

**Department of Computer Engineering**  
**Undergraduate Curriculum**

| FIRST SEMESTER |  |           |          |           |           | SECOND SEMESTER |   |           |          |           |           |
|----------------|--|-----------|----------|-----------|-----------|-----------------|---|-----------|----------|-----------|-----------|
| Course Code    | Course Name  | T         | A        | CR        | ECTS      | Course Code     | Course Name   | T         | A        | CR        | ECTS      |
| ATA121         | Ataturk's Principles and the History of Turkish Renovation I | 2         | 0        | 2         | 2         | ATA122          | Ataturk's Principles and the History of Turkish Renovation II | 2         | 0        | 2         | 2         |
| MBG1201        | Introduction to Modern Biology                               | 3         | 0        | 5         | 5         | CSE1242         | Computer Programming II                                       | 3         | 2        | 6         | 6         |
| CSE1200        | Introduction to Computer Engineering                         | 3         | 0        | 4         | 4         | MATH1002        | Calculus II   | 4         | 0        | 6         | 6         |
| CSE1241        | Computer Programming I                                       | 3         | 2        | 6         | 6         | MATH2256        | Linear Algebra for Computer Engineering                       | 3         | 0        | 5         | 5         |
| MATH1001       | Calculus I   | 4         | 0        | 6         | 6         | NTExxx          | Non-Technical Elective - 1                                    | 2         | 0        | 3         | 3         |
| PHYS1101       | Physics I  | 3         | 0        | 4         | 4         | PHYS1102        | Physics II  | 3         | 0        | 4         | 4         |
| PHYS1103       | Physics Lab I  | 0         | 2        | 2         | 2         | PHYS1104        | Physics Lab II  | 0         | 2        | 2         | 2         |
| TRD121         | Türk Dili I  | 2         | 0        | 2         | 2         | TRD122          | Türk Dili II  | 2         | 0        | 2         | 2         |
| <b>Total</b>   |  | <b>20</b> | <b>4</b> | <b>31</b> | <b>31</b> | <b>Total</b>    |   | <b>19</b> | <b>4</b> | <b>30</b> | <b>30</b> |

| THIRD SEMESTER |                                   |           |          |           |           | FOURTH SEMESTER |  |           |          |           |           |
|----------------|-----------------------------------|-----------|----------|-----------|-----------|-----------------|--|-----------|----------|-----------|-----------|
| Course Code    | Course Name                       | T         | A        | CR        | ECTS      | Course Code     | Course Name                              | T         | A        | CR        | ECTS      |
| CSE2023        | Discrete Computational Structures | 3         | 0        | 6         | 6         | CSE2246         | Analysis of Algorithms                   | 3         | 2        | 6         | 6         |
| CSE2225        | Data Structures                   | 3         | 2        | 7         | 7         | CSE2138         | Systems Programming                      | 3         | 2        | 7         | 7         |
| ECON2004       | Engineering Economy               | 2         | 0        | 4         | 4         | CSE2260         | Principles of Programming Languages      | 3         | 2        | 6         | 6         |
| EE2031         | Electric Circuits                 | 3         | 0        | 5         | 5         | EE2032          | Electronics                              | 2         | 2        | 5         | 5         |
| MATH2055       | Differential Equations            | 3         | 0        | 4         | 4         | STAT2253        | Prob. and Stat. for Computer Engineering | 3         | 0        | 5         | 5         |
| MATH2059       | Numerical Methods                 | 3         | 0        | 4         | 4         |                 |  |           |          |           |           |
| <b>Total</b>   |                                   | <b>17</b> | <b>2</b> | <b>30</b> | <b>30</b> | <b>Total</b>    |  | <b>14</b> | <b>8</b> | <b>29</b> | <b>29</b> |

| FIFTH SEMESTER |                                  |           |          |           |           | SIXTH SEMESTER |                                      |           |          |           |           |
|----------------|----------------------------------|-----------|----------|-----------|-----------|----------------|--------------------------------------|-----------|----------|-----------|-----------|
| Course Code    | Course Name                      | T         | A        | CR        | ECTS      | Course Code    | Course Name                          | T         | A        | CR        | ECTS      |
| CSE3000        | Summer Practice I                | 0         | 0        | 10        | 10        | CSE3038        | Computer Organization                | 3         | 2        | 7         | 7         |
| CSE3215        | Digital Logic Design             | 3         | 2        | 6         | 6         | CSE3044        | Software Engineering                 | 3         | 2        | 7         | 7         |
| CSE3033        | Operating Systems                | 3         | 2        | 7         | 7         | CSE3048        | Introduction to Signals and Systems  | 3         | 0        | 5         | 5         |
| CSE3055        | Database Systems                 | 3         | 2        | 7         | 7         | CSE3264        | Formal Languages and Automata Theory | 3         | 0        | 5         | 5         |
| CSE3063        | Object-Oriented Software Design  | 3         | 0        | 5         | 5         | IE3235         | Operations Research                  | 3         | 0        | 4         | 4         |
| IE3081         | Modeling and Discrete Simulation | 3         | 0        | 4         | 4         | COM2202        | Technical Comm. and Entrepreneurship | 2         | 0        | 2         | 2         |
| <b>Total</b>   |                                  | <b>15</b> | <b>6</b> | <b>39</b> | <b>39</b> | <b>Total</b>   |                                      | <b>17</b> | <b>4</b> | <b>30</b> | <b>30</b> |

| SEVENTH SEMESTER |                                       |           |          |           |           | EIGHTH SEMESTER |                             |           |          |           |           |
|------------------|---------------------------------------|-----------|----------|-----------|-----------|-----------------|-----------------------------|-----------|----------|-----------|-----------|
| Course Code      | Course Name                           | T         | A        | CR        | ECTS      | Course Code     | Course Name                 | T         | A        | CR        | ECTS      |
| CSE4000          | Summer Practice II                    | 0         | 0        | 10        | 10        | CSE4298         | Engineering Project II      | 0         | 2        | 5         | 5         |
| CSE4074          | Computer Networks                     | 3         | 0        | 5         | 5         | ISG122          | İş Sağlığı ve Güvenliği II  | 2         | 0        | 2         | 2         |
| CSE4219          | Principles of Embedded Systems Design | 3         | 2        | 6         | 6         | NTExxx          | Non-Technical Elective - 2  | 2         | 0        | 3         | 3         |
| CSE4297          | Engineering Project I                 | 0         | 2        | 5         | 5         | FTExxx          | Faculty Technical Electives | 3         | 0        | 5         | 5         |
| ISG121           | İş Sağlığı ve Güvenliği I             | 2         | 0        | 2         | 2         | TExxx           | Technical Elective - 2      | 3         | 0        | 5         | 5         |
| CSE4288          | Introduction to Machine Learning      | 3         | 0        | 5         | 5         | TExxx           | Technical Elective - 3      | 3         | 0        | 5         | 5         |
| TExxx            | Technical Elective - 1                | 3         | 0        | 5         | 5         | TExxx           | Technical Elective - 4      | 3         | 0        | 5         | 5         |
| UE               | University Elective                   | 2         | 0        | 3         | 3         |                 |                             |           |          |           |           |
| <b>Total</b>     |                                       | <b>16</b> | <b>4</b> | <b>41</b> | <b>41</b> | <b>Total</b>    |                             | <b>16</b> | <b>2</b> | <b>30</b> | <b>30</b> |

T: Theoretical Hours, A: Applied Hours, CR: Credits, ECTS: ECTS Credits Total Credits: 260, Total ECTS Credits: 260, Total Contact Hours: 168, Total Number of Courses: 54

| TECHNICAL ELECTIVES |   |         |   |
|---------------------|---|---------|---|
| CSE4026             | Introduction to Robotics and Control Theory | CSE4067 | Introduction to Blockchain Programming      |
| CSE4032             | Introduction to Distributed Systems         | CSE4070 | Software Frameworks                         |
| CSE4034             | Advanced Unix Programming                   | CSE4075 | Wireless and Mobile Networks                |
| CSE4038             | Introduction to Parallel Processing         | CSE4077 | Advanced Data Structures                    |
| CSE4040             | Cloud Computing                             | CSE4078 | Introduction to Natural Language Processing |
| CSE4044             | Software Project Management                 | CSE4079 | Introduction to Deep Learning               |
| CSE4053             | Information Systems: Analysis and Design    | CSE4082 | Artificial Intelligence                     |
| CSE4056             | Management of Information Systems           | CSE4083 | Computer Graphics                           |
| CSE4057             | Information Systems Security                | CSE4084 | Multimedia Systems                          |
| CSE4058             | Fundamentals of Electronic Commerce         | CSE4085 | Human Computer Interaction                  |
| CSE4059             | Internet Programming                        | CSE4086 | Mobile Device Programming                   |
| CSE4061             | Compiler Design                             | CSE4217 | Microprocessors                             |
| CSE4062             | Introduction to Data Science and Analytics  | CSE4093 | Special Topics in Computer Engineering I    |
| CSE4063             | Fundamentals of Data Mining                 | CSE4094 | Special Topics in Computer Engineering II   |
| CSE4065             | Introduction to Computational Genomics      | CSE4095 | Special Topics in Computer Engineering III  |
| CSE4066             | Introduction to Cryptography                | CSE4096 | Special Topics in Computer Engineering IV   |