

**ISTINYE UNIVERSITY**  
**(DEPARTMENT OF BIOMEDICAL ENGINEERING)**

| 1st SEMESTER |  |           |          |           |                         |
|--------------|--|-----------|----------|-----------|-------------------------|
| CODE         | COURSE                                 | T         | P        | ECTS      | Language of Instruction |
| BME101       | Introduction to Biomedical Engineering | 3         | 0        | 5         | English                 |
| ENS101       | Calculus 1                             | 2         | 2        | 5         | English                 |
| ENS103       | Computational Thinking                 | 3         | 2        | 6         | English                 |
| ENS105       | Physics 1                              | 4         | 1        | 6         | English                 |
| ENS107       | Computer Literacy                      | 2         | 2        | 4         | English                 |
| TRK101       | Türk Dili 1                            | 2         | 0        | 2         | Turkish                 |
| ENS111       | Occupational Health and Safety 1       | 2         | 0        | 2         |                         |
| <b>TOTAL</b> |  | <b>18</b> | <b>7</b> | <b>30</b> |                         |

| 2nd SEMESTER |                                  |           |          |           |                         |
|--------------|----------------------------------|-----------|----------|-----------|-------------------------|
| CODE         | COURSE                           | T         | P        | ECTS      | Language of Instruction |
| BME102       | Biochemistry                     | 2         | 2        | 5         | English                 |
| ENS102       | Linear Algebra with Applications | 2         | 2        | 5         | English                 |
| ENS106       | Physics 2                        | 4         | 1        | 6         | English                 |
| ENS108       | Computer Aided Design            | 2         | 2        | 5         | English                 |
| ENS110       | Calculus 2                       | 2         | 2        | 5         | English                 |
| TRK102       | Türk Dili 2                      | 2         | 0        | 2         | Turkish                 |
| ENS112       | Occupational Health and Safety 2 | 2         | 0        | 2         |                         |
| <b>TOTAL</b> |                                  | <b>16</b> | <b>9</b> | <b>30</b> |                         |

| 3rd SEMESTER |                                      |           |          |           |                         |
|--------------|--------------------------------------|-----------|----------|-----------|-------------------------|
| CODE         | COURSE                               | T         | P        | ECTS      | Language of Instruction |
| ATA101       | Atatürk İlkeleri ve İnkılap Tarihi 1 | 2         | 0        | 2         | Turkish                 |
| BME201       | Biological Sciences for Engineering  | 2         | 2        | 6         | English                 |
| BME203       | Biomaterials                         | 3         | 1        | 5         | English                 |
| BME205       | Electrical Circuits                  | 3         | 2        | 7         | English                 |
| DIL101       | Genel İngilizce 1                    | 2         | 0        | 2         | English                 |
| ENS201       | Differential Equations               | 2         | 2        | 6         | English                 |
| SEG001       | İstinyelilik Manifestosu 1           | 0         | 1        | 1         |                         |
| <b>TOTAL</b> |                                      | <b>14</b> | <b>8</b> | <b>29</b> |                         |

| 4th SEMESTER |                                      |           |          |           |                         |
|--------------|--------------------------------------|-----------|----------|-----------|-------------------------|
| CODE         | COURSE                               | T         | P        | ECTS      | Language of Instruction |
| ATA102       | Atatürk İlkeleri ve İnkılap Tarihi 2 | 2         | 0        | 2         | Turkish                 |
| BME202       | Human Anatomy and Physiology         | 4         | 0        | 6         | English                 |
| BME204       | Biomedical Electronics               | 3         | 2        | 7         | English                 |
| DIL102       | Genel İngilizce 2                    | 2         | 0        | 2         | English                 |
| ENS202       | Probability and statistics           | 3         | 2        | 6         | English                 |
| ENS204       | Signals and Systems                  | 3         | 2        | 7         | English                 |
| SEG002       | İstinyelilik Manifestosu 2           | 0         | 1        | 1         |                         |
| <b>TOTAL</b> |                                      | <b>17</b> | <b>7</b> | <b>31</b> |                         |

| 5rd SEMESTER |                            |          |          |           |                         |
|--------------|----------------------------|----------|----------|-----------|-------------------------|
| CODE         | COURSE                     | T        | P        | ECTS      | Language of Instruction |
| BME301       | Biomedical Instrumentation | 3        | 2        | 7         | English                 |
| BME303       | Biomechanics               | 3        | 2        | 6         | English                 |
| BME305       | Summer Internship 1        | 0        | 1        | 1         | English                 |
| BME307       | Principles of Economics    | 3        | 0        | 5         | English                 |
|              | Department Elective        |          |          | 5         | English                 |
|              | Department Elective        |          |          | 5         | English                 |
| <b>TOTAL</b> |                            | <b>0</b> | <b>0</b> | <b>29</b> |                         |

| 6th SEMESTER |                                    |           |          |           |                         |
|--------------|------------------------------------|-----------|----------|-----------|-------------------------|
| CODE         | COURSE                             | T         | P        | ECTS      | Language of Instruction |
| BME302       | Biomedical Transport Phenomena     | 3         | 2        | 7         | English                 |
| BME304       | Medical Imaging                    | 3         | 2        | 7         | English                 |
| BME306       | Biotechnology and Biopharmaceutics | 3         | 1        | 5         | English                 |
| BME308       | Engineering Ethics                 | 2         | 0        | 2         | English                 |
|              | Department Elective                |           |          | 5         | English                 |
|              | Department Elective                |           |          | 5         | English                 |
| <b>TOTAL</b> |                                    | <b>11</b> | <b>5</b> | <b>31</b> |                         |

| 7rd SEMESTER |                            |          |          |           |                         |
|--------------|----------------------------|----------|----------|-----------|-------------------------|
| CODE         | COURSE                     | T        | P        | ECTS      | Language of Instruction |
| BME401       | Biodesign 1                | 1        | 2        | 3         | English                 |
| BME403       | Capstone Project 1         | 3        | 2        | 6         | English                 |
| BME405       | Summer Internship 2        | 0        | 1        | 1         | English                 |
| SEG003       | İstinyelilik Manifestosu 3 | 0        | 1        | 1         | English                 |
|              | Department Elective        |          |          | 5         | English                 |
|              | University Elective        |          |          | 5         | English                 |
|              | Department Elective        |          |          | 5         | English                 |
|              | Department Elective        |          |          | 5         | English                 |
| <b>TOTAL</b> |                            | <b>0</b> | <b>0</b> | <b>31</b> |                         |

| 8th SEMESTER |                            |          |          |           |                         |
|--------------|----------------------------|----------|----------|-----------|-------------------------|
| CODE         | COURSE                     | T        | P        | ECTS      | Language of Instruction |
| BME402       | Biodesign 2                | 0        | 2        | 2         | English                 |
| BME404       | Capstone Project 2         | 3        | 2        | 6         | English                 |
| SEG004       | İstinyelilik Manifestosu 4 | 0        | 1        | 1         | English                 |
|              | Department Elective        |          |          | 5         | English                 |
|              | University Elective        |          |          | 5         | English                 |
|              | Department Elective        |          |          | 5         | English                 |
|              | Department Elective        |          |          | 5         | English                 |
| <b>TOTAL</b> |                            | <b>3</b> | <b>3</b> | <b>27</b> |                         |

**DESCRIPTION**  
**T:** Theoric  
**P:** Practice  
**ECTS:** European Credit Transfer System  
**Language of Instruction:** Defines the medium of the course regardless of the language of instruction of the department.

| Elective Major Area Courses |   |          |          |            |                         |
|-----------------------------|---|----------|----------|------------|-------------------------|
| CODE                        | COURSE  | T        | P        | ECTS       | Language of Instruction |
| BME001                      | Biological systems modeling                     |          |          | 5          | English                 |
| BME002                      | PCR Based Molecular Diagnostics                 |          |          | 5          | English                 |
| BME003                      | Biomedical Signal Processing                    |          |          | 5          | English                 |
| BME004                      | Nanomedicine                                    |          |          | 5          | English                 |
| BME005                      | Tissue Engineering                              |          |          | 5          | English                 |
| BME006                      | Stem Cells and Cancer                           |          |          | 5          | English                 |
| BME007                      | Introduction to Machine Learning                |          |          | 5          | English                 |
| BME008                      | Genetics  |          |          | 5          | English                 |
| BME009                      | Bioinformatics                                  |          |          | 5          | English                 |
| BME010                      | Research Techniques                             |          |          | 5          | English                 |
| BME011                      | 3D Printing in Medicine                         |          |          | 5          | English                 |
| BME012                      | Advanced Python                                 |          |          | 5          | English                 |
| BME013                      | Artificial Intelligence in Medicine             |          |          | 5          | English                 |
| BME014                      | Microprocessors                                 |          |          | 5          | English                 |
| BME015                      | Quality management in healthcare                |          |          | 5          | English                 |
| BME016                      | Patient safety and risk management              |          |          | 5          | English                 |
| BME017                      | Numerical Simulations in Biomedical Engineering |          |          | 5          | English                 |
| BME018                      | Introduction to Biomedical Optics               |          |          | 5          | English                 |
| BME019                      | Polymer Engineering                             |          |          | 5          | English                 |
| BME020                      | Drug Delivery                                   |          |          | 5          | English                 |
| BME021                      | Implant Design                                  |          |          | 5          | English                 |
| BME022                      | Introduction to Neural Engineering              |          |          | 5          | English                 |
| BME023                      | Molecular Imaging                               |          |          | 5          | English                 |
| BME024                      | Human Computer Interaction                      |          |          | 5          | English                 |
| BME025                      | BioMEMS/NEMS                                    |          |          | 5          | English                 |
| BME026                      | Bioelectricity and Biomagnetism                 |          |          | 5          | English                 |
| BME027                      | Health and Medical Informatics                  |          |          | 5          | English                 |
| <b>TOTAL</b>                |   | <b>0</b> | <b>0</b> | <b>135</b> |                         |