

Department of Computer Engineering
Undergraduate Curriculum

| <u>First Semester</u> | | | <u>Contact / Credit</u> | <u>Second Semester</u> | | | <u>Contact / Credit</u> |
|-----------------------|-----|--|-------------------------|------------------------|-----|---|-------------------------|
| | | | <u>Hours / ECTS</u> | | | | <u>Hours / ECTS</u> |
| CHEM | 107 | Basic Chemistry | (4+0) 4 / 6 | MATH | 102 | Calculus II | (4+0) 4 / 6 |
| MATH | 101 | Calculus I | (4+0) 4 / 6 | MATH | 256 | Linear Algebra | (3+0) 3 / 4 |
| PHYS | 101 | Physics I | (4+0) 4 / 5 | PHYS | 102 | Physics II | (4+0) 4 / 6 |
| CSE | 100 | Intro. to Computer Engineering | (2+0) 2 / 3 | PHYS | 103 | Physics Lab | (0+2) 1 / 2 |
| CSE | 141 | Intro. to Comp. Programming | (3+2) 4 / 6 | CSE | 142 | Intermediate Programming | (3+2) 4 / 8 |
| ATA | 121 | Ataturk's Principles and the History of Turkish Renovation I | (2+0) 2 / 2 | ATA | 122 | Ataturk's Principles and the History of Turkish Renovation II | (2+0) 2 / 2 |
| TRD | 121 | Turkish Language I | (2+0) 2 / 2 | TRD | 122 | Turkish Language II | (2+0) 2 / 2 |
| | | | (21+2) 22/30 | | | | (18+4) 20/30 |

| <u>Third Semester</u> | | | <u>Contact / Credit</u> | <u>Fourth Semester</u> | | | <u>Contact / Credit</u> |
|-----------------------|-----|---------------------------|-------------------------|------------------------|-----|------------------------|-------------------------|
| | | | <u>Hours / ECTS</u> | | | | <u>Hours / ECTS</u> |
| MATH | 255 | Differential Equations | (3+0) 3 / 5 | MATH | 259 | Numerical Methods | (3+0) 3 / 4 |
| MATH | 257 | Discrete Mathematics | (3+0) 3 / 7 | EE | 232 | Electronics | (2+2) 3 / 5 |
| EE | 231 | Electric Circuits | (3+0) 3 / 5 | STAT | 253 | Prob. and Statistics | (3+0) 3 / 5 |
| CSE | 225 | Data Structures | (3+2) 4 / 9 | CSE | 238 | Systems Programming | (2+2) 3 / 7 |
| ECON | 203 | Introduction to Economics | (3+0) 3 / 4 | CSE | 246 | Analysis of Algorithms | (3+0) 3 / 6 |
| | | | (15+2) 16/30 | ECON | 204 | Engineering Economy | (2+0) 2 / 3 |
| | | | | | | | (15+4) 17/30 |

CSE 300 Summer Practice (Non-Credit) / 3

| <u>Fifth Semester</u> | | | <u>Contact / Credit</u> | <u>Sixth Semester</u> | | | <u>Contact / Credit</u> |
|-----------------------|-----|------------------------------|-------------------------|-----------------------|-----|-----------------------------|-------------------------|
| | | | <u>Hours / ECTS</u> | | | | <u>Hours / ECTS</u> |
| CSE | 315 | Digital Design | (3+2) 4 / 6 | CSE | 338 | Computer Organization | (3+2) 4 / 7 |
| CSE | 333 | Operating Systems | (3+2) 4 / 7 | CSE | 344 | Software Engineering | (3+2) 4 / 7 |
| CSE | 355 | Database Systems | (3+2) 4 / 6 | CSE | 348 | Signals and Systems | (3+0) 3 / 5 |
| CSE | 363 | Object-Oriented Soft. Design | (3+0) 3 / 5 | CSE | 364 | Formal Lang. & Auto. Theory | (3+0) 3 / 6 |
| NTE | xxx | Non-technical Elective I | (2+0) 2 / 3 | IE | 335 | Operation Research | (3+0) 3 / 5 |
| | | | (14+6) 17 / 30 | | | | (15+4) 17/30 |

CSE 400 Summer Practice (Non-Credit) / 3

| <u>Seventh Semester</u> | | | <u>Contact / Credit</u> | <u>Eighth Semester</u> | | | <u>Contact / Credit</u> |
|-------------------------|-----|----------------------------------|-------------------------|------------------------|-----|------------------------------|-------------------------|
| | | | <u>Hours / ECTS</u> | | | | <u>Hours / ECTS</u> |
| CSE | 417 | Microprocessors | (3+2) 4 / 5 | CSE | 453 | Info. Sys: Analysis & Design | (3+0) 3 / 5 |
| CSE | 474 | Computer Networks | (3+0) 3 / 5 | CSE | 498 | Engineering Project II | (0+4) 2 / 8 |
| CSE | 497 | Engineering Project I | (0+4) 2 / 5 | LAW | 203 | Business Law and Ethics | (3+0) 3 / 4 |
| IE | 381 | Modeling and Discrete Simulation | (3+0) 3 / 4 | TE | xxx | Technical Elective II | (3+0) 3 / 5 |
| TE | xxx | Technical Elective I | (3+0) 3 / 5 | TE | xxx | Technical Elective III | (3+0) 3 / 5 |
| NTE | xxx | Non-technical Elective II | (2+0) 2 / 3 | NTE | xxx | Non-technical Elective III | (2+0) 2 / 3 |
| | | | (14+6) 17/30 | | | | (14+4) 16 / 30 |

Total Credits = **142** Total Contact Hours = **158** Total Number of Courses = **47**
TECHNICAL ELECTIVES (3+0) 3

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|--|---|
| CSE 414 VLSI Circuit Design | CSE 432 Distributed Systems |
| CSE 426 System Dynamics and Control | CSE 434 Advanced Unix Programming |
| CSE 438 Parallel Processing | CSE 444 Software Project Management |
| CSE 454 Distributed Databases | CSE 456 Management of Information Systems |
| CSE 457 Information System Security | CSE 458 Fundamentals of Electronic Commerce |
| CSE 459 Internet Programming | CSE 460 Principles of Programming Languages |
| CSE 461 Compiler Design | CSE 466 Introduction to Cryptography |
| CSE 470 Software Framework | CSE 486 Mobile Device Programming |
| CSE 475 Wireless and Mobile Networks | CSE 482 Artificial Intelligence |
| CSE 483 Computer Graphics | CSE 484 Multimedia Systems |
| CSE 488 Machine Learning | CSE 493 Seminar in Computer Engineering |
| CSE 494 Special Topics in Computer Engineering I | CSE 495 Special Topics in Computer Engineering II |

Courses from other departments or from the graduate programs can be taken as technical electives with the consent of the instructor and the approval of the academic advisor. At most one of the three technical electives can be taken from the other departments. Some technical electives may have prerequisite(s).