

MECHATRONICS ENGINEERING DEPARTMENT BACHELOR'S SCIENCE CURRICULUM (2016/17)

FRESHMAN YEAR

1. Semester

| Course Code | Course Title | T | R | C | ECTS |
|-----------------|--|----|---|----|------|
| CENG 161 | Introduction to Computer Science + Lab. | 3 | 2 | 4 | 5 |
| ENG 121 | Academic English I | 3 | 0 | 3 | 4 |
| MATH 157 | Calculus for Engineering I | 4 | 0 | 4 | 5 |
| PHYS 131 | Physics I | 3 | 2 | 4 | 6 |
| TURK 101 | Turkish I | 2 | 0 | 2 | 3 |
| MECE 101 | Computational Tools for Mechatronics Engineering | 1 | 0 | 1 | 1 |
| MECE 113 | Computer Aided Engineering Drawing I | 2 | 2 | 3 | 6 |
| Total 7 courses | | 17 | 8 | 21 | 30 |

**Not: MATH 157 Eqv. MATH 155
ESR 101 Eqv. ESR 103**

2. Semester

| Course Code | Course Title | T | R | C | ECTS |
|-----------------|--|----|---|----|------|
| MECE 114 | Computer Aided Engineering Drawing II | 2 | 2 | 3 | 4 |
| CENG 162 | Computer Programming I + Lab. | 3 | 2 | 4 | 5 |
| ENG 122 | Academic English II | 3 | 0 | 3 | 4 |
| MATH 158 | Calculus for Engineering II | 4 | 0 | 4 | 5 |
| PHYS 132 | Physics II | 3 | 2 | 4 | 6 |
| TURK 102 | Turkish II | 2 | 0 | 2 | 3 |
| MECE 104 | Fundamentals of Mechatronics Engineering | 2 | 0 | 2 | 2 |
| ESR 103 | Ethical Principals and Social Responsibility | 1 | 0 | 1 | 1 |
| Total 8 courses | | 19 | 8 | 23 | 30 |

Not: MATH 158 Eqv. MATH 156

SOPHMORE YEAR

3. Semester

| Course Code | Course Title | T | R | C | ECTS |
|-----------------|---------------------------------------|----|---|----|------|
| MECE 203 | Statics | 3 | 0 | 3 | 6 |
| MECE 210 | Manufacturing Processes | 3 | 2 | 4 | 5 |
| MECE 311 | Probability and Random Processes | 3 | 0 | 3 | 4 |
| MECE 233 | Electrical Circuit Analysis + Lab. | 3 | 2 | 4 | 4 |
| MECE 223 | Digital Design I + Lab. | 3 | 2 | 4 | 4 |
| MATH 254 | Introduction to Differential Equation | 4 | 0 | 4 | 4 |
| ENG 221 | Advanced Writing Skills | 2 | 0 | 2 | 3 |
| Total 7 courses | | 21 | 6 | 24 | 30 |

Not: MATH 254 Eqv. MATH 258

4. Semester

| Course Code | Course Title | T | R | C | ECTS |
|-----------------|---|----|---|----|------|
| MECE 206 | Dynamics | 3 | 0 | 3 | 4 |
| MECE 246 | Fundamentals of Electronics + Lab. | 3 | 2 | 4 | 5 |
| ENG 222 | Academic Presentation Skills | 2 | 0 | 2 | 3 |
| MECE 202 | Strength of Materials | 3 | 0 | 3 | 5 |
| MECE 232 | Advanced Electrical Circuit Analysis + Lab. | 3 | 2 | 4 | 4 |
| MATH 253 | Vector Calculus and Linear Algebra | 4 | 0 | 4 | 4 |
| MECE 218 | Principles of Signals and Systems + Lab. | 3 | 2 | 4 | 5 |
| Total 7 courses | | 21 | 6 | 24 | 30 |

Not: MATH 253 Eqv. MATH 255

JUNIOR YEAR

5. Semester

| Course Code | Course Title | T | R | C | ECTS |
|--------------------|-----------------------------------|----------|----------|----------|-------------|
| MECE 307 | Machine Elements I | 3 | 0 | 3 | 5 |
| Elective | Social Science Elective I | 3 | 0 | 3 | 3 |
| MSE 235 | Materials Science for Electronics | 3 | 0 | 3 | 4 |
| MECE 347 | Electronics + Lab. | 3 | 2 | 4 | 6 |
| MECE 301 | Theory of Machines I | 3 | 0 | 3 | 4 |
| Elective | Social Science Elective II | 3 | 0 | 3 | 3 |
| MECE 200 | Summer Training I | 0 | 0 | 0 | 5 |
| Total 7 courses | | 18 | 2 | 19 | 30 |

6. Semester

| Course Code | Course Title | T | R | C | ECTS |
|--------------------|-------------------------------------|----------|----------|----------|-------------|
| MECE 388 | Automatic Control System + Lab. | 2 | 2 | 3 | 5 |
| MECE 215 | Fundamentals of Thermal Systems | 3 | 0 | 3 | 4 |
| MECE 308 | Mechatronics System Design I | 3 | 0 | 3 | 5 |
| MECE 302 | Sensors and Measurement +Lab. | 3 | 2 | 4 | 7 |
| MECE 336 | Microprocessors I + Lab. | 3 | 2 | 4 | 5 |
| MECE 240 | Electromechanical Energy Conversion | 3 | 0 | 3 | 4 |
| Total 6 courses | | 17 | 6 | 20 | 30 |

SENIOR YEAR

7. Semester

| Course Code | Course Title | T | R | C | ECTS |
|-----------------|--|----|---|----|------|
| IE 345 | Engineering Economy | 3 | 0 | 3 | 4 |
| MECE 309 | Mechatronics System Design II | 3 | 0 | 3 | 5 |
| Elective | Technical Elective I* | 3 | 0 | 3 | 5 |
| MECE 401 | Introduction to Robotics | 3 | 2 | 4 | 5 |
| MECE 407 | Innovative Engineering Analysis and Design | 1 | 2 | 2 | 3 |
| HIST 201 | Principles of Kemal Atatürk | 2 | 0 | 2 | 3 |
| MECE 300 | Summer Training II | 0 | 0 | 0 | 5 |
| Total 7 courses | | 15 | 4 | 17 | 30 |

8. Semester

| Course Code | Course Title | T | R | C | ECTS |
|-----------------|--|----|---|----|------|
| HIST 202 | Principles of Kemal Atatürk II | 2 | 0 | 2 | 3 |
| Elective | Technical Elective II* | 3 | 0 | 3 | 5 |
| Elective | Technical Elective III* | 3 | 0 | 3 | 5 |
| Elective | Technical Elective IV* | 3 | 0 | 3 | 5 |
| Elective | Technical Elective V* | 3 | 0 | 3 | 5 |
| IE 446 | Project Engineering Management | 3 | 0 | 3 | 4 |
| MECE 408 | Innovative Engineering Design and Implementation | 1 | 2 | 2 | 3 |
| Total 7 courses | | 18 | 2 | 19 | 30 |

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|--|---------------------|------------|-----------|------------|------------|
| | TOTAL CREDIT | 146 | 42 | 167 | 240 |
|--|---------------------|------------|-----------|------------|------------|

* In Technical Elective courses, in addition to Mechatronics Engineering (MECE) courses, there are also some must and elective courses of Mechanical Engineering (ME), Electronics and Communication Engineering (ECE), Computer Engineering (CENG), Electrical and Electronics Engineering (EE), Materials Science and Engineering (MSE) and Industrial Engineering (IE). But at least 3 of the 5 Technical Elective courses must be taken from Mechatronics Engineering (MECE) or Mechanical Engineering (ME) or Electronics and Communication Engineering (ECE) or Electrical and Electronics Engineering Departments (EE) subjected to approval of the department.

Rev. date: September,