**ESOGU MECHANICAL ENGINEERING DEPARTMENT**

**COURSE INFORMATION FORM**

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| **Course Name** | **Course Code** |
| Energy Economics |

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| 151818694 |  |

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| **Semester** | **Number of Course Hours per Week** | **ECTS** |
| **Theory** | **Practice** |
| 8 | 3 | 0 | 5 |

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| **Course Category (Credit)** |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

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| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Undergraduate | Compulsory |

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| **Prerequisite(s) if any** | - |
| **Objectives of the Course** | To teach the developments in the energy sector |
| **Short Course Content** | Understanding the dynamics of energy needs |

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| **Learning Outcomes of the Course** | **Contributed PO(s)**  | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | They can analyze issues related to energy economy. |  | 1 | A |
| **2** |  |  |  |  |
| **3** |  |  |  |  |
| **4** |  |  |  |  |
| **5** |  |  |  |  |
| **6** |  |  |  |  |
| **7** |  |  |  |  |
| **8** |  |  |  |  |

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| **Main Textbook** | Enerji Ekonomisi-[Burcu Kılınç Savrul](https://www.surelikitap.com/tr/ara/kitap?ya=732)-Dora Yayınevi |
| **Supporting References** | Enerji Ekonomisine Giriş- [Levent Aydın](https://www.dr.com.tr/Yazar/levent-aydin/s%3D324692)-Seçkin Yayıncılık |
| **Necessary Course Material** |  |

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| **Course Schedule** |
| **1** | Energy Perspective, Date and Change of Location |
| **2** | Energy as an Economic Sector |
| **3** | Sustainable Energy Development |
| **4** | Energy Policies and Geopolitics |
| **5** | Energy Sources and Conversion |
| **6** | Introduction to Fossil Fuels and Coal |
| **7** | Crude Oil and Natural Gas |
| **8** | Mid-Term Exam |
| **9** | Lithosphere and Biosphere Originated Renewable Energy Sources: Geothermal and Biofuel |
| **10** | Atmospheric Renewable Energy Sources: Solar and Wind |
| **11** | Hydrospheric Renewable Energy Sources: Hydroelectric |
| **12** | Alternative Renewable Energy Sources: Gas Hydrates and Hydrogen, and Nuclear |
| **13** | Energy and Economic Policies |
| **14** | Energy and Economic Policies |
| **15** | Energy and Economic Policies |
| **16,17** | Final Exam |

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| **Calculation of Course Workload** |
| **Activities** | **Number** | **Time (Hour)** | **Total Workload (Hour)** |
| Course Time (number of course hours per week) | 14 | 3 | 42 |
| Classroom Studying Time (review, reinforcing, prestudy,….) | 14 | 3 | 42 |
| Homework | 1 | 1 | 1 |
| Quiz Exam | 0 | 0 | 0 |
| Studying for Quiz Exam | 0 | 0 | 0 |
| Oral exam  | 0 | 0 | 0 |
| Studying for Oral Exam  | 0 | 0 | 0 |
| Report (Preparation and presentation time included) | 1 | 1 | 1 |
| Project (Preparation and presentation time included) | 0 | 0 | 0 |
| Presentation (Preparation time included) | 1 | 1 | 1 |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 0 | 0 | 0 |
| Studying for Mid-Term Exam | 0 | 0 | 0 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | **108** |
|  | **Total workload / 30** | **3.6** |
|  | **Course ECTS Credit** | **4** |

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| **Evaluation** |
| **Activity Type** | **%** |
| Mid-term | 0 |
| Quiz | 0 |
| Homework | 40 |
| Bir öğe seçin. |  |
| Bir öğe seçin. |  |
| **Final Exam** | 60 |
| **Total** | 100 |

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| **RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO)** (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low) |
| **NO** | **PROGRAM OUTCOME** | **Contribution** |
| **1** | Sufficient knowledge of engineering subjects related with mathematics, science and Mechanical engineering; an ability to apply theoretical and practical knowledge on solving and modeling of Mechanical engineering problems. | 3 |
| **2** | Ability to determine, define, formulate and solve complex Mechanical engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods. | 2 |
| **3** | Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economic and political problems; for that purpose an ability to apply modern design methods. | 1 |
| **4** | Ability to develop, select and use modern methods and tools required for Mechanical engineering applications; ability to effective use of information technologies. | 2 |
| **5** | In order to investigate Mechanical engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results. | 1 |
| **6** | Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence. | 3 |
| **7** | Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language. | 2 |
| **8** | Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement. | 3 |
| **9** | Understanding of professional and ethical issues and taking responsibility | 2 |
| **10** | Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development | 2 |
| **11** | Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions. | 2 |
| **12** |  |  |

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| **LECTUTER(S)** |
| **Prepared by** | Assos. Prof. Dr. Özge YETİK |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**06.06.2024