to apply knowledge of engineering 3-7(e1). an ability to identify engineering problems 4,5(e2). an ability to formulate engineering problems 4,5(e3). an ability to solve engineering problems 4,5(j1). a knowledge of computer related (technical) contemporary issues 1, 2, 6, 7(k1). an ability to use the techniques necessary for engineering practice 6-8(k2). an ability to use the skills necessary for engineering practice 6-8(k3). an ability to use the modern engineering tools necessary for engineering practice 6-8(cmse-l) an ability to analyze, design, verify, validate, implement, apply, and maintain software systems 3-10(cmse-m) an ability to appropriately apply discrete mathematics, probability and statistics, and relevant topics in computer science and supporting disciplines to complex software systems 3, 8(cmse-n) an ability to work in one or more significant application domains  1-7(cmse-o) an ability to manage the development of software systems 1-5, 8-10 |
| **Prepared by:** Assoc. Prof. Dr. Alexander Chefranov | **Date Prepared:** 25September 2018 |
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