**ESOGU AERONAUTICAL ENGINEERING DEPARTMENT**

**COURSE INFORMATION FORM**

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| **Course Name** | **Course Code** |
| INTRODUCTION TO AERONAUTICS |  |

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| **Semester** | **Number of Course Hours per Week** | **ECTS** |
| **Theory** | **Practice** |
| 1 | 2 | 0 | 2 |

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| **Course Category (Credit)** |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
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| **Course Language** | **Course Level** | **Course Type** |
| English | Undergraduate | Compulsory |

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| **Prerequisite(s) if any** |  |
| **Objectives of the Course** | Basic knowledge of aviation/aeronautics history, aircraft types and characteristics, structural components of aircraft, aircraft control and control surfaces, atmosphere models, aerostatics and aerodynamics (basic level). |
| **Short Course Content** | The course offered within the scope of the undergraduate education activities under the Department of Aeronautical Engineering of ESOGU will be an introductory course for the students who are just starting the undergraduate level. |

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| **Learning Outcomes of the Course** | **Contributed PO(s)**  | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To understand the outlines of International and Turkish Aviation History. | 1, 2, 3, 4, 5, 6, 8 | 1, 5, 9, 10, 11 | A, D, E, G, J, K |
| **2** | Understanding the basic atmospheric model. | 1, 2, 3, 4, 5, 6, 8 | 1, 5, 9, 10, 11 | A, D, E, G, J, K |
| **3** | Learning aircraft types. | 1, 2, 3, 4, 5, 6, 8 | 1, 5, 9, 10, 11 | A, D, E, G, J, K |
| **4** | Examining aircraft structural elements (wing, fuselage, tail...) and learning their purposes. | 1, 2, 3, 4, 5, 6, 8 | 1, 5, 9, 10, 11 | A, D, E, G, J, K |
| **5** | Gaining information about basic aircraft design processes. | 1, 2, 3, 4, 5, 6, 8 | 1, 5, 9, 10, 11 | A, D, E, G, J, K |
| **6** | Understanding aircraft control and control surfaces. | 1, 2, 3, 4, 5, 6, 8 | 1, 5, 9, 10, 11 | A, D, E, G, J, K |
| **7** |  |  |  |  |
| **8** |  |  |  |  |

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| **Main Textbook** | Uçuşa Başlangıç (Introduction To Flight), John D. Anderson, Jr., (Çev: Adil Yükselen), Nobel Akademik Yayıncılık, Nobel Akademik Yayıncılık |
| **Supporting References** | Yechout, T. R., & Morris, S. L. (2003). Introduction to aircraft flight mechanics: Performance, static stability, dynamic stability, and classical feedback control. Reston, VA: American Institute of Aeronautics and Astronautics. |
| **Necessary Course Material** |  |

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| **Course Schedule** |
| **1** | Introduction to engineering and ethics |
| **2** | Overview of aeronautics and aviation, brief aviation/aeronautics history |
| **3** | Atmosphere models  |
| **4** | Aircraft classification (Aviation Museum) |
| **5** | Airplane structural elements (Aviation Museum) |
| **6** | Flight Instruments |
| **7** | Propulsion systems |
| **8** | Mid-Term Exam |
| **9** | Industry visits – I |
| **10** | Industry visits – II |
| **11** | Industry visits – III |
| **12** | Current issues in aerodynamics and CFD analysis |
| **13** | Current issues in aviation materials |
| **14** | Current issues in super alloys |
| **15** | Current issues about stability and control |
| **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 | 2 | 28 |
| Classroom Studying Time (review, reinforcing, prestudy,….) |  |  |  |
| Homework | 6 | 3 | 18 |
| Quiz Exam |  |  |  |
| Studying for Quiz Exam |  |  |  |
| Oral exam  |  |  |  |
| Studying for Oral Exam  |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
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| Mid-Term Exam | 1 | 2 | 2 |
| Studying for Mid-Term Exam | 1 | 5 | 5 |
| Final Exam | 1 | 2 | 2 |
| Studying for Final Exam | 1 | 5 | 5 |
|  | **Total workload** | **60** |
|  | **Total workload / 30** | **2,0** |
|  | **Course ECTS Credit** | **2** |

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| **Evaluation** |
| **Activity Type** | **%** |
| Mid-term | 40 |
| Quiz | - |
| Homework | - |
| Report | - |
|   | 60 |
| **Final Exam** | 100 |
| **Total** | 40 |

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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. | 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. | 5 |
| **4** | Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies. | 5 |
| **5** | In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results. | 3 |
| **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. | 5 |
| **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  | 3 |
| **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** | Asst. Prof. Zafer ÖZNALBANT |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:** 10.07.2024