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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**Monday 12:30-14:20, Room CMPE 128Tuesday 8:30-10:20, Room CMPE 128Monday 8:30-10:20, Room CMPE 238 (Labs)  |
| **Program Name:** Software Engineering | **Program Code: 29** |
| **Course Number:** CMSE 201 | **Credits:** 4 Cr | **Year/Semester:**2023-2024 Spring |
|  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:**  |
| **Textbook(s):***Ian Sommerville, Engineering Software Products: An Introduction to Modern Software Engineering, ISBN-10: 013521064X • ISBN-13: 9780135210642 ©2020, Pearson, 352 pp, Published 18 Feb 2019**Ian Sommerville, Software Engineering 10e, Global Edition, 2016.*  |
| **Indicative Basic Reading List :** *Shari Lawrence Pfleeger, Joanne M. Atlee, Software Engineering: Theory and Practice, 4/E ISBN-10: 0136061699 • ISBN-13: 9780136061694 ©2010, Prentice Hall, 756 pp,* Joseph S. Valacich and Joey F. George, *Modern Systems Analysis and Design, 9th Edition, Pearson Education Limited ©2021* **ISBN 10:** 1-292-35162-4, **ISBN 13:** 978-1-292-35162-9*Ganesh Vaidyanathan, Project Management: Process, Technology and Practice, Indiana University, South Bend, ISBN-10: 0132807181 , ISBN-13: 9780132807180 ©2013.**Sommerville, I., Software Engineering, 8th Ed., ISBN 7-111-19770-4, 2006**Pressman, R.S., Software Engineering: A Practitioner Approach, 5th Ed., ISBN -07-365578-3, 2001* |
| **Topics Covered and Class Schedule:****(4 hours of lectures per week)**

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| **12-23.02.24** | **Weeks 1-2** | Introduction. Phases of software development process |
| **26.02-8.03.24** | **Weeks 3-4** | Estimation, system modeling, requirements analysis |
| **11-22.03.24** | **Weeks 5-7** | Project management, modular software design. Problem sessions. |
| **25.03-6.04.24** | **Weeks 7-8**  | Midterm exams.  |
| **8-26.04.24** | **Weeks 9-11** | Object-oriented analysis and design techniques. |
| **29.04-10.05.24** | **Weeks 12-13**   | Design documentation using symbolic representations, Quality issues. |
| **13-24.05.24** | **Weeks 14-15**  | UML diagrams. Software testing. |
| **27-31.05.24** | **Week 15** | Problem sessions. 30.05.24 last day of classes |
| **03-14.06.24** | **Weeks 16-17** | 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** Upon successful completion of the course, students are expected to have the following competencies: (1)      Know phases of the software development process and be able to apply them for a particular system (2)    Know waterfall, incremental, agile, component-based models and be able applying them(3)    Know methods of estimation, system modelling and be able to apply them(4)    Know methods of requirements analysis and be able to apply them(5)      Know modular software design, object-oriented analysis and design techniques and be able to apply them(6)    Know methods of composing design documentation using symbolic representations, UML diagrams and be able applying them(7)    Know methods of behavioural and static system modelling and be able applying them(8)      Know methods of testing and be able applying them(9)    Know  project management approaches and be able applying them(10) Understand notions of software quality assurance and be able to apply them(11) Work on a Tern project in a team |
| **Assessment** | **Method** | **No** | **Percentage** |
| Midterm Exam(s) | 1 | 30% |
| Attendance |   | 0% |
| Project | 1 | 25 % |
| Labs | 3 | 5% |
| Final Examination (Comprehensive) | 1 | 40% |
| **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 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:** Prof. Dr. Alexander Chefranov | **Date Prepared:** 18February 2024 |
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