

School of Engineering and Natural Sciences / Computer Engineering (English)

2023 - 2024 Academic Year

INTRODUCTION to COMPUTER ENGINEERING

Syllabus

| Course Description | | | | | |
|---|--|--------------------------------|-------------------------|---------------------------|-------------|
| Name | Code | Semester | T+A Hour | Credit | ECTS |
| INTRODUCTION to COMPUTER ENGINEERING | COE1110748 | Fall Semester | 2+2 | 3 | 4 |
| Prerequisites Courses | | | | | |
| Recommended Elective Courses | Data Communications and Computer Networking | | | | |
| Language of Instruction | English | | | | |
| Course Level | First Cycle (Bachelor's Degree) | | | | |
| Course Type | Required | | | | |
| Course Coordinator | Prof.Dr. Mehmet Kemal ÖZDEMİR | | | | |
| Name of Lecturer(s) | Prof.Dr. Selim AKYOKUŞ, Prof.Dr. Reda ALHAJJ, Prof.Dr. Bahadır Kürşat GÜNTÜRK, Prof.Dr. Mehmet Kemal ÖZDEMİR, Assoc.Prof. Hüseyin Şerif SAVCI, Assist.Prof. Mustafa AKTAN | | | | |
| Assistant(s) | http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-01sc-introduction-to-electrical-engineering-and-computer-science-i-spring-2011/ | | | | |
| Aim | The aim of this course is to explain computer engineering and describe its main fields of study. | | | | |
| Course Content | This course contains; Introduction to Engineering Profession and Career, Introduction to Engineering Design, Circuits, Signals and Systems, Probability and Statistics in Engineering, Exam Week, Probability and Statistics in Engineering, An introduction to Computer Science, Data Science, Introduction to Algorithms, Machine Learning and Artificial Intelligence, Software Engineering, UML, and State Machines. | | | | |
| Course Learning Outcomes | | | Teaching Methods | Assessment Methods | |
| 1. Define computer engineering | | | 14, 16, 19, 9 | A, E | |
| 2. Explain different fields of computer engineering | | | 14, 19, 9 | A, E | |
| 3. Summarize social, professional, and ethical issues | | | 10, 14, 16, 9 | A, E | |
| 4. Translate innovation and entrepreneurship issues | | | 10, 14, 19, 9 | A, E | |
| 5. Understand the steps required to design complex systems. | | | 17, 21, 9 | A, E, F | |
| Teaching Methods | 10: Discussion Method, 14: Self Study Method, 16: Question - Answer Technique, 17: Experimental Technique, 19: Brainstorming Technique, 21: Simulation Technique, 9: Lecture Method | | | | |
| Assessment Methods | A: Traditional Written Exam, E: Homework, F: Project Task | | | | |
| Lecture Schedule | | | | | |
| Sequence | Topics | Preliminary Preparation | | | |
| 1 | Introduction to Engineering Profession and Career | Lecture Slides Week 1 | | | |
| 2 | Introduction to Engineering Design | Lecture Slides Week 2 | | | |
| 3 | Circuits | Lecture Slides Week 3 | | | |
| 4 | Circuits | Lecture Slides Week 3 | | | |
| 5 | Signals and Systems | Lecture Slides Week 5 | | | |
| 6 | Signals and Systems | Lecture Slides Week 5 | | | |
| 7 | Probability and Statistics in Engineering | Lecture Slides Week 7 | | | |
| 8 | Exam Week | All lecture slides till Week 7 | | | |
| 9 | Probability and Statistics in Engineering | Lecture Slides Week 9 | | | |
| 10 | An introduction to Computer Science | Lecture Slides Week 10 | | | |
| 11 | Data Science | Lecture Slides Week 11 | | | |
| 12 | Introduction to Algorithms | Lecture Slides Week 12 | | | |
| 13 | Machine Learning and Artificial Intelligence | Lecture Slides Week 13 | | | |
| 14 | Software Engineering, UML, and State Machines | Lecture Slides Week 14 | | | |
| Evaluation Methods | | | Weight(%) | | |
| Midterm Exam | | | 30 | | |
| General Exam | | | 70 | | |

| Resources | |
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| Powerpoint slides 1. Saeed Moaveni, "Engineering Fundamentals: An Introduction to Engineering" Cengage Learning, 5th edition. | |
| 2. http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-01sc-introduction-to-electrical-engineering-and-computer-science-i-spring-2011/Syllabus/MIT6_01SCS11_notes.pdf | |