



FACULTY OF ENGINEERING AND NATURAL SCIENCES
DEPARTMENT OF MECHATRONICS ENGINEERING
MECHATRONICS ENGINEERING PROGRAMME (IN ENGLISH)
UNDERGRADUATE CURRICULUM

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| Semester 1 | | | | | | |
|---------------------|----------------------------------|-----------|---|---|-----------|---------------------|
| Code | Course Title | T | A | C | ECTS | Status Prerequisite |
| MATH113 | Mathematics I | 3 | 2 | 4 | 6 | Compulsory |
| PHYS113 | Physics-I | 2 | 2 | 3 | 5 | Compulsory |
| MCHT103 | Introduction to MCHT Engineering | 2 | 0 | 2 | 7 | Compulsory |
| CHM103 | Chemistry | 2 | 2 | 3 | 5 | Compulsory |
| BBA222 | Entrepreneurship Applications | 2 | 0 | 2 | 3 | Compulsory |
| | Foreign Language Elective | 2 | 2 | 3 | 4 | Elective |
| Total Credit | | 17 | | | 30 | |

| Semester 2 | | | | | | |
|---------------------|---------------------------|-----------|---|---|-----------|---------------------|
| Code | Course Title | T | A | C | ECTS | Status Prerequisite |
| MATH114 | Mathematics II | 3 | 2 | 4 | 6 | Compulsory MATH113 |
| PHYS114 | Physics-II | 2 | 2 | 3 | 5 | Compulsory PHYS113 |
| EEE104 | Logic Circuit Design | 2 | 2 | 3 | 8 | Compulsory |
| CLP001 | Career and Life Planning | 0 | 2 | 1 | 3 | Compulsory |
| | University Elective | 3 | 0 | 3 | 4 | Elective |
| | Foreign Language Elective | 2 | 2 | 3 | 4 | Elective |
| Total Credit | | 17 | | | 30 | |

| Semester 3 | | | | | | |
|---------------------|----------------------------------|-----------|---|---|-----------|---------------------|
| Code | Course Title | T | A | C | ECTS | Status Prerequisite |
| MATH215 | Mathematics III | 2 | 2 | 3 | 6 | Compulsory MATH113 |
| EEE207 | Circuit Analysis | 3 | 0 | 3 | 5 | Compulsory |
| CMPE152 | Computer Programming | 2 | 2 | 3 | 5 | Compulsory |
| ME201 | Computer Aided Technical Drawing | 2 | 2 | 3 | 5 | Compulsory |
| MCHT231 | Engineering Mechanics | 3 | 0 | 3 | 5 | Compulsory |
| MATH220 | Numerical Methods | 2 | 2 | 3 | 4 | Compulsory MATH113 |
| Total Credit | | 18 | | | 30 | |

| Semester 4 | | | | | | |
|---------------------|-----------------------------|-----------|---|---|-----------|---------------------|
| Code | Course Title | T | A | C | ECTS | Status Prerequisite |
| MATH216 | Mathematics IV | 2 | 2 | 3 | 6 | Compulsory MATH114 |
| EEE212 | Electronic Circuits I | 3 | 2 | 4 | 5 | Compulsory |
| EEE214 | Signals and Systems | 3 | 0 | 3 | 7 | Compulsory MATH113 |
| EEE220 | Electromagnetic Theory | 2 | 2 | 3 | 6 | Compulsory MATH113 |
| MCHT236 | Mechatronics Systems Design | 2 | 2 | 3 | 7 | Compulsory |
| Total Credit | | 16 | | | 31 | |

| Semester 5 | | | | | | |
|---------------------|-------------------------------------|-----------|---|---|-----------|---------------------|
| Code | Course Title | T | A | C | ECTS | Status Prerequisite |
| EEE301 | Electromechanical Energy Conversion | 3 | 2 | 4 | 7 | Compulsory |
| EEE303 | Control Systems | 3 | 0 | 3 | 7 | Compulsory |
| EEE305 | Electronic Circuits II | 3 | 2 | 4 | 6 | Compulsory |
| ME309 | Dynamics | 3 | 0 | 3 | 5 | Compulsory |
| EEE311 | Digital Signal Processing | 2 | 2 | 3 | 5 | Compulsory |
| Total Credit | | 17 | | | 30 | |

| Semester 6 | | | | | | |
|---------------------|---|-----------|---|---|-----------|---------------------|
| Code | Course Title | T | A | C | ECTS | Status Prerequisite |
| EEE314 | Power Electronics & Motion Control Systems | 3 | 2 | 4 | 8 | Compulsory |
| ME310 | Theory of Machines | 3 | 0 | 3 | 6 | Compulsory |
| MCHT332 | Introduction to Thermal Systems Engineering | 3 | 0 | 3 | 6 | Compulsory |
| MCHT302 | Mechatronics Components & Instruments | 2 | 2 | 3 | 5 | Compulsory |
| EEE310 | Microcontrollers | 2 | 2 | 3 | 5 | Compulsory |
| Total Credit | | 16 | | | 30 | |

| Semester 7 | | | | | | |
|---------------------|--|-----------|---|---|-----------|---------------------|
| Code | Course Title | T | A | C | ECTS | Status Prerequisite |
| MCHT497 | Mechatronics Engineering Design | 0 | 2 | 1 | 4 | Compulsory |
| | Departmental Elective / Faculty Elective | 3 | 0 | 3 | 5 | Elective |
| | Departmental Elective / Faculty Elective | 3 | 0 | 3 | 5 | Elective |
| EEE409 | Science, Technology and Ethics | 2 | 0 | 2 | 8 | Compulsory |
| ATA111 | Atatürk Principles and The History of Turkish Revolution I (*) | 2 | 0 | 2 | 2 | Compulsory |
| TRD111 | Turkish-I (*) | 2 | 0 | 2 | 2 | Compulsory |
| INT001 | Internship 1 | 0 | 0 | 0 | 4 | Compulsory |
| Total Credit | | 13 | | | 30 | |

| Semester 8 | | | | | | |
|---------------------|---|-----------|---|---|-----------|---------------------|
| Code | Course Title | T | A | C | ECTS | Status Prerequisite |
| MCHT498 | Mechatronics Engineering Graduation Project | 0 | 4 | 2 | 4 | Compulsory |
| | Departmental Elective / Faculty Elective | 3 | 0 | 3 | 5 | Elective |
| | Departmental Elective / Faculty Elective | 3 | 0 | 3 | 5 | Elective |
| IE367 | Occupational Health and Safety | 3 | 0 | 3 | 5 | Compulsory |
| ATA112 | Atatürk Principles and The History of Turkish Revolution II (*) | 2 | 0 | 2 | 2 | Compulsory |
| TRD112 | Turkish-II (*) | 2 | 0 | 2 | 2 | Compulsory |
| INT002 | Internship 2 | 0 | 0 | 0 | 4 | Compulsory |
| MCHT494 | Seminar | 0 | 0 | 0 | 3 | Compulsory |
| Total Credit | | 15 | | | 30 | |

| | |
|---------------------|------------|
| TOTAL CREDIT | 129 |
| TOTAL ECTS | 241 |

Abbreviations: T=Weekly hours: theoretical; A=Weekly hours: application; C=Credits in Turkish System; ECTS= European Credit Transfer System

ELECTIVE COURSES

Semester 1

| Code | Course Title | T | A | C | ECTS | Status | Prerequisite |
|-------------------------|--------------|---|---|---|------|--------|--------------|
| SECOND FOREIGN LANGUAGE | | | | | | | |
| DEPARTMENTAL ELECTIVE | | | | | | | |
| FACULTY ELECTIVE | | | | | | | |
| UNIVERSITY ELECTIVE | | | | | | | |

Semester 3

| Code | Course Title | T | A | C | ECTS | Status | Prerequisite |
|-------------------------|--------------|---|---|---|------|--------|--------------|
| SECOND FOREIGN LANGUAGE | | | | | | | |
| DEPARTMENTAL ELECTIVE | | | | | | | |
| FACULTY ELECTIVE | | | | | | | |
| UNIVERSITY ELECTIVE | | | | | | | |

Semester 5

| Code | Course Title | T | A | C | ECTS | Status | Prerequisite |
|-------------------------|--------------|---|---|---|------|--------|--------------|
| SECOND FOREIGN LANGUAGE | | | | | | | |
| DEPARTMENTAL ELECTIVE | | | | | | | |
| FACULTY ELECTIVE | | | | | | | |
| UNIVERSITY ELECTIVE | | | | | | | |

Semester 7

| Code | Course Title | T | A | C | ECTS | Status | Prerequisite |
|-------------------------|--|---|---|---|------|----------|--------------|
| SECOND FOREIGN LANGUAGE | | | | | | | |
| DEPARTMENTAL ELECTIVE | | | | | | | |
| MCHT480 | Mechatronics Engineering OCOOP 1 | 3 | 0 | 3 | 5 | Elective | |
| MCHT482 | Mechatronics Engineering OCOOP 2 | 3 | 0 | 3 | 5 | Elective | |
| MCHT484 | Mechatronics Engineering OCOOP 3 | 3 | 0 | 3 | 5 | Elective | |
| MCHT486 | Mechatronics Engineering OCOOP 4 | 3 | 0 | 3 | 5 | Elective | |
| CENG482 | Embedded Systems | 3 | 0 | 3 | 5 | Elective | |
| CENG218 | Programming Languages and Applications | 3 | 0 | 3 | 5 | Elective | |
| MCHT460 | Industrial Robotics and Automation | 3 | 0 | 3 | 5 | Elective | |
| CENG489 | Pattern Recognition | 3 | 0 | 3 | 5 | Elective | |
| MCHT462 | Autonomous Mobile Robots | 3 | 0 | 3 | 5 | Elective | |
| MCHT477 | Introduction to Robotics | 3 | 0 | 3 | 5 | Elective | |
| MCHT464 | Computer Vision | 3 | 0 | 3 | 5 | Elective | |
| MCHT465 | Introduction to Deep Learning | 3 | 0 | 3 | 5 | Elective | |
| MCHT479 | Introduction to AI Systems | 3 | 0 | 3 | 5 | Elective | |
| MCHT478 | Python for Engineers | 3 | 0 | 3 | 5 | Elective | |
| EEE304 | Digital Design | 3 | 0 | 3 | 5 | Elective | |
| FACULTY ELECTIVE | | | | | | | |
| ENG368 | Wireless Networks | 3 | 0 | 3 | 5 | Elective | |
| ENG302 | Fuzzy Logic and Its Applications | 3 | 0 | 3 | 5 | Elective | |
| ENG304 | Technology Management | 3 | 0 | 3 | 5 | Elective | |
| ENG308 | Energy Policy | 3 | 0 | 3 | 5 | Elective | |
| ENG310 | Sustainable Energy & Environment | 3 | 0 | 3 | 5 | Elective | |
| ENG370 | Principles of Machine Learning | 3 | 0 | 3 | 5 | Elective | |
| ENG301 | Management for Engineers | 3 | 0 | 3 | 5 | Elective | |
| ENG303 | Project Management | 3 | 0 | 3 | 5 | Elective | |
| ENG353 | Electric Drives | 3 | 0 | 3 | 5 | Elective | |
| ENG351 | Digital Filters and Systems | 3 | 0 | 3 | 5 | Elective | |
| ENG355 | Image Processing | 3 | 0 | 3 | 5 | Elective | |
| ENG357 | Energy Laws and Regulations | 3 | 0 | 3 | 5 | Elective | |
| ENG476 | Applied Mathematics | 3 | 0 | 3 | 5 | Elective | |
| ENG477 | Materials Science for Engineers | 3 | 0 | 3 | 5 | Elective | |
| UNIVERSITY ELECTIVE | | | | | | | |
| ENG380 | Introduction to Sustainability | 3 | 0 | 3 | 5 | Elective | |

Semester 2

| Code | Course Title | T | A | C | ECTS | Status | Prerequisite |
|-------------------------|--------------|---|---|---|------|--------|--------------|
| SECOND FOREIGN LANGUAGE | | | | | | | |
| DEPARTMENTAL ELECTIVE | | | | | | | |
| FACULTY ELECTIVE | | | | | | | |
| UNIVERSITY ELECTIVE | | | | | | | |

Semester 4

| Code | Course Title | T | A | C | ECTS | Status | Prerequisite |
|-------------------------|--------------|---|---|---|------|--------|--------------|
| SECOND FOREIGN LANGUAGE | | | | | | | |
| DEPARTMENTAL ELECTIVE | | | | | | | |
| FACULTY ELECTIVE | | | | | | | |
| UNIVERSITY ELECTIVE | | | | | | | |

Semester 6

| Code | Course Title | T | A | C | ECTS | Status | Prerequisite |
|-------------------------|--------------|---|---|---|------|--------|--------------|
| SECOND FOREIGN LANGUAGE | | | | | | | |
| DEPARTMENTAL ELECTIVE | | | | | | | |
| FACULTY ELECTIVE | | | | | | | |
| UNIVERSITY ELECTIVE | | | | | | | |

Semester 8

| Code | Course Title | T | A | C | ECTS | Status | Prerequisite |
|-------------------------|--|---|---|---|------|----------|--------------|
| SECOND FOREIGN LANGUAGE | | | | | | | |
| DEPARTMENTAL ELECTIVE | | | | | | | |
| MCHT480 | Mechatronics Engineering OCOOP 1 | 3 | 0 | 3 | 5 | Elective | |
| MCHT482 | Mechatronics Engineering OCOOP 2 | 3 | 0 | 3 | 5 | Elective | |
| MCHT484 | Mechatronics Engineering OCOOP 3 | 3 | 0 | 3 | 5 | Elective | |
| MCHT486 | Mechatronics Engineering OCOOP 4 | 3 | 0 | 3 | 5 | Elective | |
| CENG482 | Embedded Systems | 3 | 0 | 3 | 5 | Elective | |
| CENG218 | Programming Languages and Applications | 3 | 0 | 3 | 5 | Elective | |
| MCHT460 | Industrial Robotics and Automation | 3 | 0 | 3 | 5 | Elective | |
| CENG489 | Pattern Recognition | 3 | 0 | 3 | 5 | Elective | |
| MCHT462 | Autonomous Mobile Robots | 3 | 0 | 3 | 5 | Elective | |
| MCHT477 | Introduction to Robotics | 3 | 0 | 3 | 5 | Elective | |
| MCHT464 | Computer Vision | 3 | 0 | 3 | 5 | Elective | |
| MCHT465 | Introduction to Deep Learning | 3 | 0 | 3 | 5 | Elective | |
| MCHT479 | Introduction to AI Systems | 3 | 0 | 3 | 5 | Elective | |
| MCHT478 | Python for Engineers | 3 | 0 | 3 | 5 | Elective | |
| EEE304 | Digital Design | 3 | 0 | 3 | 5 | Elective | |
| FACULTY ELECTIVE | | | | | | | |
| ENG368 | Wireless Networks | 3 | 0 | 3 | 5 | Elective | |
| ENG302 | Fuzzy Logic and Its Applications | 3 | 0 | 3 | 5 | Elective | |
| ENG304 | Technology Management | 3 | 0 | 3 | 5 | Elective | |
| ENG308 | Energy Policy | 3 | 0 | 3 | 5 | Elective | |
| ENG310 | Sustainable Energy & Environment | 3 | 0 | 3 | 5 | Elective | |
| ENG370 | Principles of Machine Learning | 3 | 0 | 3 | 5 | Elective | |
| ENG301 | Management for Engineers | 3 | 0 | 3 | 5 | Elective | |
| ENG303 | Project Management | 3 | 0 | 3 | 5 | Elective | |
| ENG353 | Electric Drives | 3 | 0 | 3 | 5 | Elective | |
| ENG351 | Digital Filters and Systems | 3 | 0 | 3 | 5 | Elective | |
| ENG355 | Image Processing | 3 | 0 | 3 | 5 | Elective | |
| ENG357 | Energy Laws and Regulations | 3 | 0 | 3 | 5 | Elective | |
| ENG476 | Applied Mathematics | 3 | 0 | 3 | 5 | Elective | |
| ENG477 | Materials Science for Engineers | 3 | 0 | 3 | 5 | Elective | |
| UNIVERSITY ELECTIVE | | | | | | | |
| ENG380 | Introduction to Sustainability | 3 | 0 | 3 | 5 | Elective | |