**ESOGU AERONAUTICAL DEPARTMENT**

**COURSE INFORMATION FORM**

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| **Course Name** | **Course Code** |
| Aerospace Materials |  |

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| **Semester** | **Number of Course Hours per Week** | | **ECTS** |
| **Theory** | **Practice** |
| 4 | 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** |
| English | Undergraduate | Elective |

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| **Prerequisite(s) if any** | No |
| **Objectives of the Course** | The aim of the course is to teach the materials used in the sector and changing over time in parallel with technological developments and the technologies depending on this change. |
| **Short Course Content** | To know all the materials, sector terminology and technologies used especially in the aviation industry. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Introduction of newly developed materials | All | 1,7 | A, D |
| **2** | These materials "Aerospace Industry Practices" | All | 1, 7 | A,D |
| **3** | recognize the technological developments reflected in the civilian sector through these applications | All | 1,7 | A, D |
| **4** | As an engineer, to be able to design new designs in this light of development and to be able to perceive existing developments | All | 1, 7 | A,D |
| **5** | To have knowledge about the industrial facilities in the sector and to have information about their possibilities so that they can establish relations between the topics seen and learned and the topics in the sector | All | 1,7 | A, D |
| **6** |  |  |  |  |
| **7** |  |  |  |  |
| **8** |  |  |  |  |

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| **Main Textbook** | Lecture Notes, Composite Materials for Aircraft Applications (Deo R.B.), A dan Z ye Dünya Uçakları ve Helikopterleri (Kuşhan M.C.) |
| **Supporting References** |  |
| **Necessary Course Material** |  |

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| **Course Schedule** | |
| **1** | Aerospace Industry Material and Classification in General |
| **2** | Metals as Aerospace Industry Materials |
| **3** | Composites as Aerospace Industry Materials |
| **4** | Composites as Aerospace Industry Ceramics |
| **5** | Composites as Aerospace Industry Plastics |
| **6** | RAM |
| **7** | Vehicle Armour |
| **8** | Mid-Term Exam |
| **9** | Airctaft Ballistic Protection Products |
| **10** | Pyrotechnic |
| **11** | Fuselage of aircraft and helicopters |
| **12** | Fuselage of tank |
| **13** | Fuselage of ship and submarine |
| **14** | Airctaft Ballistic Protection Products |
| **15** | Pyrotechnic |
| **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) | 3 | 1,75 | 1,5 |
| Classroom Studying Time (review, reinforcing, prestudy,….) | --- | --- | --- |
| Homework | 2 | 140 | 140 |
| Quiz Exam | --- | --- | --- |
| Studying for Quiz Exam | --- | --- | --- |
| Oral exam | 1 | 0,25 | 0,25 |
| Studying for Oral Exam | --- | --- | --- |
| Report (Preparation and presentation time included) | 1 | 15 | 15 |
| Project (Preparation and presentation time included) | --- | --- | --- |
| Presentation (Preparation time included) | 1 | 0,25 | 0,25 |
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| Mid-Term Exam | 1 | 0,75 | 0,75 |
| Studying for Mid-Term Exam | --- | --- | --- |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | --- | --- | --- |
|  | **Total workload** | | **158,75** |
|  | **Total workload / 30** | | **5,29** |
|  | **Course ECTS Credit** | | **5** |

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| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 10 |
| Quiz | 60 |
| Homework |  |
| Bir öğe seçin. |  |
| Bir öğe seçin. |  |
| **Final Exam** | 10 |
| **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 mathematics, science and engineering; Ability to apply theoretical and applied knowledge in these fields to model and solve engineering problems | 5 |
| **2** | Ability to identify, define, formulate and solve complex engineering problems in engineering and related fields by selecting and applying appropriate analysis and modeling methods. | 5 |
| **3** | The ability to design a complex system, device or product in line with a determined goal, under realistic constraints and conditions, by applying modern design methods. | 5 |
| **4** | Ability to develop, select and use modern techniques and tools necessary for engineering applications and to effectively benefit from information technologies. | 5 |
| **5** | Ability to design experiments, conduct experiments, collect data, analyze and interpret results for the study of engineering problems. | 5 |
| **6** | Ability to work individually, within and across disciplines as a team | 5 |
| **7** | Ability to communicate effectively in Turkish verbally and in writing and the ability to use/improve foreign language knowledge. | 5 |
| **8** | Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology and constantly renew oneself | 5 |
| **9** | Awareness of professional and ethical responsibility | 5 |
| **10** | Knowledge of project management and business practices such as risk management and change management; awareness about entrepreneurship, innovation and sustainable development | 5 |
| **11** | Information about the effects of engineering practices on health, environment and safety at universal and social dimensions; Awareness of national and international legal regulations and standards and the legal consequences of engineering solutions | 5 |
| **12** |  |  |

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| **LECTUTER(S)** | | | | |
| **Prepared by** | Prof. Melih Cemal Kushan (PhD) |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**06.06.2024