**ESOGU AERONAUTICAL ENGINEERING DEPARTMENT**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| AERONAUTICAL ENGINEERING LABORATORY |  |

|  |  |  |
| --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | **ECTS** |
| **Theory** | **Practice** |
| 8 | 0 | 2 | 2 |

|  |
| --- |
| **Course Category (Credit)** |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 2 |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| English | Undergraduate | Compulsory |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** |  |
| **Objectives of the Course** | Students learn the various practical application examples of aeronautical engineering.  |
| **Short Course Content** | Aviation materials characterization tests, aviation electronic system tests, flight dynamics studies, flight control systems |

|  |  |  |  |
| --- | --- | --- | --- |
| **Learning Outcomes of the Course** | **Contributed PO(s)**  | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Understands the microstructure of aircraft materials | 1-11 | 3 | I |
| **2** | Knows how to measure the mechanical properties of aircraft materials | 1-11 | 3 | I |
| **3** | Gains knowledge about aircraft avionics systems | 1-11 | 3 | I |
| **4** | Recognizes flight control systems | 1-11 | 3 | I |
| **5** | Comprehends the fundamentals of aerodynamics | 1-11 | 3 | I |
| **6** |  |  |  |  |
| **7** |  |  |  |  |
| **8** |  |  |  |  |

|  |  |
| --- | --- |
| **Main Textbook** | Mechanics of Aeronautical Solids, Materials and Structures, Christophe Bouvet  |
| **Supporting References** | Fundamentals of Aerospace Engineering, Manuel Soler |
| **Necessary Course Material** | Tensile test machine, hardness tester, microhardness tester, impact tester, metallographic sample preparation devices, optical microscope, oscilloscope, simulator |

|  |
| --- |
| **Course Schedule** |
| **1** | Aircraft Systems 1 |
| **2** | Aircraft Systems 2 |
| **3** | Aircraft Systems 3 |
| **4** | Aircraft Systems 4 |
| **5** | Aircraft Systems 5 |
| **6** | Aircraft Systems 6 |
| **7** | Aircraft Systems 7 |
| **8** | Mid-Term Exam |
| **9** | Aircraft Systems 8 |
| **10** | Aircraft Systems 9 |
| **11** | Aircraft Systems 10 |
| **12** | Aircraft Systems 11 |
| **13** | Aircraft Systems 12 |
| **14** | Aircraft Systems 13 |
| **15** | Aircraft Systems 14 |
| **16,17** | Final Exam |

|  |
| --- |
| **Calculation of Course Workload** |
| **Activities** | **Number** | **Time (Hour)** | **Total Workload (Hour)** |
| Course Time (number of course hours per week) | 14 | 2 | 28 |
| Classroom Studying Time (review, reinforcing, prestudy,….) | 1 | 2 | 2 |
| Homework | 1 | 10 | 10 |
| Quiz Exam |  |  |  |
| Studying for Quiz Exam |  |  |  |
| Oral exam  |  |  |  |
| Studying for Oral Exam  |  |  |  |
| Report (Preparation and presentation time included) | 14 | 1 | 14 |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 2 | 2 |
| Studying for Mid-Term Exam | 1 | 12 | 12 |
| Final Exam | 1 | 2 | 2 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | **80** |
|  | **Total workload / 30** | **2.66** |
|  | **Course ECTS Credit** | **2** |

|  |
| --- |
| **Evaluation** |
| **Activity Type** | **%** |
| Mid-term |  |
| Quiz |  |
| Report | 50 |
| Bir öğe seçin. |  |
| Bir öğe seçin. |  |
| **Final Exam** | 50 |
| **Total** | 100 |

|  |
| --- |
| **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. | 5 |
| **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. | 3 |
| **4** | Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies. | 4 |
| **5** | In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results. | 5 |
| **6** | Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence. | 2 |
| **7** | Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language. | 3 |
| **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. | 3 |
| **12** |  |  |

|  |
| --- |
| **LECTUTER(S)** |
| **Prepared by** | Assist Prof. Dr. S. Fehmi DİLTEMİZ  | Assist. Prof. Dr.Zafer ÖZNALBANT |  |  |
| **Signature(s)** | A blue line drawing of a person's signature  Description automatically generated |  |  |  |

**Date:**06.06.2024