**ESOGU MECHANICAL ENGINEERING DEPARTMENT**

**COURSE INFORMATION FORM**

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| **Course Name** | **Course Code** |
| FIRE SECURITY | 151818693 |

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

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

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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** | Combustion, fire definitions, fire types and fire load determination, knowledge about extinguishing agents, pressure zoning, active and passive fire prevention systems. |
| **Short Course Content** | Combustion and fire concepts. Fire triangle. Fire types and fire development. Fire load. Extinguishing effects and fire extinguishing agents. Structural fire safety. Flammability classes of materials. Structure of smoke. Smoke control methods. Stair pressurization. Fixed pipe hose systems. Hydrant system. Automatic sprinkler systems. Fire pumps and pressure zoning. Foam extinguishing systems. Gas extinguishing systems |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Definition of fire, information about fire types | 3, 6, 11 | 1 | 1 |
| **2** | Learning about structural fire safety | 3, 6, 11 | 1, 10 | 1 |
| **3** | Learning about extinguishing agents | 3, 6, 11 | 1, 10 | 1 |
| **4** | Learning detection warning systems | 3, 6, 11 | 1, 10 | 1 |
| **5** | Learning the flammability classes of materials | 3, 6, 11 | 1, 10 | 1 |
| **6** | Knowing the structure of smoke and smoke control methods | 3, 6, 11 | 1, 10 | 1 |
| **7** | Learning stair pressurization technique | 3, 6, 11 | 1, 10 | 1 |
| **8** | Learning about extinguishing systems | 3, 6, 11 | 1, 10 | 1 |
| **9** | Learning pressure zoning techniques in high-rise buildings | 3, 6, 11 | 1, 10 | 1 |
| **10** | Awareness about the importance of the exterior | 3, 6, 11 | 1, 10 | 1 |

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| **Main Textbook** | Yangın Söndürme Tesisatı Proje Hazırlama Esasları, MMO yayını |
| **Supporting References** | **Prof. Dr.Abdurrahman Kılıç,** [**https://yangin.org/**](https://yangin.org/) |
| **Necessary Course Material** |  |

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| **Course Schedule** | |
| **1** | Extinguishing Effect and Substances |
| **2** | Structural Fire Safety |
| **3** | Detection Warning Systems |
| **4** | Water Extinguishing Pressure Losses |
| **5** | Fire Cabinet Hydrants |
| **6** | Sprinkler Systems |
| **7** | Fire Pumps |
| **8** | Mid-Term Exam |
| **9** | Pressure zoning |
| **10** | Foam Extinguishing Systems |
| **11** | Gas Extinguishing Systems |
| **12** | Clean Gas Extinguishing Systems |
| **13** | Smoke Control |
| **14** | Pressure zoning in high-rise buildings |
| **15** | The importance of the exterior in fire |
| **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 | 0 | 0 | 0 |
| 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 | 10 | 10 |
| Project (Preparation and presentation time included) | 1 | 15 | 15 |
| Presentation (Preparation time included) | 1 | 10 | 10 |
| Mid-Term Exam | 0 | 0 | 0 |
| Studying for Mid-Term Exam | 0 | 0 | 0 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 15 | 15 |
|  | **Total workload** | | **135** |
|  | **Total workload / 30** | | **4,5** |
|  | **Course ECTS Credit** | | **5** |

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| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term |  |
| Quiz |  |
| Homework |  |
| Presentation | 40 |
| 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 own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems. | 5 |
| **2** | Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods  Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design method  Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design method  Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design method | 3 |
| **3** | Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods | 5 |
| **4** | Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies  In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results. | 3 |
| **5** | In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.  Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence | 1 |
| **6** | Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence | 5 |
| **7** | Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language  Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement  Awareness of life-long learning; ability to reach information; follow developments in sc | 1 |
| **8** | Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement | 5 |
| **9** | Understanding of professional and ethical issues and taking responsibility | 3 |
| **10** | Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development | 5 |
| **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 | 5 |

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| **LECTUTER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Nihal Uğurlubilek |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**06.06.2024