**METALLURGY AND MATERİAL ENGINEERING (EN) BA PROGRAM**

**COURSES**

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| **Course Code** | **Course Name** | **Credit** | **ECTS** |
| **Academic Year I** | **Fall** |  |  |
| MME101 | Physics-1 | 3.00 | 5 |
| MME102 | Mathematics-1 | 3.00 | 5 |
| MME103 | General Chemistry-1 | 3.00 | 5 |
| MME104 | Advanced English-1 | 3.00 | 4 |
| MME105 | Atatürk’s Principles & Revolution History-1 | 2.00 | 2 |
| MME106 | Introduction to Metallurgical and Materials Engineering | 2.00 | 4 |
| MME107 | Turkish Literature-1 | 2.00 | 2 |
| MME108 | Introduction to Computer & Information Systems | 2.00 | 3 |
| **Elective Course** | | | |
| AKT101 | Academical Turkish-1 | 2.00 | 2 |
| **Academic Year I** | **Spring** |  |  |
| MME121 | Physics-2 | 3.00 | 5 |
| MME122 | Mathematics-2 | 3.00 | 5 |
| MME123 | General Chemistry-2 | 3.00 | 5 |
| MME124 | Advanced English-2 | 3.00 | 4 |
| MME125 | Turkish Litterature-2 | 2.00 | 2 |
| MME126 | Technical Drawing | 3.00 | 4 |
| MME127 | Probability and Statistics | 3.00 | 3 |
| MME128 | Atatürk’s Principles & Revolution History -2 | 2.00 | 2 |
| MME121 | [Foreign Language I (English)](https://bilgipaketi.erbakan.edu.tr/ders/7502238) | 3.00 | 5 |
| **Elective Course** | | | |
| AKT102 | Academical Turkish-2 | 2.00 | 2 |
| **Academic Year II** | **Fall** |  |  |
| MME201 | Materials Science-1 | 3.00 | 4 |
| MME202 | Extractive Metallurgy | 3.00 | 4 |
| MME203 | Statics and Strength of Materials | 3.00 | 4 |
| MME204 | Thermodynamics of Materials-1 | 3.00 | 5 |
| MME205 | Differential Equations | 4.00 | 5 |
| MME206 | Academic Oral Presentation Skills | 3.00 | 4 |
| **Elective Course** | | | |
| MME207 | Failure Analysis | 3.00 | 4 |
| MME208 | Mineral Processing | 3.00 | 4 |
| **Academic Year II** | **Spring** |  |  |
| MME221 | Thermodynamics of Materials-2 | 3.00 | 5 |
| MME222 | Computer Modelling and Design | 3.00 | 4 |
| MME223 | Mechanical Metallurgy | 3.00 | 5 |
| MME224 | Materials Science-2 | 4.00 | 5 |
| MME225 | Fundamentals of Manufacturing Technologies | 3.00 | 5 |
| MME226 | Summer Practice-1 | 0.00 | 2 |
| **Technical Elective Course-2** | | | |
| MME227 | X-Ray Diffraction Technique | 3.00 | 4 |
| MME228 | Metallurgical Pretreatments | 3.00 | 4 |
| **Academic Year III** | **Fall** |  |  |
| MME301 | Phase Equilibria | 3.00 | 4 |
| MME302 | Transport Phenomena | 3.00 | 4 |
| MME303 | Materials Characterization | 3.00 | 4 |
| MME304 | Chemical Metallurgy | 3.00 | 4 |
| MME305 | Metallic Materials and Metallography | 3.00 | 4 |
| MME306 | Polymer Materials | 3.00 | 4 |
| MME307 | Materials Processing Laboratuary | 3.00 | 4 |
| **Technical Elective Course-3** | | | |
| MME308 | Electrical, Optical, and Magnetic Properties of Materials | 3.00 | 3 |
| MME309 | Hydrometallurgy | 3.00 | 3 |
| **Academic Year III** | **Spring** |  |  |
| MME321 | Iron and Steelmaking | 3.00 | 4 |
| MME322 | Ceramic Materials | 3.00 | 4 |
| MME323 | Kinetics | 3.00 | 4 |
| MME324 | Casting and Solidification | 3.00 | 4 |
| MME325 | Physical Metallurgy | 3.00 | 4 |
| MME326 | Metallurgical Processing Laboratuary | 3.00 | 4 |
| MME307 | Materials Processing Laboratuary | 3.00 | 4 |
| **Technical Elective Course-4** | | | |
| MME328 | Energy Materials | 3.00 | 4 |
| MME329 | Powder Metallurgy | 3.00 | 4 |
| **Academic Year IV** | **Fall** |  |  |
| MME401 | Principles of Corrosion and Corrosion Protection | 4.00 | 5 |
| MME402 | Non-ferrous Metal Metallurgy / | 4.00 | 5 |
| MME403 | Occuppational Health and Safety-1 | 1.00 | 2 |
| MME404 | Materials Engineering Design-1 | 4.00 | 7 |
| **Technical Elective Course-5** | | | |
| MME405 | Electrometallurgy | 3.00 | 4 |
| MME406 | Non-Destructive Testing of Materials | 3.00 | 4 |
| MME407 | Metal Casting Techniques | 3.00 | 4 |
| MME408 | Composite Materials | 3.00 | 4 |
| MME409 | Computational Materials Science | 3.00 | 4 |
| **Free Elective Course-1** | | | |
| MME410 | Philosophy of Science | 2.00 | 3 |
| MME411 | Business Law | 2.00 | 3 |
| MMM412 | Volunteering Studies | 2.00 | 4 |
| **Academic Year IV** | **Spring** |  |  |
| MME421 | Enterpreneurship | 1.00 | 2 |
| MME422 | Occupational Health and Safety-2 | 1.00 | 2 |
| MME423 | Materials Engineering Design-2 | 4.00 | 7 |
| **Technical Elective Course-6** | | | |
| MME424 | Surface Treatments | 3.00 | 4 |
| MME425 | Welding Technology | 3.00 | 4 |
| MME426 | Nanomaterials | 3.00 | 4 |
| MME427 | Advanced Ceramics | 3.00 | 4 |
| MME428 | Biomaterials | 3.00 | 4 |
| MME429 | Thin Films Fabrication and Characterization | 3.00 | 4 |
| **Free Elective Course-2** | | | |
| MME430 | Business Life and Quality Control | 2.00 | 3 |
| MME431 | Introduction to Research | 2.00 | 3 |