**ESOGU MECHANICAL ENGINEERING DEPARTMENT**

**COURSE INFORMATION FORM**

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| **Course Name** | **Course Code** |
| BUILDING INSTALLATION | 151818686 |

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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 | Elective |

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| **Prerequisite(s) if any** |  |
| **Objectives of the Course** | Introduction and design of building clean cold/hot water installation and its components, introduction and design of building waste water installation, plumbing in high-rise buildings, plumbing pipes. |
| **Short Course Content** | Principles and practices of clean hot/cold water and waste water installations applied in buildings, their design principles, construction rules of the installation, device selection, plumbing in high-rise buildings. |

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| **Learning Outcomes of the Course** | **Contributed PO(s)**  | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Learning about clean cold water installation | 3, 6, 11 | 1 | 1 |
| **2** | Learning about clean hot water installation | 3, 6, 11 | 1, 10 | 1 |
| **3** | Obtaining information about wastewater installation | 3, 6, 11 | 1, 10 | 1 |
| **4** | Planning and layout of plumbing, obtaining information about sanitary equipment | 3, 6, 11 | 1, 10 | 1 |
| **5** | Acquiring information about plumbing in high-rise buildings | 3, 6, 11 | 1, 10 | 1 |
| **6** | Obtaining information about clean water purification | 3, 6, 11 | 1, 10 | 1 |
| **7** | Clean cold water installation project design | 3, 6, 11 | 1, 10 | 1 |
| **8** | Clean hot water installation project design | 3, 6, 11 | 1, 10 | 1 |

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| **Main Textbook** | “SIHHİ TESİSAT” ISISAN Çalışmaları No.272, 2001  |
| **Supporting References** | Sıhhi Tesisat Proje Hazırlama Esasları, MMO/260/8. |
| **Necessary Course Material** |  |

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| **Course Schedule** |
| **1** | Clean cold water installation |
| **2** | Clean cold water pipe diameter calculation and critical line determination according to the loading unit method |
| **3** | Clean cold water installation project design |
| **4** | Clean hot water installation, pipe diameters, boiler capacity calculation |
| **5** | Clean water purification |
| **6** | Selection of hydrophores and calculation methods |
| **7** | Clean water installation pipes and fixtures |
| **8** | Mid-Term Exam |
| **9** | Waste water installation, determination of pipe diameters, siphons |
| **10** | Plumbing planning, layout, sanitary equipment |
| **11** | Ventilation techniques in waste water installations |
| **12** | Waste water installation project design |
| **13** | Plumbing in high-rise buildings, pressure zoning techniques |
| **14** | Energy efficiency in plumbing |
| **15** | Problem solution |
| **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