**ESOGU**

**ENVIRONMENTAL CONSERVATION AND PROTECTION PROGRAM**

**COURSE INFORMATION PACKAGE – COURSE CATALOGUE**

|  |  |  |  |  |  |  |  |  |
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| **1st Year** | | | | | | | | |
| Course Code | Course name | T | P | | C | | ECTS | |
| **Fall Semester (1st Semester)** | | | | | | | | |
| 241011004 | Turkish Language I | 2 | | 0 | | 2 | | 2 |
| 241011001 | History of the Turkish Revolution & Principles of Atatürk I | 2 | | 0 | | 0 | | 2 |
| 241011005 | English I | 3 | | 0 | | 3 | | 2 |
| 241211020 | Chemistry I | 3 | | 0 | | 3 | | 5 |
| 241211030 | Ecology | 2 | | 0 | | 2 | | 4 |
| 241211022 | Use of Basic Information Technologies | 1 | | 2 | | 2 | | 3 |
| 241211023 | Laboratory and Measurement Techniques | 3 | | 0 | | 3 | | 5 |
| 241211024 | Environmental and Public Health | 2 | | 0 | | 2 | | 4 |
| SSI | Social Elective Course I | 2 | | 0 | | 2 | | 3 |
| Total : | | 20 | | 2 | | 19 | | 30 |
| **Spring Semester (2nd Semester)** | | | | | | | | |
| 241212001 | Turkish Language II | 2 | | 0 | | 2 | | 2 |
| 241212002 | History of the Turkish Revolution & Principles of Atatürk II | 2 | | 0 | | 0 | | 2 |
| 241212027 | English II | 3 | | 0 | | 3 | | 2 |
| 241212020 | Chemistry II | 3 | | 0 | | 3 | | 5 |
| 241212021 | Environmental Microbiology | 3 | | 0 | | 3 | | 4 |
| 241212007 | Urban Development and Environmental Planning | 2 | | 0 | | 2 | | 2 |
| 241212028 | Environmental Laboratory I | 0 | | 4 | | 2 | | 5 |
| 241212017 | Instrumental Analysis Techiques | 2 | | 2 | | 3 | | 5 |
| SSII | Social Elective Course II | 2 | | 0 | | 2 | | 3 |
| Total : | | **19** | | **6** | | **20** | | **30** |

***T:****Theoretic,* ***U:*** *Practice / Laboratory,* ***C:*** *Credit.*

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| **SOCIAL ELECTIVE COURSE I (SEI)** | |  | **SOCIAL ELECTIVE COURSE II (SEII)** | |
| 241211031 | First Aid |  | 241212029 | Occupational Helath and Safety |
| 241211032 | Consumerist Society and Environment |  | 241212030 | Communication and Employment Skills |
| 241211033 | Green Deal, Sustainable Development and Bioeconomy |  | 241212031 | Professional Ethics |
|  |  |  | 241212032 | Entrepreneurship and Environment |

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**COURSE INFORMATION PACKAGE – COURSE CATALOGUE**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2nd Year** | | | | | | | | | | |
| Course Code | Course Name | T | | | P | C | | | ECTS | |
| **Fall Semester (3rd Semester)** | | | | | | | | | | |
| 241213001 | Environmental Laboratory II | 0 | | 4 | | | 2 | | | 5 |
| TEI | Technical Elective Course I | 3 | | 0 | | | 3 | | | 5 |
| TEI | Technical Elective Course I | 3 | | 0 | | | 3 | | | 5 |
| TEI | Technical Elective Course I | 3 | | 0 | | | 3 | | | 5 |
| TEI | Technical Elective Course I | 3 | | 0 | | | 3 | | | 5 |
| TEI | Technical Elective Course I | 3 | | 0 | | | 3 | | | 5 |
| Total : | | 15 | | 4 | | | 17 | | | 30 |
| **Spring Semester (4th Semester)** | | | | | | | | | | |
| 241214020 | Project | | 2 | | 4 | | | 4 | | 5 |
| 241214017 | Internship | | 0 | | 2 | | | 0 | | 5 |
| TEII | Technical Elective Course II | | 3 | | 0 | | | 3 | | 5 |
| TEII | Technical Elective Course II | | 3 | | 0 | | | 3 | | 5 |
| TEII | Technical Elective Course II | | 3 | | 0 | | | 3 | | 5 |
| TEII | Technical Elective Course II | | 3 | | 0 | | | 3 | | 5 |
| Bahar Dönemi Toplamı : | | | 14 | | 6 | | | 16 | | 30 |

***T:****Theoretic,* ***U:*** *Practice / Laboratory,* ***C:*** *Credit.*

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| **TECHNICAL ELECTIVE COURSE I (TEI)** | |  | **TECHNICAL ELECTIVE COURSE II (TEII)** | |
| 241213014 | Conservation Biology |  | 241214021 | Limnology |
| 241213015 | Nanotechnology and Environment |  | 241214022 | Biological Control |
| 241213016 | National Parks and Protected Areas Management |  | 241214023 | Evaluation of Water Legislation |
| 241213017 | Solid Waste Management |  | 241214024 | Environment and Food |
| 241213018 | Hava Kirliliği ve Kontrolü |  | 241214025 | Noise Pollution and Control |
| 241213019 | Environmental Impact Assessment (EIA) |  | 241214026 | Water Pollution and Control |
| 241213020 | Water Quality and Control |  | 241214027 | Environmental Technologies |
| 241213021 | Soil Pollution and Control |  | 241214028 | Environment Law |
| 241213022 | Quality and Environmental Management Systems |  | 241214029 | Biosafety and Environment |
| 241213023 | Renewable Energy Sources |  |  |  |
| 241213024 | Biotechnology and Environment |  |  |  |

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**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| **Course Name** | **Course Code** |
| Turkish Language I | 241011004 |

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

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

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| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | Informing students about the current state of development and the richness of Turkish language, bring awareness of a national language, literally to know about the subtleties about Turkish and be able to use them in their daily lives to ensure. |
| **Short Course Content** | Definition of language, language families on the world and Turkish’s place among the world languages, the historical development of Turkish written language, phonetic word recognition events in Turkish. Gain the ability to write proper composition. |

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| **Course Outcomes** | | **Contributed program outcomes** | **Education Methods\*** | **Assessment Methods \*\*** |
| **1** | Students express language families on the world and Turkish’s place among the world languages. | 4 | 1 | A |
| **2** | Defines the rules of Turkish. | 4 | 1 | A |
| **3** | Recognize the sound events. | 4 | 1 | A |
| **4** | Apply the spelling rules | 4 | 1 | A |
| **5** | Prepare written and oral composition. | 4 | 1 | A |
| **6** | Use Turkish correctly. | 4 | 1 | A |

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| **Main Textbook** | 1. Kültür, M. E., “Üniversiteler İçin Türk Dili”, Bayrak Yayınları, İstanbul, 1997.  2. “Türk Dil Yazım Kılavuzu”, TDK Yayınları, 24. baskı, Ankara, 2005. |
| **Supporting References** | 1. Kaplan, M., “Kültür ve Dil”, 8. baskı, ,Dergah Yayınları, İstanbul, 1993.  2. Fuat, M., “Dil Üstüne”, Adam Yayınları, İstanbul, 2001.  3. Ercilasun, A. B., “Başlangıçtan Yirminci Yüzyıla Türk Dili Tarihi”, Akçağ Yayınları, 1. baskı, Ankara, 2004.  4. Aksan, D., “Türkçe’nin Gücü”, Bilgi Yayınevi, 4. baskı, Ankara, 1997.  5. Karamanlıoğlu, A., “Türk Dili”, Degah Yayınları, 3. baskı, İstanbul, 1984.  6. Anday, M. C., “Dilimiz Üstüne Konuşmalar”, YKY, İstanbul, 1996. |
| **Necessary Course Material** | Computer |

|  |  |
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| **Course Schedule** | |
| **1** | Definition and Features of Language |
| **2** | Languages on the world and Turkish’s place among the world languages from origin and structure sides |
| **3** | Importance of Language for culture and nationality, Language Policies |
| **4** | Speech Language and Specifications (Polish, Accent, Oral) |
| **5** | Writing Language and Specifications |
| **6** | Classification of Sounds |
| **7** | Sound Changes, Sound Events |
| **8** | Mid-Term Exam |
| **9** | Rules of Writing |
| **10** | Rules of Writing |
| **11** | Rules of Writing |
| **12** | Rules of Writing |
| **13** | Written Composition Exercises |
| **14** | Studies of planned essay writing |
| **15** | Studies of planned essay writing |
| **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,….) | 5 | 2 | 10 |
| Homework |  |  |  |
| 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) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 2 | 5 | 10 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 2 | 5 | 10 |
|  | **Total workload** | | **60** |
|  | **Total workload / 30** | | **2** |
|  | **Course ECTS Credit** | | **2** |

|  |  |
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| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 40 |
|  |  |
|  |  |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 4 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** |  |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| History of Turkish Revolution and Principles of Kemal Atatürk: I | 241211002 |

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

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

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To provide historical awareness and to ensure that the fundamental principles on which our Republic is based are necessary for individual and social freedom. |
| **Short Course Content** | The Last Periods of the Ottoman Empire, Intellectual Movements to Save the Empire and the Historical Environment in which Mustafa Kemal Raised. World War I and the World Gaining a New Appearance. |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Becomes aware of history and its importance | 4, 11 | 1 | A |
| **2** | Explains the environment before the establishment of the Republic of Türkiye | 4, 11 | 1 | A |
| **3** | Realizes that the fundamental principles on which our Republic is based are necessary for individual and social freedom | 4, 11 | 1 | A |

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| **Main Textbook** | M. Derviş Kılıçkaya (ed.), “Atatürk ve Türkiye Cumhuriyeti Tarihi”, Ankara, 2005. |
| **Supporting References** | Atatürk, “Nutuk I-II”, Türk Tarih Kurumu Yayını, Ankara. |
| **Necessary Course Material** | Computer |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | Concepts that have an important place in the course content: Principle, Revolution, Evolution, Reform, Revolution, Coup, Reorganization; French Revolution and its Effect on the Turkish Revolution |
| **2** | The Ottoman Empire and the Causes of the Turkish Revolution |
| **3** | The Ottoman Empire and the Causes of the Turkish Revolution |
| **4** | Weakening of the Ottoman State; Internal and External Causes of Decline |
| **5** | Renovation Efforts in the Ottoman Empire, Pre-Tanzimat Reform Movements, Tanzimat and Reform Edicts; Eastern Question |
| **6** | XIX. Political Situation of the Ottoman Empire in the 19th Century; Basic Features of the Century; Straits Problem and Independence Movements in the Ottoman Empire |
| **7** | I. Constitutional Monarchy, Declaration of the Constitution and the Birth of the Opposition; II. Declaration of the Constitutional Monarchy |
| **8** | Mid-Term Exam |
| **9** | Foreign Events (Tripoli War, Balkan Wars); |
| **10** | II. Intellectual Movements in the Constitutional Monarchy Period: Westernism, Turkism, Islamism, Social Movement, Socialism (Midterm exam) |
| **11** | World War I: Causes and Beginning of the War |
| **12** | Participation of the Ottoman Empire in the War and the Fronts |
| **13** | Secret Treaties Concerning the Sharing of the Territories of the Ottoman Empire, Wilson Principles |
| **14** | Armistice of Mudros and Reactions to the Armistice |
| **15** | Armistice of Mudros and Reactions to the Armistice |
| **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,….) | 14 | 1 | 14 |
| Homework |  |  |  |
| 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) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 2 | 2 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 2 | 2 |
|  | **Total workload** | | **48** |
|  | **Total workload / 30** | | **1,6** |
|  | **Course ECTS Credit** | | **2** |

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| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 40 |
|  |  |
|  |  |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 3 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. | 3 |

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| **LECTURER(S)** | | | | |
| **Prepared by** |  |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

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**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| English I | 241011005 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 1 | 3 | 0 | 3 | 2 |

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

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| English | Associate degree | Compulsory |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | Basic tenses, pronouns, prepositions, reading and listening parts and vocabulary of English. |
| **Short Course Content** | The aim of the course is to teach basic grammar, speaking, writing, reading and listening knowledge of English. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Outcomes** | | **Contributed program outcomes** | **Education Methods\*** | **Assessment Methods \*\*** |
| **1** | Use the basic grammar rules | 4, 11 | 1 | A |
| **2** | Understanding and making dialogues | 4, 11 | 1 | A |
| **3** | Explains an English text on its subject. | 4, 11 | 1 | A |
| **4** | Communicates in written and verbal English. | 4, 11 | 1 | A |

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| --- | --- |
| **Main Textbook** | 1.English For Life, Elementary Student’s Book, Oxford University Press  2.English For Life, Elementary Workbook, Oxford Universty Press  3.English For Life, Pre-intermediate Student’s Book, Oxford University Press  4.English For Life, Pre-intermediate Workbook, Oxford University Press |
| **Supporting References** | 1.Murphy, R., 2004, English Grammar in Use, Cambridge University Press,  2.Dictionary of Contemprary English, Longman.  3.Start Up Comprehensive English Practice, 2007, Nüans Publishing, |
| **Necessary Course Material** | Computer |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | Greetings, pronouns, prepositions |
| **2** | Reading Exercise |
| **3** | Listening Exercise |
| **4** | Grammar (simple present tense, present continuous tense) |
| **5** | Reading Exercise |
| **6** | Listening Exercise |
| **7** | Greetings, pronouns, prepositions |
| **8** | Mid-Term Exam |
| **9** | Grammar (The simple past tense, regular and irregular verbs) |
| **10** | Reading Exercise |
| **11** | Listening Exercise |
| **12** | Grammar (The present perfect tense, future tense) |
| **13** | Reading Exercise |
| **14** | Listening Exercise |
| **15** | Listening Exercise |
| **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,….) | 5 | 1 | 5 |
| Homework |  |  |  |
| 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) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 5 | 5 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 5 | 5 |
|  | **Total workload** | | **59** |
|  | **Total workload / 30** | | **1,96** |
|  | **Course ECTS Credit** | | **2** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 40 |
|  |  |
|  |  |
|  |  |
| **Final Exam** | 60 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 4 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. | 3 |

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| **LECTURER(S)** | | | | |
| **Prepared by** |  |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| **Course Name** | **Course Code** |
| Chemistry I | 241211020 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 1 | 3 | 0 | 3 | 5 |

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| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
| 3 |  |  |  |  |

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

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| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The aim of this course is to build chemical knowledge so that students can make quantitative and qualitative inquiries in the field of chemistry, to develop critical thinking and problem-solving skills, and to introduce chemical problems to students. |
| **Short Course Content** | Structure of the atom, modern atomic theory, arrangement of electrons, periodic table, mole concept, types of chemical reactions, stoichiometry, mass balances, interactions between chemical species. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Describe the properties of matter. | 1,2,11 | 1, 2, 5 | A, B, D |
| **2** | To understand atomic theories. | 1,2,11 | 1, 2, 5 | A, B, D |
| **3** | Classifying the elements. | 1,2,11 | 1, 2, 5 | A, B, D |
| **4** | Recognizing chemical reactions | 1,2,11 | 1, 2, 5 | A, B, D |
| **5** | Being able to establish mass balances and make calculations on chemical reactions | 1,2,11 | 1, 2, 5 | A, B, D |
| **6** | Understand interactions between chemical species | 1,2,11 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Genel Kimya, Anadolu Üniversitesi, AÖF ders kitabı, Eskişehir. |
| **Supporting References** | 1.Petrucci, H., Harwood, W. S., Herring, F. G., “Genel Kimya: İlkeler ve Modern Uygulamalar” (I. ve II. Cilt), Çeviri Editörleri: Uyar. T., Aksoy, S., Palme Yayıncılık, Ankara, 2002.  2.Mortimer, C. E., “Modern Üniversite Kimyası” (I. ve II. Cilt) , Çeviri, Çağlayan Kitabevi, İstanbul, 1988. |
| **Necessary Course Material** | Projection, computer. |

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| **Course Schedule** | |
| **1** | Basic concepts |
| **2** | Unit Conversion |
| **3** | Atomic Theories |
| **4** | Modern Atomic Theory, Quantum Numbers and Orbitals |
| **5** | Electron Configuration |
| **6** | Electron Configuration |
| **7** | Periodic System |
| **8** | Mid-Term Exam |
| **9** | Classification of Matterial |
| **10** | Mole Concept |
| **11** | Types of Chemical Reactions |
| **12** | Stoichiometry in Chemical Reactions |
| **13** | Mass Balances in Chemical Reactions |
| **14** | Chemical Interspecies Interactions (Strong Interactions) |
| **15** | Chemical Interspecies Interactions (Weak Interactions) |
| **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,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 30 | 30 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 5 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 3 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. | 3 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Naile KARAKEHYA |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Ecology | 241211030 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 1 | 2 | 0 | 2 | 4 |

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

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| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

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| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To understand the basic principles of ecology as relation to the environmental issues and to provide protective solution methods or system for ecosystem sustainability. |
| **Short Course Content** | Description of ecology and biology, basic terms in ecology, abiotic factors and their effects on organisms, biotic factors and their effects on organisms, population and its structural properties, population dynamics, community and its properties, ecosystem and its properties, model approaches to ecosystems, major ecosystems in the world and their properties, distribution of major ecosystems in the world, Ecological footprint and the relationship between the environmental technology and ecosystems. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To the explain basic concepts of ecology, | 1, 2, 3, 5, 7, 10 | 1, 2, 5 | A |
| **2** | To understand abiotic factors and their effects on organisms, | 1, 2, 3, 5, 7, 10 | 1, 2, 5 | A |
| **3** | To understand biotic factors and their effects on organisms, | 1, 2, 3, 5, 7, 10 | 1, 2, 5 | A |
| **4** | To provide information about ecosystems and their properties, | 1, 2, 3, 5, 7, 10 | 1, 2, 5 | A |
| **5** | To discuss current environmental issues in an ecological context. | 1, 2, 3, 5, 7, 10 | 1, 2, 5 | A |

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| **Main Textbook** | Ecology Lecture Notes |
| **Supporting References** | 1)Gökmen, S., Genel Ekoloji (2011), Nobel Akademik Yayıncılık  2)Kocataş, A. ,Ekoloji ve Çevre Biyolojisi (2008), Ege Üni.Basımevi.  3)Odum, E.P. and Barrett, W.G. (Çeviri:Işık, K) (2008), Ekolojinin Temel İlkeleri, Palme Yayıncılık,  4)Muslu, Y. Ekoloji ve Çevre Sorunları (2000), Aktif Yayınevi  5) Wetzel R. G., Çevri Editörü: Mehmet Borga Ergönül; Limnoloji Göl ve Nehir Ekosistemleri (2017) , Nobel Kitabevi |
| **Necessary Course Material** | Projection, computer |

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| **Course Schedule** | |
| **1** | Description of ecology, environment and biology, historical development of ecology and environment science |
| **2** | Basic terms in ecology |
| **3** | Ecosystem, features of ecosystem |
| **4** | Abiotic and biotic factors, their effects on organisms |
| **5** | Food chain and sharing of energy in the food chain |
| **6** | Biogeochemical cycle |
| **7** | Biogeochemical cycle |
| **8** | Mid-Term Exam |
| **9** | Population ecology |
| **10** | Community ecology |
| **11** | Major ecosystems in the world- Terrestrial ecosystems |
| **12** | Major ecosystems in the world- Freshwater ecosytems |
| **13** | Major ecosystems in the world- Marine ecosytems |
| **14** | The relationship between the Environmental Technology and Ecosystems |
| **15** | Population ecology |
| **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,….) | 14 | 2 | 28 |
| Homework |  |  |  |
| 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) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 28 | 28 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 28 | 28 |
|  | **Total workload** | | **111** |
|  | **Total workload / 30** | | **3,7** |
|  | **Course ECTS Credit** | | **4** |

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| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 50 |
| Quiz |  |
| Homework |  |
|  |  |
| **Final Exam** | 50 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 5 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 3 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 4 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 3 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Doç. Dr. Esengül KÖSE |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Use of Basic Information Technologies | 241211022 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 1 | 1 | 2 | 2 | 3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

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| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

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| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | In parallel with the rapidly changing and developing technology, it is to ensure that the most up-to-date operating systems, office software programs, internet and applications are transferred to students. |
| **Short Course Content** | Computer hardware, basic informatics concepts, software and operating systems, internet and internet-based applications, use of office programs. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To have theoretical and practical knowledge about information technologies | 1, 2, 3, 4, 6 | 1, 2, 6 | A, D |
| **2** | Being able to use MS Word program | 1, 2, 3, 4, 6 | 1, 2, 6 | A, D |
| **3** | Being able to use MS Excel program | 1, 2, 3, 4, 6 | 1, 2, 6 | A, D |
| **4** | Being able to use MS Powerpoint program | 1, 2, 3, 4, 6 | 1, 2, 6 | A, D |
| **5** | Having knowledge about internet applications | 1, 2, 3, 4, 6 | 1, 2, 6 | A, D |

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| **Main Textbook** | Sugözü, İ.H., “Temel Bilgi Teknolojileri”, Nobel Yayıncılık, 2012. |
| **Supporting References** | Akgöbek, Ö., “Temel Bilgi Teknolojileri”, Beta Yayınevi, 611s., 2004. |
| **Necessary Course Material** | Projection, computer, Office programs. |

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| **Course Schedule** | |
| **1** | Computer Hardware |
| **2** | Softwares and Operating Systems |
| **3** | MS Word |
| **4** | MS Word |
| **5** | MS Excel |
| **6** | MS Excel |
| **7** | MS Excel |
| **8** | Mid-Term Exam |
| **9** | MS Powerpoint |
| **10** | MS Powerpoint |
| **11** | Using Internet |
| **12** | Using Internet |
| **13** | Preparing presentation |
| **14** | Preparing presentation |
| **15** | Preparing presentation |
| **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,….) |  |  |  |
| Homework | 14 | 1 | 14 |
| 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) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 15 | 15 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 15 | 15 |
|  | **Total workload** | | **88** |
|  | **Total workload / 30** | | **2,9** |
|  | **Course ECTS Credit** | | **3** |

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| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Homework | 20 |
|  |  |
|  |  |
| **Final Exam** | 50 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 3 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 3 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 3 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 3 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Dr. Öğr. Üyesi Burcu SEZGİN |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Laboratory and Measurement Techniques | 241211023 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 1 | 3 | 0 | 3 | 5 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
| 3 |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To understand the basic principles of working in laboratory and to acquire information about the equipments used in laboratory. |
| **Short Course Content** | Laboratory safety, general laboratory rules, laboratory equipments, measurement systems and units, unit operations in laboratory, operations before analysis, analysis techniques, separation and purification operations, operations after analysis. |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To know laboratory rules and regulations | 1, 2, 3, 6, 7, 9, 11 | 1, 2, 5 | A, B, D |
| **2** | To recognize basic laboratory equipment and instrumental analysis apparatus | 1, 2, 3, 6, 7, 9, 11 | 1, 2, 5 | A, B, D |
| **3** | To understand the principles of several laboratories | 1, 2, 3, 6, 7, 9, 11 | 1, 2, 5 | A, B, D |
| **4** | To have information about sampling | 1, 2, 3, 6, 7, 9, 11 | 1, 2, 5 | A, B, D |
| **5** | To understand the basic operations in laboratory | 1, 2, 3, 6, 7, 9, 11 | 1, 2, 5 | A, B, D |
| **6** | To be able to evaluate the analysis results | 1, 2, 3, 6, 7, 9, 11 | 1, 2, 5 | A, B, D |

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| --- | --- |
| **Main Textbook** | Laboratuvar Teknikleri, S.S.Evrensel, Nobel Yayıncılık. |
| **Supporting References** | Laboratuvar Güvenliği, E. Canel, M. Canel, Gazi Kitabevi. |
| **Necessary Course Material** | Projection, computer, basic laboratory equipments |

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| **Course Schedule** | |
| **1** | Laboratory safety |
| **2** | General laboratory rules |
| **3** | Laboratory equipments |
| **4** | Laboratory equipments |
| **5** | Measurement systems and units |
| **6** | Unit operations in laboratory |
| **7** | Unit operations in laboratory |
| **8** | Mid-Term Exam |
| **9** | Operations before analysis |
| **10** | Analysis techniques |
| **11** | Analysis techniques |
| **12** | Separation and purification operations |
| **13** | Separation and purification operations |
| **14** | Operations after analysis |
| **15** | Operations after analysis |
| **16,17** | Final Exam |

|  |  |  |  |
| --- | --- | --- | --- |
| **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,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 30 | 30 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 5 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 5 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 4 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 5 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 4 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 4 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. | 2 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Dr. Öğr. Üyesi Burcu SEZGİN |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Environmental and Public Health | 241211024 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 1 | 2 | 0 | 2 | 4 |

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

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To learn the environmental pollution effects on environmental and public health. To have knowledge about water contamination, water quality control, environmental effect of industries and work of public health protection. |
| **Short Course Content** | Basic health concepts, environmental disease concept and toxicology, concepts of etiology and epidemiology, formation and contamination of diseases and immunization, effects of air pollution on health, effects of water pollution on health, effects of soil pollution on health, effects of noise pollution on health, effects of radioactive pollution on health, effects of food pollution on health, environmental pollution and cancer, elimination of pollution effects. |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To have knowledge about basic health concepts | 1, 5, 6, 7, 9, 11 | 1, 2, 5 | A, B, D |
| **2** | To have knowledge about environmental diseases | 1, 2, 3, 4, 5, 6, 7, 9, 10, 11 | 1, 2, 5 | A, B, D |
| **3** | To have knowledge about the health effects of various types of pollution | 1, 2, 3, 4, 5, 6, 7, 9, 10, 11 | 1, 2, 5 | A, B, D |

|  |  |
| --- | --- |
| **Main Textbook** | Çevre Mühendisliği ve Halk Sağlığı, Güler, Ç., Yazıt Yayıncılık |
| **Supporting References** | 1. Genel Çevre Sağlığı Bilgisi, Çobanoğlu, Z., Hatipoğlu Basım Yayın.  2. Çevre Kirliliği ve Kontrolü, Çınar, Ö., Nobel Yayın Dağıtım. |
| **Necessary Course Material** | Projection, computer |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | Relation of environment and health |
| **2** | Basic health concepts |
| **3** | Environmental disease concept and toxicology |
| **4** | Concepts of etiology and epidemiology |
| **5** | Formation and contamination of diseases and immunization |
| **6** | Effects of air pollution on health |
| **7** | Effects of water pollution on health |
| **8** | Mid-Term Exam |
| **9** | Effects of soil pollution on health |
| **10** | Effects of noise pollution on health |
| **11** | Effects of radioactive pollution on health |
| **12** | Effects of food pollution on health |
| **13** | Environmental pollution and cancer |
| **14** | Elimination of pollution effects |
| **15** | Elimination of pollution effects |
| **16,17** | Final Exam |

|  |  |  |  |
| --- | --- | --- | --- |
| **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,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 10 | 20 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **116** |
|  | **Total workload / 30** | | **3,86** |
|  | **Course ECTS Credit** | | **4** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 5 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 3 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 4 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 3 |
| **5** | Acquires sensitivity to global and local environmental problems. | 5 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 3 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 4 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 4 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains the necessity and awareness of lifelong learning. | 4 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Dr. Öğr. Üyesi Burcu SEZGİN |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| First Aid | 241211031 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 1 | 2 | 0 | 2 | 3 |

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

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The main aim of the course is to be able to help to people in the situations needing first aid to save the life or lessen the injuries. |
| **Short Course Content** | Introduction, definition of first aid, aims and rules of first aid, transportation of sick and injured, first aid in bleeding, first aid in burns, first aid in frostbite, first aid in broken bones, dislocation and strains, cardio-pulmonary resuscitation, first aid for poisoning, first aid for animal bites, epilepsy, infectious diseases, and other first aid practices. |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | An ability to, transportation of sick and injured | 7, 9, 11 | 1, 2, 5, 6, 8 | A, B, C |
| **2** | An ability to, first aid in bleeding | 7, 9, 11 | 1, 2, 5, 6, 8 | A, B, C |
| **3** | An ability to, first aid in injured | 7, 9, 11 | 1, 2, 5, 6, 8 | A, B, C |
| **4** | An ability to, cardio-pulmonary resuscitation | 7, 9, 11 | 1, 2, 5, 6, 8 | A, B, C |
| **5** | An ability to, first aid in burns | 7, 9, 11 | 1, 2, 5, 6, 8 | A, B, C |
| **6** | An ability to, first aid in broken bones | 7, 9, 11 | 1, 2, 5, 6, 8 | A, B, C |
| **7** | An ability to, first aid in poisoning and epilepsy | 7, 9, 11 | 1, 2, 5, 6, 8 | A, B, C |

|  |  |
| --- | --- |
| **Main Textbook** | Güler Ç., Bilir N. (1994) Temel İlkyardım (C-D düzeyleri) T.C.Sağlık Bakanlığı Sağlık Projesi Genel Koordinatörlüğü Çevre Sağlığı Temel Kaynak Dizisi. Ankara: Aydoğdu Ofset |
| **Supporting References** | 1. Acil Tıp Derneği (1998). İlkyardım Temel Yaşam Desteği El Kitabı.İzmir: Halk Yaşam  2. Nasetti Limited. (1999). Hasta ve Yaralıların Acil Bakımı ve Nakledilmesi. Amerikan Ortopedik Cerrahlar Akademisi (3.baskı). İstanbul: Mısırlı Matbaası  3. Kolaç Z., Tülek A., Anık N.,Sezer Y. (2005). İlk Yardım. Eskişehir |
| **Necessary Course Material** | Projection, computer |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | Introduction, definition of first aid |
| **2** | Aims and rules of first aid |
| **3** | Transportation of sick and injured |
| **4** | First aid in bleeding |
| **5** | First aid in burns |
| **6** | First aid in frostbite |
| **7** | First aid in broken bones, dislocation and strains |
| **8** | Mid-Term Exam |
| **9** | Cardio-pulmonary resuscitation |
| **10** | Cardio-pulmonary resuscitation |
| **11** | First aid for poisoning |
| **12** | First aid in convulsion and epilepsy |
| **13** | Other first aid practices |
| **14** | Other first aid practices |
| **15** | Other first aid practices |
| **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,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 1 | 1 | 1 |
| Studying for Quiz Exam | 1 | 10 | 10 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 15 | 15 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **86** |
|  | **Total workload / 30** | | **2,86** |
|  | **Course ECTS Credit** | | **3** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 10 |
| Homework | 10 |
|  |  |
| **Final Exam** | 50 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values ​​and social security rights in issues related to the Environmental Protection and Control Program. | 4 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 5 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. | 5 |

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| **LECTURER(S)** | | | | |
| **Prepared by** |  |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**08.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Consumerist Society and Environment | 241211032 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 1 | 2 | 0 | 2 | 3 |

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

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | Awareness about the dangers of consumerist culture and its damages to environment. Increasing environmental awareness and environmental consciousness. |
| **Short Course Content** | The pre-modern period, the modern period and the post-modern era, main features of the consumerist society, consumption for enjoy and consumption of images, basic consumer behavior and mass media, developing production techniques and waste, damages of consumerist society to the environment, recommendations to prevent the damages of consumerist society to the environment |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Learning conscious consumption, | 4, 5, 7, 10, 11 | 1, 2, 5 | A, B, D |
| **2** | learning the relationship between the consuming and the environment, | 4, 5, 7, 10, 11 | 1, 2, 5 | A, B, D |
| **3** | raise awareness on environmental issues | 4, 5, 7, 10, 11 | 1, 2, 5 | A, B, D |

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| --- | --- |
| **Main Textbook** | Baudrillard, J. (2012) Tüketim Toplumu, Ayrıntı yayınları |
| **Supporting References** | Ergen, A., (2016) Sürdürülebilir Tüketim Gönüllü Sadelik ve Maddi Değerler, Beta Yayınları |
| **Necessary Course Material** | Projection, computer |

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| --- | --- |
| **Course Schedule** | |
| **1** | Introduction |
| **2** | The pre-modern period |
| **3** | The modern period and the post-modern period |
| **4** | The emergence of the consumerist society |
| **5** | The main features of the consumerist society |
| **6** | Voluntary simple life |
| **7** | Sustainable consumption and production |
| **8** | Mid-Term Exam |
| **9** | Basic consumer behavior and mass media |
| **10** | Consumption for pleasure or social status and image consumption, extravagance |
| **11** | Developing production techniques and waste, disposable products |
| **12** | Vicious cycle of growth |
| **13** | Damages of consumerist society to the environment |
| **14** | Recommendations to prevent the damages of consumerist society to the environment |
| **15** | Cittaslow |
| **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,….) | 14 | 1 | 14 |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 1 | 1 | 1 |
| Studying for Quiz Exam | 1 | 10 | 10 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 15 | 15 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **111** |
|  | **Total workload / 30** | | **3,7** |
|  | **Course ECTS Credit** | | **4** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 10 |
| Homework | 10 |
|  |  |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 3 |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 5 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains the necessity and awareness of lifelong learning. | 4 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Doç. Dr. Esengül KÖSE |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Green Deal, Sustainable Development and Bioeconomy | 241211033 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 1 | 2 | 0 | 2 | 3 |

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | It aims to provide research and teaching experience on the EU Green Deal and sustainable development. |
| **Short Course Content** | Within the scope of this course, topics related to the EU Green Deal, Turkey's adaptation process to the agreement, sustainable development and bioeconomy concepts and processes will be included. |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Evaluating new strategies in various sectors with the introduction of the regulations specified in the European Union Green Deal | 3, 5, 6, 9,10 | 1, 2, 5, 15 | A, B, D, G |
| **2** | Understanding the adaptation process to the EU Green Deal | 3, 5, 6, 9,10 | 1, 2, 5, 15 | A, B, D, G |
| **3** | Being able to understand the ways to be followed in preparation for and during the adaptation process and what needs to be done by the sector against pending risks. | 3, 5, 6, 9,10 | 1, 2, 5, 15 | A, B, D, G |
| **4** | Understanding the importance of sustainable development in the adaptation process to the EU Green Deal | 3, 5, 6, 9,10 | 1, 2, 5, 15 | A, B, D, G |
| **5** | Understanding the importance of bioeconomy in the adaptation process to the EU Green Deal | 3, 5, 6, 9,10 | 1, 2, 5, 15 | A, B, D, G |
| **6** | Understanding the application areas of biology in industry | 3, 5, 6, 9,10 | 1, 2, 5, 15 | A, B, D, G |
| **7** | To be able to perceive the areas where biology will contribute to the development of the country with the developing technology and to grasp the predictions that will enable biology to be more effective for the benefit of society. | 3, 5, 6, 9,10 | 1, 2, 5, 15 | A, B, D, G |
| **8** | Ability to perceive biological developments that exist in industry and are used in possible work areas | 3, 5, 6, 9,10 | 1, 2, 5, 15 | A, B, D, G |

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| --- | --- |
| **Main Textbook** | AB Yeşil Mutabakatı, Yeşil Mutabakat Eylem Planı,  Sürdürülebilir Kalkınma ders notları,  Biyogüvenlik ve Biyoteknoloji, Prof.Dr. R. Şeminur Topal, 2002 |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | EU Green Deal |
| **2** | Action Plan for the Green Deal |
| **3** | Environmental Problems and Their Causes, environmental problems management |
| **4** | Responsible consumption and production, sustainability in industry, innovation and clean production |
| **5** | Accessible and clean energy, sustainability and climate change |
| **6** | Interaction process of Development and Environment, sustainable development approach, Sustainable cities |
| **7** | The relationship between the concept of sustainable development and bioeconomy |
| **8** | Ara Sınavlar |
| **9** | Bioeconomy, definition and historical process |
| **10** | Transgenic creatures and biosecurity |
| **11** | GM microorganisms and their application areas |
| **12** | Microbial productions, bioeconomic approach |
| **13** | Conventional techniques and bioeconomic approaches in the biotechnology industry |
| **14** | International and national legal regulations and practices |
| **15** | Commercial biotechnological products |
| **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 | 1 | 10 | 10 |
| Quiz Exam | 1 | 1 | 1 |
| Studying for Quiz Exam | 1 | 10 | 10 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 15 | 15 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **86** |
|  | **Total workload / 30** | | **2,86** |
|  | **Course ECTS Credit** | | **3** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 10 |
| Homework | 10 |
|  |  |
| **Final Exam** | 50 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 4 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 5 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 5 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 5 |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar Aytar Çelik |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**08.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Turkish Language II | 241212001 |

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

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To show the richness of Turkish by informing students about the development and current situation of Turkish and to raise awareness of the national language. |
| **Short Course Content** | Words in terms of structure, word groups, nouns, adjectives, pronouns, adverbs, prepositions, verbs, sentences, types of written compositions, types of oral compositions, speaking practices, planned writing practices, text analysis. |

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| **Course Outcomes** | | **Contributed program outcomes** | **Education Methods\*** | **Assessment Methods \*\*** |
| **1** | Defines the rules of Turkish. |  | 1 | A |
| **2** | Defines and classifies word groups in terms of structure. |  | 1 | A |
| **3** | Analyzes sentence structure. |  | 1 | A |
| **4** | Creates written and oral composition. |  | 1 | A |
| **5** | Use Turkish correctly. |  | 1 | A |

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| **Main Textbook** | 1. Kültür, M. E., “Üniversiteler İçin Türk Dili”, Bayrak Yayınları, İstanbul, 1997.  2.Yavuz, K., Yetiş, K., Birinci, N., 1999, Üniversite Türk Dili ve Kompozisyon Dersleri, Bayrak Yayınları, İstanbul. |
| **Supporting References** | 1. Kaplan, M., “Kültür ve Dil”, 8. baskı, ,Dergah Yayınları, İstanbul, 1993.  2. Fuat, M., “Dil Üstüne”, Adam Yayınları, İstanbul, 2001.  3. Aksan, D., “Türkçe’nin Gücü”, Bilgi Yayınevi, 4. baskı, Ankara, 1997. |
| **Necessary Course Material** | Computer |

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| **Course Schedule** | |
| **1** | Words in Terms of Structure; Word Groups |
| **2** | Noun |
| **3** | Adjective |
| **4** | Pronoun |
| **5** | Adverb |
| **6** | Preposition, Conjunction, İnterjection |
| **7** | Verb |
| **8** | Mid-Term Exam |
| **9** | Sentence, Elements of the Sentence |
| **10** | Sentence, Elements of the Sentence |
| **11** | Written Composition Types |
| **12** | Types of Verbal Composition |
| **13** | Prepared Speaking Practice, Unprepared Speaking Practice |
| **14** | Text Analysis Studies |
| **15** | Text Analysis Studies |
| **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,….) | 5 | 2 | 10 |
| Homework |  |  |  |
| 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) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 2 | 5 | 10 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 2 | 5 | 10 |
|  | **Total workload** | | **60** |
|  | **Total workload / 30** | | **2** |
|  | **Course ECTS Credit** | | **2** |

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| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 40 |
|  |  |
|  |  |
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| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 3 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. | 3 |

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| **LECTURER(S)** | | | | |
| **Prepared by** |  |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| **Course Name** | **Course Code** |
| History of Turkish Revolution and Principles of Kemal Atatürk: II | 241212002 |

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

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

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| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

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| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To provide historical awareness and to ensure that the basic principles on which our Republic is based are necessary for individual and social freedom. |
| **Short Course Content** | The emergence of the Republic of Türkiye in historical context and the basic principles on which it is based.. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Becomes aware of history and its importance. | 4,11 | 1 | A |
| **2** | Explains the environment before the establishment of the Republic of Türkiye. | 4,11 | 1 | A |
| **3** | Realizes that the fundamental principles on which our Republic is based are necessary for individual and social freedom. | 4,11 | 1 | A |
| **4** | Explains the basic principles of the Republic of Türkiye. | 4,11 | 1 | A |

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| **Main Textbook** | M. Derviş Kılıçkaya (ed.), “Atatürk ve Türkiye Cumhuriyeti Tarihi”, Ankara, 2005. |
| **Supporting References** | Atatürk, “Nutuk I-II”, Türk Tarih Kurumu Yayını, Ankara. |
| **Necessary Course Material** | Computer |

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| **Course Schedule** | |
| **1** | Armistice of Mudros and Turkey during the Armistice Period, Istanbul after the Armistice, Patriotic Parties and Societies in Istanbul. |
| **2** | Parties and Institutions Against the War of Independence, Societies Established by Minorities, National Societies Established for the Purpose of Fighting the Enemy, Mustafa Kemal's Arrival in Istanbul and His Activities in Istanbul. |
| **3** | Sending Mustafa Kemal Pasha to Anatolia as an Army Inspector and Landing in Samsun on May 19, 1919, Greek Occupation of Izmir and Reactions, Kuvay-ı Milliye, Mustafa Kemal's Activities in Samsun and Its Surroundings. |
| **4** | Amasya Circular, Erzurum Congress. Balıkesir and Alaşehir Congresses and the Formation of the National Front Against the Greeks, Sivas Congress and its Results. |
| **5** | The Fall of Damat Ferit Pasha's Government, the Relations between the Ali Rıza Pasha Government and the Representative Committee and the Amasya Meetings, the Last Ottoman Parliament and the National Pact Decisions, the Opening of the Turkish Grand National Assembly. |
| **6** | The Structure of the Turkish Grand National Assembly, the Formation of the Turkish Grand National Assembly and its Handling of Management. Rebellions Supported by the Istanbul Government Against the Grand National Assembly of Turkey and its Government and the National Police Movement, the Greek Operation and the Signing of the Treaty of Sèvres. |
| **7** | Gediz Offensive and the Establishment of Regular Armies, Ankara-Moscow Relations and the Eastern Front. The First Battle of İnönü and Political Developments, “The Constitution of the Essential Organization”, London Conference, Treaty of Moscow. |
| **8** | Mid-Term Exam |
| **9** | II. Battles of İnönü and Its Political Effects, New Greek General Offensive, Mustafa Kemal's Election as Commander-in-Chief and Tekalif-i Milliye Decisions, Sakarya Square Battle. |
| **10** | Great Offensive Operation, Mudanya Armistice and Its Implementation, Lausanne Conference and Peace Treaty. (Midterm) |
| **11** | Turkish Domestic Policy during the Ataturk Era, Ankara Becoming the Capital, Proclamation of the Republic, Abolition of the Caliphate, Establishment of the Progressive Republican Party and Sheikh Sait Rebellion- Izmir Assassination Attempt, Establishment of the Free Republican Party and the Menemen Incident. |
| **12** | Foreign Policy of the Ataturk Era, Population Population Exchange Problem, Mosul Problem, Balkan Pact, Montreux Straits Convention, Sadabat Pact, Hatay Problem, Revolutionary Movements: Actions in the Fields of Law, Education, Culture, Economy and Social Affairs |
| **13** | Ataturk's Principles: Republicanism, Nationalism, Populism, Secularism, Statism, Revolutionism |
| **14** | Ataturk's Principles: Republicanism, Nationalism, Populism, Secularism, Statism, Revolutionism |
| **15** | Ataturk's Principles: Republicanism, Nationalism, Populism, Secularism, Statism, Revolutionism |
| **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,….) | 14 | 1 | 14 |
| Homework |  |  |  |
| 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) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 2 | 2 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 2 | 2 |
|  | **Total workload** | | **48** |
|  | **Total workload / 30** | | **1,6** |
|  | **Course ECTS Credit** | | **2** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 40 |
|  |  |
|  |  |
|  |  |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 3 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. | 3 |

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| **LECTURER(S)** | | | | |
| **Prepared by** |  |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| English II | 241212027 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 2 | 3 | 0 | 3 | 2 |

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

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| English | Associate degree | Compulsory |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The aim of the course is to teach basic grammar, speaking, writing, reading and listening knowledge of English. |
| **Short Course Content** | Reported speech, relative clauses, passive voice, conditionals, reading and listening parts and vocabulary of English. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Outcomes** | | **Contributed program outcomes** | **Education Methods\*** | **Assessment Methods \*\*** |
| **1** | The student becomes familiar with basic grammar rules in English. | 4, 11 | 1, 5, 11 | A |
| **2** | Analyzes English dialogues. | 4, 11 | 1, 4, 5, 11 | A |
| **3** | Understands and explains an English text at the level. | 4, 11 | 1, 4, 5, 11 | A |
| **4** | Communicates in written and spoken English. | 4, 11 | 1, 4, 5, 11 | A |

|  |  |
| --- | --- |
| **Main Textbook** | 1.English For Life, Elementary Student’s Book, Oxford University Press  2.English For Life, Elementary Workbook, Oxford Universty Press  3.English For Life, Pre-intermediate Student’s Book, Oxford University Press  4.English For Life, Pre-intermediate Workbook, Oxford University Press |
| **Supporting References** | 1.Murphy, R., 2004, English Grammar in Use, Cambridge University Press,  2.Dictionary of Contemprary English, Longman.  3.Start Up Comprehensive English Practice, 2007, Nüans Publishing, |
| **Necessary Course Material** | Computer |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | Grammar (reported speech) |
| **2** | Reading Exercise |
| **3** | Listening Exercise |
| **4** | Grammar (relative clauses) |
| **5** | Reading Exercise |
| **6** | Listening Exercise |
| **7** | Listening Exercise |
| **8** | Mid-Term Exam |
| **9** | Grammar (passive voice) |
| **10** | Reading Exercise |
| **11** | Listening Exercise |
| **12** | Grammar (conditionals) |
| **13** | Reading Exercise |
| **14** | Listening Exercise |
| **15** | Listening Exercise |
| **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,….) | 5 | 1 | 5 |
| Homework |  |  |  |
| 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) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 5 | 5 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 5 | 5 |
|  | **Total workload** | | **59** |
|  | **Total workload / 30** | | **1,96** |
|  | **Course ECTS Credit** | | **2** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 40 |
|  |  |
|  |  |
|  |  |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 4 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. | 3 |

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| **LECTURER(S)** | | | | |
| **Prepared by** |  |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Chemistry II | 241212020 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 2 | 3 | 0 | 3 | 5 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
| 3 |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The aim of this course is to build chemical knowledge so that students can make quantitative and qualitative inquiries in the field of chemistry, to develop critical thinking and problem-solving skills, and to introduce chemical problems to students. |
| **Short Course Content** | Aqueous solutions, solubility, concentration units, properties of gases, gas laws, gas mixtures, acids, bases, pH concept, phases, interfacial properties, colligative properties, chemical kinetics and chemical balance. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To understand the properties of solutions. | 1,2,11 | 1, 2, 5 | A, B, D |
| **2** | Making solubility and concentration calculations. | 1,2,11 | 1, 2, 5 | A, B, D |
| **3** | Solving problems related to gas laws and gas mixtures. | 1,2,11 | 1, 2, 5 | A, B, D |
| **4** | To have knowledge about surface and interface phenomena. | 1,2,11 | 1, 2, 5 | A, B, D |
| **5** | Learning the concepts of acid, base, pH and buffer. | 1,2,11 | 1, 2, 5 | A, B, D |
| **6** | To understand chemical equilibrium and kinetic problems. | 1,2,11 | 1, 2, 5 | A, B, D |

|  |  |
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| **Main Textbook** | Genel Kimya, Anadolu Üniversitesi, AÖF ders kitabı, Eskişehir. |
| **Supporting References** | 1.Petrucci, H., Harwood, W. S., Herring, F. G., “Genel Kimya: İlkeler ve Modern Uygulamalar” (I. ve II. Cilt), Çeviri Editörleri: Uyar. T., Aksoy, S., Palme Yayıncılık, Ankara, 2002.  2.Mortimer, C. E., “Modern Üniversite Kimyası” (I. ve II. Cilt) , Çeviri, Çağlayan Kitabevi, İstanbul, 1988. |
| **Necessary Course Material** | Projection, computer. |

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| --- | --- |
| **Course Schedule** | |
| **1** | Measurable Properties of Matter |
| **2** | Liquid Solutions |
| **3** | Concentration Units |
| **4** | Concentration and Solubility Calculations |
| **5** | Properties of Gases |
| **6** | Gas Laws |
| **7** | Gas Mixtures |
| **8** | Mid-Term Exam |
| **9** | Phase Transformations |
| **10** | Phase Diagrams |
| **11** | Surface and Interface Phenomena |
| **12** | Colligative Properties |
| **13** | Acids and Bases |
| **14** | Chemical Kinetics |
| **15** | Chemical Balance |
| **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,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 30 | 30 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 5 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 3 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. | 3 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Naile KARAKEHYA |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Environmental Microbiology | 241212021 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| Spring | 3 | 0 | 3 | 4 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
| 3 |  |  |  |  |

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

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To understand the basic principles of microbiology as relation to environmental issues and to provide protective solution methods or system |
| **Short Course Content** | The definition and principles of microbiology, metabolism, bacteria, viruses, protozoa, fungi, algae, soil microbiology, water microbiology, air microbiology, biochemical cycle and significance of microorganisms in environmental applications |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To describe microbiology | 2, 4, 6 | 1, 2, 5 | A, B, D |
| **2** | To explain basic terms of microbiology | 2, 4, 6 | 1, 2, 5 | A, B, D |
| **3** | To provide information about microorganisms | 2, 4, 6 | 1, 2, 5 | A, B, D |
| **4** | To understand the importance of microorganisms in environmental applications | 2, 4, 6 | 1, 2, 5 | A, B, D |
| **5** | To discuss current environmental issues in a microbiological context. | 2, 4, 6 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Örgev C., Environmental Microbiology (2010), Değişim Publications Güven, S. and Zorba, D. N. (2011) General Microbiology and Laboratory Guide |
| **Supporting References** | [Brock Biology of Microorganisms](https://www.odtuden.com.tr/brock-biology-of-microorganisms) |
| **Necessary Course Material** | Projection |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | Classification of organisms, cells, cell types and differences, organelles of the cell |
| **2** | Classification of organisms, cells, cell types and differences, organelles of the cell |
| **3** | The definition, history and principles of microbiology and working area microbiology working area |
| **4** | Microorganism concept |
| **5** | Metabolism of microorganisms |
| **6** | Metabolic diversity |
| **7** | Microscope concept |
| **8** | Mid-Term Exam |
| **9** | Culture media and techniques of microorganisms |
| **10** | Microbial growth |
| **11** | Control of microorganisms |
| **12** | The role of microorganisms in biogeochemical cycles |
| **13** | Biological treatment of wastewaters |
| **14** | Microbial treatment examples |
| **15** | Bioremediation and indicator microorganisms |
| **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 | 1 | 14 |
| Homework |  |  |  |
| 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) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 28 | 28 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 28 | 28 |
|  | **Total workload** | | **114** |
|  | **Total workload / 30** | | **3,8** |
|  | **Course ECTS Credit** | | **4** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 40 |
| Quiz |  |
| Homework |  |
|  |  |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 4 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 4 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar Aytar Çelik |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**06.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Urban Development and Environmental Planning | 241212007 |

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

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | This course aims to explain the methods of planning cities according to the needs of society, economic conditions, environmental rules, and aesthetic criteria, and to explain the importance of working to prevent environmental problems from occurring rather than taking measures to eliminate the effects of environmental issues after they happen in cities. |
| **Short Course Content** | City concept, urbanization, city planning, housing types, characteristics of urbanization in Turkey, unplanned urbanization, urban transportation, urban transformation, slow cities. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To recognize the basic elements of urbanism. | 5, 9, 10, 11 | 1, 2, 5 | A, B, D |
| **2** | To recognize the features and elements of a livable environment. | 5, 9, 10, 11 | 1, 2, 5 | A, B, D |
| **3** | To understand the interaction between urbanization and the environment. | 5, 9, 10, 11 | 1, 2, 5 | A, B, D |
| **4** | Discussing current environmental problems in terms of urbanism. | 5, 9, 10, 11 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | E.G. İsbir, B. Açma, Kentleşme ve Çevre Sorunları, Anadolu Üniversitesi AÖF Yayını, 2005. |
| **Supporting References** | 1. Keleş, R., Kentleşme Politikası (2000), İmge Kitabevi.  2. Suher, H.,Şehircilik (1996), İTÜ Mimarlık Fakültesi Yayını. |
| **Necessary Course Material** | Projection, computer. |

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| --- | --- |
| **Course Schedule** | |
| **1** | Course Introduction |
| **2** | City definition, historical development of urbanization |
| **3** | Sociological aspect of urbanization |
| **4** | Classical reasons for urbanization, urbanization in Turkey |
| **5** | Housing types and features, right to housing, housing conditions |
| **6** | Critical points in determining housing policies |
| **7** | Causes and consequences of unplanned urbanization, suggestions |
| **8** | Mid-Term Exam |
| **9** | Definition of metropolitan city in Turkey, metropolitan management |
| **10** | Metropolitan planning stages |
| **11** | Concepts of zoning and land arrangements (parcelling) |
| **12** | Urban transportation and its problems |
| **13** | Street furniture and vandalism |
| **14** | Sustainable environment and slow cities in environmental protection |
| **15** | Urban change/transformation |
| **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,….) | 14 | 1 | 14 |
| Homework |  |  |  |
| 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) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 2 | 2 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 2 | 2 |
|  | **Total workload** | | **48** |
|  | **Total workload / 30** | | **1,6** |
|  | **Course ECTS Credit** | | **2** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 40 |
|  |  |
|  |  |
|  |  |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 3 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 4 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains the necessity and awareness of lifelong learning. | 5 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Naile KARAKEHYA |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Environmental Laboratory I | 241212028 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 2 | 0 | 4 | 2 | 5 |

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

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The aim of this course is to learn laboratory rules, perform basic laboratory practices and instrumental analysis techniques. |
| **Short Course Content** | Solution preparation, separation of homogeneous and heterogeneous mixtures, volumetric analysis, gravimetric analysis, use of UV-vis spectrophotometer, dye adsorption from water. |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To understand basic laboratory skills such as weighing, volume measurement, and solution preparation. | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **2** | Understand basic separation processes | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **3** | Performing volumetric and gravimetric analyzes and analyzing the results | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **4** | Learning the UV vis spectrophotometer and understanding its working principles | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **5** | Making applications in wastewater treatment | 1,2,3,5,6 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | 1. Ü. R. Yaman, N. Kavas (2016) Laboratuvar Tekniği, Sidas Yayınları. 2. [M. Tayar](https://www.amazon.com.tr/s/ref=dp_byline_sr_book_1?ie=UTF8&field-author=Mustafa+Tayar&search-alias=books), [N. Telli](https://www.amazon.com.tr/s/ref=dp_byline_sr_book_2?ie=UTF8&field-author=Nihat+Telli&search-alias=books), [K. Çetin](https://www.amazon.com.tr/s/ref=dp_byline_sr_book_3?ie=UTF8&field-author=Kader+%C3%87etin&search-alias=books), (2020) Laboratuvar Teknikleri ve Güvenliği, ‎ Dora Yayıncılık. |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer, basic laboratory equipments, instrumental analysis aparatuses. |

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| --- | --- |
| **Course Schedule** | |
| **1** | Laboratory rules and first aid |
| **2** | Introduction of chemistry laboratory supplies |
| **3** | Solution preparation |
| **4** | Separation of homogeneous mixtures |
| **5** | Separation of homogeneous mixtures |
| **6** | Separation of heterogeneous mixtures |
| **7** | Separation of heterogeneous mixtures |
| **8** | Mid-Term Exam |
| **9** | Volumetric analysis |
| **10** | Volumetric analysis |
| **11** | Gravimetric analysis |
| **12** | Gravimetric analysis |
| **13** | Using of UV-vis spectrophotometer |
| **14** | Dye adsorption from water |
| **15** | Dye adsorption from water |
| **16,17** | Final Exam |

|  |  |  |  |
| --- | --- | --- | --- |
| **Calculation of Course Workload** | | | |
| **Activities** | **Number** | **Time (Hour)** | **Total Workload (Hour)** |
| Course Time (number of course hours per week) | 14 | 4 | 56 |
| Classroom Studying Time (review, reinforcing, prestudy,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 10 | 20 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 30 | 30 |
|  | **Total workload** | | **140** |
|  | **Total workload / 30** | | **4,67** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 5 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 5 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 3 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 3 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 5 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr.  Naile KARAKEHYA | Assist. Prof. Dr.  Burcu SEZGİN |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Instrumental Analysis Techniques | 241212017 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 2 | 2 | 2 | 3 | 5 |

|  |  |  |  |  |
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| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
| 3 |  |  |  |  |

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| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To provide the theoretical and practical information about routine instrumental analysis needed for environmental pollution control. |
| **Short Course Content** | Classification of analysis methods, classical analysis methods, optical methods, UV-vis spectrophotometry, atomic and molecular absorption spectrophotometry, mass spectroscopy, infrared spectroscopy, X-ray methods, NMR and Raman spectroscopy, electrometric methods, chromatographic methods, gas chromatography, liquid chromatography. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Between chemical analysis to realize the importance of instrumental analysis methods | 1, 2, 3, 4, 6, 10, 11 | 1, 2, 5 | A, B, D |
| **2** | To understand instrumental analysis methods | 1, 2, 3, 4, 6, 10, 11 | 1, 2, 5 | A, B, D |
| **3** | To understand the working principles and instrumental analysis device | 1, 2, 3, 4, 6, 10, 11 | 1, 2, 5 | A, B, D |
| **4** | To understand applications of instrumental analysis in environmental topics | 1, 2, 3, 4, 6, 10, 11 | 1, 2, 5 | A, B, D |
| **5** | Evaluates and interprets the results of instrumental analysis | 1, 2, 3, 4, 6, 10, 11 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Skoog D.A., Holler F.J., Nieman T.A. (1998), Enstrümantal Analiz İlkeleri Bilim Yayıncılık |
| **Supporting References** | 1) Laboratuar Teknikleri, S.S.Evrensel, Nobel Yayıncılık.  2) İnstrümental Analiz, Gündüz T.,Gazi Kitabevi. |
| **Necessary Course Material** | Projection, computer, basic laboratory equipments, instrumental analysis aparatuses. |

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| **Course Schedule** | |
| **1** | Clasification of analysis methods |
| **2** | Classical analysis methods |
| **3** | Optical methods |
| **4** | UV-vis spectrophotometry |
| **5** | Atomic and molecular absorption spectrophotometry |
| **6** | Mass Spectroscopy |
| **7** | Infrared Spectroscopy |
| **8** | Mid-Term Exam |
| **9** | X-ray methods |
| **10** | NMR and Raman spectroscopy |
| **11** | Electrometric methods |
| **12** | Electrometric methods |
| **13** | Chromatographic methods |
| **14** | Liquid chromatography |
| **15** | Gas chromatography |
| **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 | 4 | 56 |
| Classroom Studying Time (review, reinforcing, prestudy,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 10 | 20 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 30 | 30 |
|  | **Total workload** | | **140** |
|  | **Total workload / 30** | | **4,67** |
|  | **Course ECTS Credit** | | **5** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 5 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 5 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 5 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 3 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 5 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 3 |
| **11** | Gains the necessity and awareness of lifelong learning. | 3 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assist. Prof. Dr. Burcu SEZGİN |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Occupational Health and Safety | 241212029 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 2 | 2 | 0 | 2 | 3 |

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To inform the student about work accidents and occupational diseases, to make them understand how to take safety precautions, and to inform them about the legislation regarding occupational health and safety. |
| **Short Course Content** | Occupational health and safety concepts, hazard and risk factors, personal protective equipment, laws and regulations regarding occupational health and safety. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To provide occupational health and safety knowledge | 7, 9 | 1, 2, 5 | A, B, D |
| **2** | To learn the protective measures to be taken into consideration in occupational health and safety | 7, 9 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Kılkış İ. (2016) İş sağlığı ve Güvenliği, Dora yayıncılık. |
| **Supporting References** | Bilir N. (2016) İş sağlığı ve Güvenliği, Güneş Tıp Kitapevi. |
| **Necessary Course Material** | Projection, computer |

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| **Course Schedule** | |
| **1** | Occupational health and safety concepts |
| **2** | Concept of work accident and classification of work accidents |
| **3** | Concept and classification of occupational disease |
| **4** | Danger and risk |
| **5** | Physical risk factors |
| **6** | Chemical risk factors |
| **7** | Safe storage of laboratory chemicals |
| **8** | Mid-Term Exam |
| **9** | Biological risk factors |
| **10** | Personal protective equipment |
| **11** | Personal protective equipment |
| **12** | Occupational Health and Safety Law No. 6331 |
| **13** | Occupational Health and Safety Regulation |
| **14** | Safety and Health signs regulation |
| **15** | Biological risk factors |
| **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 | 1 | 10 | 10 |
| Quiz Exam | 1 | 1 | 1 |
| Studying for Quiz Exam | 1 | 10 | 10 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 15 | 15 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **86** |
|  | **Total workload / 30** | | **2,86** |
|  | **Course ECTS Credit** | | **3** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 10 |
| Homework | 10 |
|  |  |
| **Final Exam** | 50 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 5 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 5 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** |  |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Communication and Employment Skills | 241212030 |

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| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 2 | 2 | 0 | 2 | 3 |

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | Explains the characteristics of effective communication and provide information on the development of employment skills |
| **Short Course Content** | Development of Communication and Employment Skills |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To define the components of communication process. | 4, 11 | 1, 2, 5 | A, B, D |
| **2** | To explain the characteristics of mass media according to communication models. | 4, 11 | 1, 2, 5 | A, B, D |
| **3** | To provide information on the development of employment skills | 4, 11 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Gürüz, D., Eğinli, T. 2013. İletişim Becerileri. Nobel Akademik Yayıncılık |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer |

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| **Course Schedule** | |
| **1** | The concept of communication and its definition |
| **2** | The concept of process in communication and elements of communication process |
| **3** | Modes of communication (language-culture relations in communication) |
| **4** | Modes of communication |
| **5** | Modes of communication |
| **6** | Communication technologies |
| **7** | Qualities of a Good Speaker |
| **8** | Mid-Term Exam |
| **9** | The concept of Employment , Employment Skills ([Job search](http://www.google.com.tr/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&cad=rja&uact=8&ved=0CCMQFjAA&url=http%3A%2F%2Fen.wikipedia.org%2Fwiki%2FJob_hunting&ei=RVCnU9jYJdLG7Ab-84DQCA&usg=AFQjCNFjFGxayMbDhJDkUFDI0b9veba6cQ&bvm=bv.69411363,d.bGE) , Preparing a resume) |
| **10** | The concept of Employment , Employment Skills ([Job search](http://www.google.com.tr/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&cad=rja&uact=8&ved=0CCMQFjAA&url=http%3A%2F%2Fen.wikipedia.org%2Fwiki%2FJob_hunting&ei=RVCnU9jYJdLG7Ab-84DQCA&usg=AFQjCNFjFGxayMbDhJDkUFDI0b9veba6cQ&bvm=bv.69411363,d.bGE) , Preparing a resume) |
| **11** | The concept of Employment , Employment Skills (Preparing a resume, [Job ınterviews)](http://www.google.com.tr/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=6&cad=rja&uact=8&ved=0CDUQFjAF&url=http%3A%2F%2Fjobsearch.about.com%2Fcs%2Finterviews%2Fa%2Fjobinterviewtip.htm&ei=S1GnU8OVIcOS7Ab1goG4DA&usg=AFQjCNFg-XsuqoQT1g1ezoQ7ibYXuAsJSQ&bvm=bv.69411363,d.bGE) |
| **12** | Job search channels-İŞKUR |
| **13** | Job search channels- Career sites |
| **14** | KOSGEB (Republic of Turkey Small and Medium Enterprise Development Organization) |
| **15** | KOSGEB-Application Support Programme |
| **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 | 1 | 10 | 10 |
| Quiz Exam | 1 | 1 | 1 |
| Studying for Quiz Exam | 1 | 10 | 10 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 15 | 15 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **86** |
|  | **Total workload / 30** | | **2,86** |
|  | **Course ECTS Credit** | | **3** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 10 |
| Homework | 10 |
|  |  |
| **Final Exam** | 50 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 5 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. | 5 |

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| **LECTURER(S)** | | | | |
| **Prepared by** |  |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**08.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Professional Ethics | 241212031 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 2 | 2 | 0 | 2 | 3 |

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

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | Gaining competencies regarding business ethics |
| **Short Course Content** | Ethics and moral concepts, ethical systems, factors that play a role in the formation of morality, professional corruption and the consequences of unethical behavior in professional life, the concept of business ethics and social responsibility. |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To be able to explain the concepts of ethics, morality and business ethics | 4, 7, 11 | 1, 2, 5 | A, B, D |
| **2** | To be able to establish a connection between corporate citizenship, corporate social responsibility and business ethics | 4, 7, 11 | 1, 2, 5 | A, B, D |
| **3** | To be able to explain organizational and individual factors affecting the ethical decision-making process | 4, 7, 11 | 1, 2, 5 | A, B, D |
| **4** | To be able to express the basic components of business ethics programs in their explicit and implicit forms | 4, 7, 11 | 1, 2, 5 | A, B, D |

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| --- | --- |
| **Main Textbook** | İş ve Meslek Ahlakı, M. Arslan, Siyasal Kitabevi. |
| **Supporting References** | Uluslararası İş Etiği ve Yönetimi, S.Yeşil, Adalet Yayınları. |
| **Necessary Course Material** | Projection, computer |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | The concepts of ethics and morality |
| **2** | The concepts of ethics and morality |
| **3** | The concepts of ethics and morality |
| **4** | The ethical systems |
| **5** | The ethical systems |
| **6** | The factors that play a role in the formation of morality |
| **7** | The ethics of profession |
| **8** | Mid-Term Exam |
| **9** | The ethics of profession |
| **10** | The ethics of profession |
| **11** | The results of corruption and unethical behavior in professional life |
| **12** | The results of corruption and unethical behavior in professional life |
| **13** | The concept of social responsibility |
| **14** | The concept of social responsibility |
| **15** | The concept of social responsibility |
| **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,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 1 | 1 | 1 |
| Studying for Quiz Exam | 1 | 10 | 10 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 15 | 15 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **86** |
|  | **Total workload / 30** | | **2,86** |
|  | **Course ECTS Credit** | | **3** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 10 |
| Homework | 10 |
|  |  |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 5 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 5 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. | 5 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assist. Prof. Dr. Burcu SEZGİN |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Entrepreneurship and Environment | 241212032 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 2 | 2 | 0 | 2 | 3 |

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The aim of the course is to inform students about starting a business, to popularize their entrepreneurial tendencies, to raise them to a level where they can start their own business and to prepare and implement the business plan required to establish them, as well as to raise awareness about initiatives that can be taken regarding the environment. |
| **Short Course Content** | Definition of entrepreneurship, entrepreneurship stories on environmental issues, SME concept, explaining the business impact for entrepreneurship, characteristics of being an entrepreneur, starting to be an entrepreneur, managing growing companies, finding funds and investments. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Learns the basic concepts of entrepreneurship. | 3, 6, 10, 11 | 1, 2, 5, 15 | A, B, D |
| **2** | Gains knowledge about entrepreneurial skills in environmental issues. | 3, 6, 10, 11 | 1, 2, 5, 15 | A, B, D |
| **3** | Gain knowledge about entrepreneurship culture, types of entrepreneurship and entrepreneurial skills. | 3, 6, 10, 11 | 1, 2, 5, 15 | A, B, D |
| **4** | It answers the question of how and where to start entrepreneurship. | 3, 6, 10, 11 | 1, 2, 5, 15 | A, B, D |
| **5** | Learns how to make a business plan and how to write and present a business plan. | 3, 6, 10, 11 | 1, 2, 5, 15 | A, B, D |

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| --- | --- |
| **Main Textbook** | 1. Yurtseven, H. R. (2007). Girişimcilik-Küçük Bir İşletme Kurmak ve Yönetmek, Detay Yayıncılık, İstanbul. 2. İnan, M. (2011). Başarılı Girişimcilik, (Çev. ), Yayın ve İletişim Hizmetleri, İstanbul 3. Mellor, R. B., & Coulton, G. R. (2009). Entrepreneurship for Everyone: A Student Textbook. Sage Publications, Ltd. |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | Enterprise/entrepreneurship concepts |
| **2** | Types of entrepreneurship, personality traits and skills of the entrepreneur, entrepreneurial culture |
| **3** | Innovation, creativity and business idea |
| **4** | Examples of entrepreneurship in environmental matters |
| **5** | Business development, business establishment process development and stages |
| **6** | Processes of finding funds, resources and investments |
| **7** | Business plan concept and content |
| **8** | Mid-Term Exam |
| **9** | Marketing plan, financial plan, production/management plan |
| **10** | Social and women's entrepreneurship |
| **11** | Problems and solution processes faced by entrepreneurship |
| **12** | Individual business development and entrepreneurship presentations |
| **13** | Individual business development and entrepreneurship presentations |
| **14** | Individual business development and entrepreneurship presentations |
| **15** | Individual business development and entrepreneurship presentations |
| **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 | 1 | 10 | 10 |
| Quiz Exam | 1 | 1 | 1 |
| Studying for Quiz Exam | 1 | 10 | 10 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 15 | 15 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **86** |
|  | **Total workload / 30** | | **2,86** |
|  | **Course ECTS Credit** | | **3** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 10 |
| Homework | 10 |
|  |  |
| **Final Exam** | 50 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 4 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 5 |
| **11** | Gains the necessity and awareness of lifelong learning. | 4 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar Aytar Çelik |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**08.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Environmental Laboratory II | 241213001 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 0 | 4 | 2 | 5 |

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The aim of this course is to learn laboratory rules, perform basic laboratory practices and instrumental analysis techniques. |
| **Short Course Content** | Water and wastewater sampling, water analysis, use of a microscope, medium preparation, microbiological cultivation techniques, preparation of preparations, examination of prepared preparations under a microscope. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Understand laboratory skills such as sampling, storing and analyzing. | 1,2,3,4,5,6 | 1, 2, 5 | A, B, D |
| **2** | Learning how to use a microscope and understanding its working principles | 1,2,3,4,5,6 | 1, 2, 5 | A, B, D |
| **3** | Making applications on water quality analysis | 1,2,3,4,5,6 | 1, 2, 5 | A, B, D |
| **4** | Learning microbiological cultivation techniques | 1,2,3,4,5,6 | 1, 2, 5 | A, B, D |
| **5** | Performing applications on examining microbiological samples under a microscope | 1,2,3,4,5,6 | 1, 2, 5 | A, B, D |

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| --- | --- |
| **Main Textbook** | Su Kirliliği Kontrolü Yönetmeliği Numune Alma ve Analiz Metotları Tebliği  Su Kirliliği Kontrolü Yönetmeliği İdari Usuller Tebliği  Yer üstü suları, yer altı suları ve sedimentten numune alma ve biyolojik örnekleme tebliği  Yalçın, H., Gürü, M. Su Teknolojisi, 2010. Palme Yayıncılık. |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer, basic laboratory equipment, instrumental analysis apparatuses. |

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| --- | --- |
| **Course Schedule** | |
| **1** | Laboratory rules and first aid |
| **2** | Introduction of biology laboratory materials |
| **3** | Microscope use and types |
| **4** | Water and wastewater sampling |
| **5** | Water and wastewater sampling |
| **6** | Water quality characteristics |
| **7** | Water quality characteristics |
| **8** | Mid-Term Exam |
| **9** | Introduction of microbiology laboratory materials |
| **10** | Media preparation and media types |
| **11** | Microbiological planting techniques |
| **12** | Microbiological planting techniques |
| **13** | Preparation of preparations |
| **14** | Examination of stained preparations under the microscope |
| **15** | Examination of stained preparations under the microscope |
| **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 | 4 | 56 |
| Classroom Studying Time (review, reinforcing, prestudy,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 10 | 20 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 30 | 30 |
|  | **Total workload** | | **140** |
|  | **Total workload / 30** | | **4,67** |
|  | **Course ECTS Credit** | | **5** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 4 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 5 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 5 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 5 |
| **5** | Acquires sensitivity to global and local environmental problems. | 3 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Prof Dr.  Pınar AYTAR ÇELİK | Assoc. Prof. Dr.  Esengül KÖSE | Assoc. Prof. Dr.  Naile KARAKEHYA |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Conservation Biology | 241213014 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
| 3 |  |  |  |  |

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | Conservation biology, biological biodiversity, establishing, managing protected areas, national and International Approach to Conservation areas |
| **Short Course Content** | Biological diversity, where is the world’s biodiversity found, threats to biological diversity, habitat destruction, degradation and global climate change, establishing, managing and restoration ecology of protected areas, Conservation and Sustainable Development at the national and international levels |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To acquire information to biological biodiversity | 5, 7, 9 | 1, 2, 5 | A, B, D |
| **2** | To acquire information about biodiversity in Turkey and in the world | 5, 7, 9 | 1, 2, 5 | A, B, D |
| **3** | To information about threats to biodiversity | 5, 7, 9 | 1, 2, 5 | A, B, D |
| **4** | To information about protected areas | 5, 7, 9 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Primack, R. B. (Çeviri: Dönmez, A.A. ve Dönmez O. E.), Koruma Biyolojisi (2012)  Çepel, N. Biyoçeşitlilik Önemi ve Korunması (1997). Tema Vakfı Yayınları |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer. |

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| **Course Schedule** | |
| **1** | Conservation biology and its basics, |
| **2** | What is biological diversity, importance of biological diversity, |
| **3** | Where is the world’s biological diversity found |
| **4** | The basic methods for biological diversity |
| **5** | The basic methods for biological diversity |
| **6** | Conservation at the Population and Species Levels |
| **7** | Practical applications for Protected areas and biological diversity |
| **8** | Mid – term exam |
| **9** | Practical applications for Protected areas and biological diversity |
| **10** | Practical applications for Protected areas and biological diversity |
| **11** | Ecological agriculture and animal husbandry |
| **12** | Biological diversity of Turkey |
| **13** | Biological diversity of Turkey |
| **14** | Laws relating to biological diversity in Turkey and international agreements |
| **15** | Ecological Economics |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 1 | 2 | 2 |
| Studying for Quiz Exam | 1 | 20 | 20 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 25 | 25 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 25 | 25 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 5 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 4 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 3 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar Aytar Çelik |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**11.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Nanotechnology and Environment | 241213015 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

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| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To learn about nanotechnology, a rapidly developing discipline in recent years, and its use for the benefit of the environment. |
| **Short Course Content** | Introduction to nanotechnology, nanomaterials, measurement methods of nanomaterials, production technologies, transport of nanoparticles in the environment, potential ecological damage of nanomaterials, environmental applications of nanotechnology, nanotechnology used in pollution control. |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Gaining knowledge about nanomaterial production technologies. | 7,9,10,11 | 1, 2, 5 | A, B, D |
| **2** | Learning the distribution and transportation methods of nanoparticles in the environment. | 7,9,10,11 | 1, 2, 5 | A, B, D |
| **3** | To introduce the toxicological effects of nanomaterials and their measurement methods. | 7,9,10,11 | 1, 2, 5 | A, B, D |
| **4** | Learning about nanotechnology used in pollution control. | 7,9,10,11 | 1, 2, 5 | A, B, D |

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| --- | --- |
| **Main Textbook** | J. K. Biswas, M. Rai (2024) Nanotechnology for Environmental Management, CRC Press. |
| **Supporting References** | Ş. Erkoç (2007), Nanobilim ve Nanoteknoloji, ODTÜ Yayıncılık ve İletişim. |
| **Necessary Course Material** | Projection, computer. |

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| --- | --- |
| **Course Schedule** | |
| **1** | Course Introduction |
| **2** | Introduction to nanotechnology |
| **3** | Nanomaterials; nanotubes, nanocrystals, nanoparticles |
| **4** | Nanomaterials; nanoporous solids, thin films |
| **5** | Production technologies of nanomaterials |
| **6** | Various areas of use of nanotechnology |
| **7** | Environmental applications of nanotechnology |
| **8** | Mid-Term Exam |
| **9** | Green nanotechnology |
| **10** | Applications of nanotechnology in medicine |
| **11** | Nanomaterials as waste |
| **12** | Toxicological effects and exposure routes of nanomaterials |
| **13** | The fate of nanomaterials in water |
| **14** | The fate of nanomaterials in soil |
| **15** | The fate of nanomaterials in the air |
| **16,17** | Final Exam |

|  |  |  |  |
| --- | --- | --- | --- |
| **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,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 30 | 30 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 3 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 5 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains the necessity and awareness of lifelong learning. | 4 |

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| --- | --- | --- | --- | --- |
| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Naile KARAKEHYA |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| National Parks and Protected Areas Management | 241213016 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To teach the students the nature conservation-related concepts and approaches, with specific reference to protected areas and national parks. |
| **Short Course Content** | Nature conservation-related concepts and approaches, nature conservation-related international and national developments, protected area concept and system, main characteristics and managerial features of national parks. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To be informed about nature conservation-related concepts and approaches, | 2,5,7,10 | 1, 2, 5 | A, B, D |
| **2** | Nature conservation-related international and national developments, | 2,5,7,10 | 1, 2, 5 | A, B, D |
| **3** | Protected area concept and system, | 2,5,7,10 | 1, 2, 5 | A, B, D |
| **4** | National park concept and managerial features of national parks, | 2,5,7,10 | 1, 2, 5 | A, B, D |

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| --- | --- |
| **Main Textbook** | 1) Ceta Tanıtım, MilliParklar (2012),Doğa Koruma ve Milli Parklar Genel Müdürlüğü Yayınları.  2)Primack, R. B. (Çeviri: Dönmez, A.A. ve Dönmez O. E.), Koruma Biyolojisi (2012) |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer |

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| **Course Schedule** | |
| **1** | Basic concepts . |
| **2** | Historical development of nature conservation and current situation . |
| **3** | Biodiversity |
| **4** | Where are biodiversity in the world? |
| **5** | Nature conservation areas |
| **6** | Management objectives and functions of protected areas . |
| **7** | Threats towards protected areas . |
| **8** | Mid-Term Exam |
| **9** | Protected area management-land use planning and system planning relations . |
| **10** | National parks |
| **11** | National park management objectives and selection criteria . |
| **12** | Planning process in national parks . |
| **13** | Protected areas and national parks in Turkey |
| **14** | Protected areas and national parks in the world |
| **15** | Protected areas and national parks in the world |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 3 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 5 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 4 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 3 |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Esengül KÖSE |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Solid Waste Management | 241213017 |

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| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The aim of this course is for students to have comprehensive knowledge about the types, properties and analysis methods, collection, recycling and disposal of solid wastes. |
| **Short Course Content** | Classification of solid wastes, analysis methods, preventing waste at the source, wild storage and landfill, composting, incineration, pyrolysis, regulations on solid waste, recycling, recovery and reuse. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To have knowledge about solid waste disposal methods. | 2,3,5,6,7,9 | 1, 2, 5 | A, B, D |
| **2** | To be able to define the characteristics of solid waste and determine the appropriate disposal method accordingly. | 2,3,5,6,7,9 | 1, 2, 5 | A, B, D |
| **3** | To be able to interpret the relevant regulations. | 2,3,5,6,7,9 | 1, 2, 5 | A, B, D |
| **4** | To gain awareness about recycling, recovery and reuse. | 2,3,5,6,7,9 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Öztürk İ (2010) Katı atık Yönetimi, Seçkin Yayınevi. |
| **Supporting References** | Tchobanoglous, G., Theisen, H., Vigil, S.A. (1993) Integrated Solid Waste Management, McGraw Hill. |
| **Necessary Course Material** | Projection, computer. |

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| **Course Schedule** | |
| **1** | Course Introduction |
| **2** | Classification of solid wastes |
| **3** | Factors affecting the solid waste production rate |
| **4** | Collection of solid waste |
| **5** | Wild storage |
| **6** | Advantages and disadvantages of landfill facility |
| **7** | Location selection and ground preparation for the landfill facility |
| **8** | Mid-Term Exam |
| **9** | Gas collection and drainage in landfill |
| **10** | Composting stages |
| **11** | Factors affecting composting |
| **12** | Incineration |
| **13** | Pyrolysis |
| **14** | Recycling, recovery, reuse |
| **15** | Legal regulations |
| **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,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 30 | 30 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 4 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 4 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 5 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 5 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 4 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 4 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Naile KARAKEHYA |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Air Pollution Control | 241213018 |

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| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The aim of this course is for students to have comprehensive knowledge about air pollution sources, effects, measurement and prevention. |
| **Short Course Content** | Sources of air pollution, air pollution and meteorology, legal legislation, measurement techniques and analysis methods, control of air pollution according to source and pollutant characteristics, technologies used to prevent and reduce air pollution. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To have knowledge about air pollution sources and air pollution prevention. | 2,3,5,6,7,9 | 1, 2, 5 | A, B, D |
| **2** | To understand air pollution measurement and analysis methods. | 2,3,5,6,7,9 | 1, 2, 5 | A, B, D |
| **3** | To raise awareness about the effects of air pollution on the environment and human health. | 2,3,5,6,7,9 | 1, 2, 5 | A, B, D |

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| --- | --- |
| **Main Textbook** | Kırımhan S. (2006) Hava Kirliliği ve Kontrolü, Turhan Kitabevi. |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer. |

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| **Course Schedule** | |
| **1** | Course Introduction |
| **2** | Types of pollutants that cause air pollution |
| **3** | Effects of air pollution on the environment and human health |
| **4** | Air pollution and meteorology |
| **5** | Inversion and heat island concepts |
| **6** | Air pollution measurement methods (emission) |
| **7** | Air pollution measurement methods (immission) |
| **8** | Mid-Term Exam |
| **9** | Sources of air pollution |
| **10** | Air pollution reduction and prevention technologies (gas pollutants) |
| **11** | Air pollution reduction and prevention technologies (particulate pollutants) |
| **12** | Air quality index |
| **13** | Air pollution limit values |
| **14** | International regulations |
| **15** | Legal regulations |
| **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,….) |  |  |  |
| Homework | 1 | 10 | 10 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 30 | 30 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 4 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 4 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 5 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 5 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 4 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 4 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Naile KARAKEHYA |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Environmental Impact Assesment | 241213019 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To understand the report of environmental impacts assessment and to gain the ability to prepare the report of environmental impacts assessment |
| **Short Course Content** | The concepts of Environmental Impacts Assessment (EIA), Environmental Impacts Assessment Regulations, EIA applications on highways and coastal structures, EIA applications on waste disposal facilities, EIA applications on mines, EIA applications on cement plants, EIA applications on hydroelectric and thermal power plants, EIA applications on fish farms and integrated meat plants , EIA applications on textile industry, EIA applications on the area of tourism and housing, EIA report samples. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To understand the basic concepts of environmental impacts assessment | 3, 4, 9 | 1, 2, 5 | A, B, D |
| **2** | To comprehend the regulations of environmental impacts assessment report | 3, 4, 9 | 1, 2, 5 | A, B, D |
| **3** | To comprehend the preparing stages of environmental impacts assessment | 3, 4, 9 | 1, 2, 5 | A, B, D |
| **4** | To be able to prepare environmental impacts assessment report. | 3, 4, 9 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Türkiye'de ÇED ve Çevresel Etki Değerlendirmesi Yönetmeliği İçerik Çözümlemesi, M. Şengül, Detay Yayıncılık. |
| **Supporting References** | 1. Çevre Hukuku Açısından Çevresel Etki Değerlendirmesi, A. Saygılı, İmaj Yayıncılık.  2. Uluslararası Hukuk Açısından Çevresel Etki Değerlendirmesi, Ş. Güneş, Siyasal Kitabevi. |
| **Necessary Course Material** | Projection, computer. |

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| **Course Schedule** | |
| **1** | Sustainable development |
| **2** | Impact assessments |
| **3** | Introduction to EIA |
| **4** | EIA in Turkey |
| **5** | EIA process, purpose and methods |
| **6** | Annexes in the EIA regulation |
| **7** | Sectoral guides and EIA regulation |
| **8** | Mid – term exam |
| **9** | EIA applications in mining |
| **10** | EIA applications in energy sector |
| **11** | EIA applications in transportation sector |
| **12** | EIA applications in tourism sector |
| **13** | Examples of EIA applications |
| **14** | Examples of EIA applications |
| **15** | Examples of EIA applications |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 1 | 2 | 2 |
| Studying for Quiz Exam | 1 | 20 | 20 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 25 | 25 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 25 | 25 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 4 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 5 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 4 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar Aytar Çelik |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**11.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Water Quality and Control | 241213020 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

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

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | Understanding basic information on monitoring and controlling water quality characteristics of continental surface and groundwater sources. |
| **Short Course Content** | Definition of water, water resources, continental surface and underground water quality parameters (physical, chemical and biological), the basic principles of water quality protection, water standards, the methods of water quality analyses, health problems caused by water, selection of the type of treatment by water quality |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To provide information about water resources, | 1,2,3,4,5,6 | 1, 2, 5 | A, B, D |
| **2** | To recognize physical, chemical and biological water quality parameters | 1,2,3,4,5,6 | 1, 2, 5 | A, B, D |
| **3** | To understand the basic principles of water quality protection | 1,2,3,4,5,6 | 1, 2, 5 | A, B, D |
| **4** | To understand the methods of water quality analyses, | 1,2,3,4,5,6 | 1, 2, 5 | A, B, D |

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| --- | --- |
| **Main Textbook** | Ö. Egemen, U. Sunlu, Su Kalitesi (2006), Ege Üniversitesi Basımevi.  Sönmez, Y. A., Hisar, O., Karataş, M. Arslan, G. Ve Aras, S. M. (2008) Sular Bilgisi, Nobel Yayın Dağıtım.  Tanyolaç, J. Limnoloji (2009), Hatipoğlu Basım Yayın  Yalçın, H. Ve Gürü, M. (2010) Su Teknolojisi, Palme Yayıncılık |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer |

|  |  |
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| **Course Schedule** | |
| **1** | Definition of water quality and scientific directions of water |
| **2** | Water quality parameters (physical) |
| **3** | Water quality parameters (chemical) |
| **4** | Water quality parameters (biological) |
| **5** | The properties of drinking, using and irrigation water |
| **6** | Properties of river |
| **7** | Water quality monitoring studies in rivers |
| **8** | Mid-Term Exam |
| **9** | Properties of lakes |
| **10** | Water quality monitoring studies in lakes |
| **11** | Properties of groundwater and monitoring studies |
| **12** | Sampling of wastewaters |
| **13** | Watershed-based Management Approach, biomonitoring studies |
| **14** | Water Quality Standards and Legislation |
| **15** | Water Quality Standards and Legislation |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 4 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 4 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 5 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 3 |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Esengül KÖSE |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Soil Pollution and Control | 241213021 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | Learning description and the structure of soil, pollutants in soil and their sources, having knowledge about prevention of soil pollution and soil amelioration |
| **Short Course Content** | Description and the structure of soil, pollutants in soil and their sources, organic pollutants; pesticides, oil wastes, inorganic pollutants; heavy metals, nitrogen and phosphorus pollution, pollution of radioactive material, transport and transformation of pollutants in soil, prevention of soil pollution and soil amelioration, biological amelioration techniques, physic-chemical amelioration techniques, types of erosion and precautions |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To have knowledge about soil pollution, | 1,2,3,5,6,10 | 1, 2, 5 | A, B, D |
| **2** | Understanding soil quality control parameters, | 1,2,3,5,6,10 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Çınar Ö, Çevre Kirliliği ve Kontrolü, (2008) Nobel Yayınevi  Gökmen, S. Genel Ekoloji, (2011). Nobel Yayıncılık  Karaçal, İ. Toprak Verimliliği (2011).Nobel Yayıncılık. |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer |

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| --- | --- |
| **Course Schedule** | |
| **1** | Definition and formation of soil |
| **2** | General properties of a soil |
| **3** | Soil types |
| **4** | Soil pollution |
| **5** | Physical pollution of soil |
| **6** | Chemical pollution of soil |
| **7** | Biological pollution of soil |
| **8** | Mid-Term Exam |
| **9** | Types of Erosion and Precautions, Action Plan of Combating Erosion |
| **10** | Pollution of Soil Control and The point sources Contaminated Sites Regulation |
| **11** | Regulations in terms of usage of domestic and urban cleaning mud in soil |
| **12** | Soil analysis and fertilizing methods |
| **13** | Air pollution effect on soil pollution |
| **14** | Water pollution effect on soil pollution |
| **15** | Remediation of contaminated soils |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 4 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 4 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 5 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| --- | --- | --- | --- | --- |
| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Esengül KÖSE |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Quality And Environmental Management Systems | 241213022 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The aim of this course is to gain qualifications related to quality assurance and standards for business life. |
| **Short Course Content** | The concept of quality, standard and standardization, the importance of standards for manufacturing and service sectors, quality tools to define and solve problems, quality costs, quality management system models, ISO 14001 environmental management system, application areas of ISO 14001 environmental management system, quality management systems, phases of quality management system’ setup |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Understanding basic concepts and terms that are used for quality and quality management systems. | 4, 6, 7 | 1, 2, 5 | A, B, D |
| **2** | Comprehension of the quality and environmental management systems. | 4, 6, 7 | 1, 2, 5 | A, B, D |
| **3** | Learning and satisfying the conditions of the environmental management systems. | 4, 6, 7 | 1, 2, 5 | A, B, D |

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| --- | --- |
| **Main Textbook** | 1.Dilsiz İ., Kartal C.S.,Kalite Güvencesi ve Standartları, Detay Yayıncılık, Ankara, 2012.  2.BURNAK N., Toplam Kalite Yönetimi (İstatistiksel Süreç Kontrolü), Osmangazi Üniversitesi Yayınları, Eskişehir, 1997. |
| **Supporting References** | Lecture notes |
| **Necessary Course Material** | Computer, projection |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | Quality and basic concept of quality |
| **2** | Quality tools to define and solve problems |
| **3** | Quality costs |
| **4** | Standards and standardization |
| **5** | Certification and accreditation |
| **6** | Calibration and Metrology |
| **7** | Quality management systems |
| **8** | Mid – term exam |
| **9** | Quality management systems |
| **10** | Quality management systems |
| **11** | ISO 14001 environmental management system’s setting up stages |
| **12** | ISO 14001 environmental management system |
| **13** | ISO 14001 environmental management system |
| **14** | Applications |
| **15** | Applications |
| **16,17** | Final Exam |

|  |  |  |  |
| --- | --- | --- | --- |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 1 | 2 | 2 |
| Studying for Quiz Exam | 1 | 20 | 20 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 25 | 25 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 25 | 25 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 4 |
| **5** | Acquires sensitivity to global and local environmental problems. |  |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 4 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar Aytar Çelik |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**11.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Renewable Energy Sources | 241213023 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To learn the basic terms and applications of clean and sustainable energy production. |
| **Short Course Content** | Definition and importance of energy, relation between environment and energy, non-renewable energy sources, classification of renewable energy sources, solar energy, wind energy, hydraulic energy, biomass energy, hydrogen energy, geothermal energy, novel technologies in the field of energy, energy efficiency and energy saving. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To understand the relation between energy and environment | 4, 5, 6, 9, 10 | 1, 2, 5 | A, B, D |
| **2** | To comprehend the position and importance of alternative energy sources in energy production | 4, 5, 6, 9, 10 | 1, 2, 5 | A, B, D |

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| --- | --- |
| **Main Textbook** | Yenilenebilir Enerji Kaynakları ve Kullanımı, H. Öztürk, Teknik Yayınevi. |
| **Supporting References** | 1. Alternatif Enerji Kaynakları, M. Arıcıoğlu, Nobel Yayın Dağıtım.  2. Yenilenebilir Enerji Kaynakları, İ. Akova, Nobel Yayın Dağıtım. |
| **Necessary Course Material** | Projection, computer. |

|  |  |
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| **Course Schedule** | |
| **1** | Definition and importance of energy |
| **2** | Relation between environment and energy |
| **3** | Non-renewable energy sources |
| **4** | Non-renewable energy sources |
| **5** | Classification of renewable energy sources |
| **6** | Solar energy |
| **7** | Wind energy |
| **8** | Mid – term exam |
| **9** | Hydraulic energy |
| **10** | Biomass energy |
| **11** | Hydrogen energy |
| **12** | Geothermal energy |
| **13** | Novel technologies in the field of energy |
| **14** | Novel technologies in the field of energy |
| **15** | Energy efficiency and energy saving |
| **16,17** | Final Exam |

|  |  |  |  |
| --- | --- | --- | --- |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 3 |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 5 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assist. Prof. Dr. Burcu SEZGİN |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Biotechnology and Environment | 241213024 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | It aims to provide scientific competence regarding biotechnological methods applied in various fields and various organisms. |
| **Short Course Content** | Introduction to biotechnology, historical development, areas of use, relationship with other branches of science, biotechnological methods applied in different organisms, recombinant DNA technology, environmental biotechnology |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Defines the basic concepts used in biotechnology. | 5, 6, 10 | 1, 2, 5 | A, B, D |
| **2** | Gains knowledge about the historical development of basic biotechnological methods. | 5, 6, 10 | 1, 2, 5 | A, B, D |
| **3** | Understands the biotechnological importance of biological systems | 5, 6, 10 | 1, 2, 5 | A, B, D |
| **4** | Learns the application areas of biotechnological methods. | 5, 6, 10 | 1, 2, 5 | A, B, D |
| **5** | It establishes a connection between biotechnology and its relations with other branches of science. | 5, 6, 10 | 1, 2, 5 | A, B, D |
| **6** | Can describe biotechnological methods applied to plants, animals and microorganisms. | 5, 6, 10 | 1, 2, 5 | A, B, D |
| **7** | Can understand recombinant DNA technology | 5, 6, 10 | 1, 2, 5 | A, B, D |
| **8** | Have knowledge about the methods that can be used in environmental biotechnology. | 5, 6, 10 | 1, 2, 5 | A, B, D |

|  |  |
| --- | --- |
| **Main Textbook** | Biyoteknolojiye giriş, William J Thieman ve Michael A. Palladino, Çev ed. Mücella Tekeoğlu, Palme Yayıncılık, Ankara, 2013  Gen klonlama ve DNA analizi, T.A. Brawn, 2009. |
| **Supporting References** | Aran N. ‘‘Gıda Biyoteknolojisi’’ Nobel Yayın Dağ. Ltd. Şti., 2010, Ankara. W.J. Thieman, M.A.Palladino. Çev. Ed. M. Tekeoğlu, “Biyoteknolojiye Giriş”, Palme Yayıncılık Arda, M., Biyoteknoloji, KÜKEM Derneği Bilimsel Yayınları, Ankara, 1994. |
| **Necessary Course Material** | Projection, computer. |

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| **Course Schedule** | |
| **1** | Introduction and history of biotechnology |
| **2** | Biotechnology as an interdisciplinary branch of science |
| **3** | Biosystems used in biotechnology and their application areas |
| **4** | Traditional and modern biotechnology |
| **5** | Microbial biotechnology |
| **6** | Medical biotechnology, agricultural biotechnology |
| **7** | Food biotechnology, industrial biotechnology |
| **8** | Mid – term exam |
| **9** | Marine biotechnology, bionanotechnology |
| **10** | Purple biotechnology (patents, inventions), bioinformatics, bioterrorism |
| **11** | Genetic engineering and transgenic organisms, recombinant DNA technology, gene therapy and stem cells |
| **12** | Enzyme technology, industrial enzymes, immobilized enzymes |
| **13** | Environmental biotechnology applications |
| **14** | Biosorption, biodegradation, bioaugmentation, bioremediation, biomining, purification technologies |
| **15** | Biotechnology regulations, effects of biotechnology on public life and ethical issues |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 1 | 2 | 2 |
| Studying for Quiz Exam | 1 | 20 | 20 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 25 | 25 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 25 | 25 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 5 |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| --- | --- | --- | --- | --- |
| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar Aytar Çelik |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**11.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Project | 241214020 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 4 | 2 | 4 | 4 | 5 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 4 |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | Redirect students individual and group studies. To learn project components and process. To develop researching, writing, presenting activities. |
| **Short Course Content** | Project researching, designing, developing, presenting |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Learning individual and group studies, | 4 | 6, 13, 14, 15 | E |
| **2** | Project management | 2, 3, 5, 6 | 6, 13, 14, 15 | E |
| **3** | Developing research, design, presentation activities | 2, 3, 5, 6, 10, 11 | 6, 13, 14, 15 | E |

|  |  |
| --- | --- |
| **Main Textbook** | Lecture notes |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | Project consept |
| **2** | Project cycle |
| **3** | Project cycle |
| **4** | Research techniques |
| **5** | Project writing |
| **6** | Project writing |
| **7** | Project writing |
| **8** | Mid – term exam |
| **9** | Project writing |
| **10** | Project writing |
| **11** | Project writing |
| **12** | Project writing |
| **13** | Project writing |
| **14** | Project writing |
| **15** | Project writing |
| **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,….) | 14 | 4 | 56 |
| Homework |  |  |  |
| Quiz Exam |  |  |  |
| Studying for Quiz Exam |  |  |  |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) | 2 | 30 | 60 |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam |  |  |  |
| Studying for Mid-Term Exam |  |  |  |
| Final Exam |  |  |  |
| Studying for Final Exam |  |  |  |
|  | **Total workload** | | **144** |
|  | **Total workload / 30** | | **4,8** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Project | 40 |
| Project | 60 |
|  |  |
|  |  |
| **Final Exam** |  |
| **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** | Acquires basic theoretical and practical knowledge in science and professional fields and has the ability to use this knowledge to produce solutions. |  |
| **2** | Defines, collects and effectively uses the data required to solve defined problems in the field of Environmental Protection and Control, and can use the necessary manual and mental skills in practical applications. | 5 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program, acquires the ability to seek solutions, and can interpret and evaluate the analysis results obtained. | 5 |
| **4** | Gains the ability to work in intra-disciplinary and inter-disciplinary teams and communicate effectively, and takes responsibility as a team member to solve unforeseen and complex problems encountered in applications related to his/her field. | 5 |
| **5** | Gains sensitivity to global and local environmental problems. | 4 |
| **6** | Can select and effectively use modern techniques, tools and information technologies required for applications related to environmental protection. | 5 |
| **7** | Have knowledge and awareness of social responsibility, ethical values ​​and social security rights on issues related to the Environmental Protection and Control Program. |  |
| **8** | Gains application skills by examining the relevant processes in the industry and service sectors on site. |  |
| **9** | Learns about the universal and societal effects of technical applications on health, environment and safety, as well as contemporary problems, and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 5 |
| **11** | Gains awareness of the necessity of lifelong learning. | 5 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar AYTAR ÇELİK | Assoc. Prof. Dr. Esengül KÖSE | Assoc. Prof. Dr. KARAKEHYA | Assist. Prof. Dr.  Burcu SEZGİN |
| **Signature(s)** |  |  |  |  |

**Date:**04.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Internship | 241214017 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 4 | 0 | 2 | 0 | 5 |

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

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Compulsory |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | It is about gaining professional experience by applying the theoretical and practical knowledge gained by the student in the relevant industry, business or government institutions. |
| **Short Course Content** | It includes 30 working days of internship in sectors serving in the field of Environmental Protection and Control. |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Gaining professional experience and skills by using the theoretical and practical knowledge acquired | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 | 6, 15 | E |
| **2** | Ability to share knowledge, skills and competencies as well as gaining responsibility awareness individually or within a team | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 | 6, 15 | E |

|  |  |
| --- | --- |
| **Main Textbook** | Related web pages, documents, reports of the internship company. |
| **Supporting References** | Books, specifications, regulations, standards, guides, websites about the internship field. |
| **Necessary Course Material** | Tools and equipment available in the internship company. |

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| --- | --- |
| **Course Schedule** | |
| **1** | Internship |
| **2** | Internship |
| **3** | Internship |
| **4** | Internship |
| **5** | Internship |
| **6** | Internship |
| **7** | Internship |
| **8** | Mid – term exam |
| **9** | Internship |
| **10** | Internship |
| **11** | Internship |
| **12** | Internship |
| **13** | Internship |
| **14** | Internship |
| **15** | Internship |
| **16,17** | Final Exam |

|  |  |  |  |
| --- | --- | --- | --- |
| **Calculation of Course Workload** | | | |
| **Activities** | **Number** | **Time (Hour)** | **Total Workload (Hour)** |
| Course Time (number of course hours per week) |  |  |  |
| Classroom Studying Time (review, reinforcing, prestudy,….) |  |  |  |
| Homework |  |  |  |
| 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) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam |  |  |  |
| Studying for Mid-Term Exam |  |  |  |
| Final Exam |  |  |  |
| Studying for Final Exam |  |  |  |
|  | **Total workload** | |  |
|  | **Total workload / 30** | |  |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term |  |
| Quiz |  |
| Homework |  |
|  |  |
| **Final Exam** |  |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 5 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 5 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 4 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 5 |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 5 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 3 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. | 5 |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 3 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains the necessity and awareness of lifelong learning. | 4 |

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| --- | --- | --- | --- | --- |
| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar AYTAR ÇELİK | Assoc. Prof. Dr.  Esengül KÖSE | Assoc. Prof. Dr.  Naile KARAKEHYA | Assist. Prof. Dr.  Burcu SEZGİN |
| **Signature(s)** |  |  |  |  |

**Date:**04.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Limnology | 241214021 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 3 | 3 | 0 | 3 | 5 |

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

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The aim of this course is to; recognizing the physical, chemical and biological properties of freshwater, to be able to compare aquatic ecosystems with different characteristics; To enable them to apply and interpret limnological research methods. |
| **Short Course Content** | Within the scope of this course, subjects related to sampling in freshwater ecosystem research, examining living things living in different aquatic environments will be covered. |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To provide information about limnology science | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **2** | To recognize physical, chemical and biological fresh water quality parameters | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **3** | To provide ability to design a hydrobiological study | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **4** | To be able to define inland water ecosystems as a living environment | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **5** | To be informed about conservation researchers of freshwaters biodiversity | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **6** | To understand the methods of aquatic ecosystems quality analysis | 1,2,3,5,6 | 1, 2, 5 | A, B, D |

|  |  |
| --- | --- |
| **Main Textbook** | Limnoloji: Tanyolaç, J, 2012; Hatipoğlu Yayınevi Limnoloji: Göl ve Nehir Ekosistemleri; Wetzel G. R. 2017; Çeviri Editörü: Mehmet Borga Ergönül; Nobel Akademik Yayıncılık , 508 s. |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer |

|  |  |
| --- | --- |
| **Course Schedule** | |
| **1** | The concept and history of limnology science |
| **2** | Classification of fresh waters |
| **3** | Physical, chemical and biological properties of lentic ecosystems |
| **4** | Ecological regions in lentic ecosystems |
| **5** | Physical, chemical and biological properties of lotic ecosystems |
| **6** | Ecological regions in lotic ecosystems |
| **7** | Organisms of lotic and lentic ecosystems and their morphological features and adaptations |
| **8** | Mid-Term Exam |
| **9** | Energy and productivity in inland waters |
| **10** | Energy and productivity in inland waters |
| **11** | Pollution in inland waters: Eutrophication |
| **12** | Pollution in inland waters: Chemical polluting factors and effects |
| **13** | Limnological research methods |
| **14** | Limnological applications |
| **15** | Limnological applications |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 3 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 4 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 5 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 3 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Esengül KÖSE |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Biological Control | 241214022 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 4 | 3 | 0 | 3 | 5 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To explain biological control methods and related terms, to emphasize the importance of biological control in the detection of diseases occurring in the ecosystem and control of related pests and to introduce biological control factors. |
| **Short Course Content** | Importance of biological and ecosystem diversity, Definition of biological control, Recognition of organisms used in biological control, control methods. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To learn the importance of biodiversity | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **2** | To comprehend the scope of biological control | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **3** | To learn the basic methods of combating pests | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **4** | To learn the advantages and disadvantages of biological control | 1,2,3,5,6 | 1, 2, 5 | A, B, D |
| **5** | To learn the living groups used against pests. | 1,2,3,5,6 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Bellows, T. S. and Fisher, T. W., 1999. Handbook of Biological Control. Principles and Applications of Biological Control. Academic Press. UK |
| **Supporting References** | Hajek, A.E. 2004. Natural Enemies: An Introduction to Biological Control . Cambridge University Press394 s. |
| **Necessary Course Material** | Projection, computer. |

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| **Course Schedule** | |
| **1** | Definition of Biodiversity and ecosystems |
| **2** | Definition of Biological control |
| **3** | Comparison of biological control and chemical control |
| **4** | Natural enemy factors in biological control |
| **5** | Methods of biological control |
| **6** | Groups used in biological control (Vertebrates) |
| **7** | Groups used in biological control (Invertebrates) |
| **8** | Mid – term exam |
| **9** | Groups used in biological control (Invertebrates) |
| **10** | Groups used in biological control (Microorganisms) |
| **11** | Groups used in biological control (Potential groups) |
| **12** | Development of biological control methods |
| **13** | Example of field controls |
| **14** | Production of groups used in biological control |
| **15** | Production of groups used in biological 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 | 3 | 42 |
| Classroom Studying Time (review, reinforcing, prestudy,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 3 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 3 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 4 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 5 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar Aytar Çelik |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**12.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Evaluation of Water Legislation | 241214023 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 4 | 3 | 0 | 3 | 5 |

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** |  |
| **Objectives of the Course** | To evaluation of drinking and surface water quality criterias in Türkiye and in the world |
| **Short Course Content** | The evaluation of national and international water quality legislations |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To provide information about water resources, | 2,3,4,5 | 1, 2, 5 | A, B, D |
| **2** | The define of physical, chemical and biological water quality parameters | 2,3,4,5 | 1, 2, 5 | A, B, D |
| **3** | The evaluation of national and international water quality legislations | 2,3,4,5 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Management Regulation of Surface Quality , 2012, Official Journal, The Ministry of Forest and Water Management  Guidelines for Drinking-water Quality, WHO, 2008  National Recommended Water Quality Criteria:2002, EPA  Regulation on Water Intended for Human Consumption, TS 266, 2005, 17 February 2005, Official Gazette of the Republic of Turkey 25730.  On the quality of water intended for human consumption COUNCIL DIRECTIVE 98/83/EC, Official Journal of the European Communities |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer |

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| **Course Schedule** | |
| **1** | Drinking, utilization and surface water sources |
| **2** | The basic definitions in water legislations |
| **3** | The idenfication of national and international water quality legislations in Turkey and world |
| **4** | [Guidelines **f**or Drinking-water Quality- World Health Organization](http://www.google.com.tr/url?sa=t&rct=j&q=assessment%20of%20water%20quality%20regulations%20set%20by%20the%20european%20commission%20for%20human%20consumption&source=web&cd=3&cad=rja&ved=0CDsQFjAC&url=http%3A%2F%2Fwww.who.int%2Fwater_sanitation_health%2Fdwq%2Ffulltext.pdf&ei=TAPDUdWUCoq_PIn5gaAD&usg=AFQjCNGSwMidXk9cdbBN_wn9eXHVhGWsaQ&bvm=bv.48175248,d.ZWU) |
| **5** | Regulation Concerning Water Intended for Human Consumption subject, scope and evaluation |
| **6** | The Regulation of surface water quality for Türkiye |
| **7** | The Regulation of surface water quality for Türkiye |
| **8** | Mid-Term Exam |
| **9** | Water Pollution Control Regulation Sampling and Analysis Methods of Communication |
| **10** | Water Pollution Control Regulation Sampling and Analysis Methods of Communication |
| **11** | Practice-Considering the water sample in terms of evaluated parameters and related procedures |
| **12** | Practice-Considering the water sample in terms of evaluated parameters and related procedures |
| **13** | Practice-Presentations |
| **14** | Practice-Presentations |
| **15** | Practice-Presentations |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 3 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 4 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 2 |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Esengül KÖSE |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Environment and Food | 241214024 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 4 | 3 | 0 | 3 | 5 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | To comprehend the importance of relation between environment and food, to provide information about transition of pollutants to food. |
| **Short Course Content** | The importance of relation between environment and food, Transition of pollutants to food chain, Effects of water pollution on food, effects of soil pollution on food, effects of air pollution on food, effects of radioactive pollution on food, effects of heavy metals on food, effects of persistent organic pollutants on food, effects of pesticides on food, mycotoxins, effects of food pollution on health, ellimination of pollutants from food. |

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| --- | --- | --- | --- | --- |
| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To provide information about transition of pollutants to food chain. | 1, 2, 3, 4, 5, 6, 7, 9, 10, 11 | 1, 2, 5 | A, B, D |
| **2** | To provide information about effects of environmental pollutants on food | 1, 2, 3, 4, 5, 6, 7, 9, 10, 11 | 1, 2, 5 | A, B, D |
| **3** | To provide information about effects of environmental pollutants on health | 1, 2, 3, 4, 5, 6, 7, 9, 10, 11 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Gıda Kalite Kontrolünün Esasları ve Gıda Güvenliği Yönetim Sistemleri, F.Başoğlu, Dora Yayıncılık. |
| **Supporting References** | 1. Gıda Güvenliği ve Gıda Mevzuatı, N. Artık, N. Şanlıer, A.C. Sezgin, Detay Yayıncılık.  2. Gıda Güvenliği, S.Erdoğan, Hayat Yayınları. |
| **Necessary Course Material** | Projection, computer. |

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| **Course Schedule** | |
| **1** | The importance of relation between environment and food |
| **2** | The importance of relation between environment and food |
| **3** | Transition of pollutants to food chain |
| **4** | Effects of water pollution on food |
| **5** | Effects of soil pollution on food |
| **6** | Effects of air pollution on food |
| **7** | Effects of radioactive pollution on food |
| **8** | Mid – term exam |
| **9** | Effects of heavy metals on food |
| **10** | Effects of persistent organic pollutants on food |
| **11** | Effects of pesticides on food |
| **12** | Mycotoxins |
| **13** | Effects of food pollution on health |
| **14** | Ellimination of pollutants from food |
| **15** | Ellimination of pollutants from food |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 3 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 3 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 3 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 3 |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 4 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 5 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains the necessity and awareness of lifelong learning. | 3 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assist. Prof. Dr. Burcu SEZGİN |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Noise Pollution and Control | 241214025 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 4 | 3 | 0 | 3 | 5 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | Having some knowledge about noise pollution and its environmental impact, discussing the precautions to be taken against to noise pollution. |
| **Short Course Content** | Sound sources and their properties, noise propagation, measurement techniques, noise standards, environmental impact of noise, noise control, prevention of industrial noise, traffic noise control, prevention of noise in buildings. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To have information about noise pollution | 1, 2, 3, 4, 5, 6, 7, 9, 10, 11 | 1, 2, 5 | A, B, D |
| **2** | To have information about combating noise pollution | 1, 2, 3, 4, 5, 6, 7, 9, 10, 11 | 1, 2, 5 | A, B, D |

|  |  |
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| **Main Textbook** | Gürültü Azaltım Önlemleri El Kitabı, Çevre ve Orman Bakanlığı Yayınları. |
| **Supporting References** | 1. Çevre Mühendisliğine Giriş, İ. Toröz, Nobel Yayınevi.  2. Çevre Gürültüsü ve Kontrolü El kitabı, S. Kurra, Çevre ve Orman Bakanlığı Bakanlığı Yayınları. |
| **Necessary Course Material** | Projection, computer. |

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| **Course Schedule** | |
| **1** | Sound Sources and Their Properties |
| **2** | Sound Sources and Their Properties |
| **3** | Noise Propagation |
| **4** | Noise Measurement Techniques |
| **5** | Noise Standards |
| **6** | Environmental Impact of Noise |
| **7** | Noise Control |
| **8** | Mid – term exam |
| **9** | Prevention of Industrial Noise |
| **10** | Prevention of Industrial Noise |
| **11** | Traffic Noise Control |
| **12** | Traffic Noise Control |
| **13** | Traffic Noise Control |
| **14** | Prevention of Noise in Buildings |
| **15** | Prevention of Noise in Buildings |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 4 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 4 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 3 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. | 3 |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 3 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 3 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 3 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 3 |
| **11** | Gains the necessity and awareness of lifelong learning. | 3 |

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| --- | --- | --- | --- | --- |
| **LECTURER(S)** | | | | |
| **Prepared by** | Assist. Prof. Dr. Burcu SEZGİN |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Water Pollution and Control | 241214026 |

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| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 4 | 3 | 0 | 3 | 5 |

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

|  |  |
| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The purpose of the course is to acquire knowledge on industrial, domestic and agricultural pollutants and wastewater treatment methods. |
| **Short Course Content** | Pollutant parameters in waters, measurement of the pollution, domestic waste waters, industrial waste waters, mechanical treatment methods, chemical treatment methods, biological treatment methods, advanced treatment methods, natural treatment methods |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To provide information about pollutant parameters in waters, | 1,2,3,5,6,10 | 1, 2, 5 | A, B, D |
| **2** | To understand the concepts of domestic and industrial wastewater | 1,2,3,5,6,10 | 1, 2, 5 | A, B, D |
| **3** | To understand mechanical, chemical, biological, advanced and natural treatment methods | 1,2,3,5,6,10 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Egemen, Ö. Çevre ve Su Kirliliği, 2006, Ege Üniversitesi Yayınevi  Çınar, Ö. Çevre Kirliliği ve Kontrolü. 2008, Nobel Yayınevi.  Yalçın, H. Ve Gürü, M. Su Teknolojisi, 2010. Palme Yayıncılık  Samsunlu, A. Atık Suların Arıtılması, 20111. Birsen Yayınevi |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer |

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| --- | --- |
| **Course Schedule** | |
| **1** | Definition of water pollution and sources of water pollution |
| **2** | Water water quality parameters (physical, chemical and biological) of surface water and ground |
| **3** | River nad Lake polution |
| **4** | Marine pollution |
| **5** | Sediment quality in surface water systems |
| **6** | Eutrophication |
| **7** | Research techniques in aquatic ecosystems |
| **8** | Mid-Term Exam |
| **9** | Ground water pollution |
| **10** | Pesticide and heavy metal pollution in water systems |
| **11** | Properties of Wastewater |
| **12** | Physical Methods in Wastewater Treatment |
| **13** | Chemical Methods in Wastewater Treatment |
| **14** | Biological Methods in Wastewater Treatment |
| **15** | Phytoremediation Technique |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 4 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. | 4 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. | 5 |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 4 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. | 4 |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. |  |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. |  |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Esengül KÖSE |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Environmental Technologies | 241214027 |

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| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 4 | 3 | 0 | 3 | 5 |

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| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The main aim of this lecture is to cover water, air and soil pollution sources and to give up to date pollution prevention, reduction and removal technologies. |
| **Short Course Content** | Types of dust catcher, gas treatment technology, wastewater treatment technology, advanced water treatment techniques, fuel technology, phytoremediation, biofuels |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Recognize environmental pollution reasons | 2, 3, 5, 9 | 1, 2, 5 | A, B, D |
| **2** | Get to know pollution prevention, reduction and removal techniques | 2, 3, 6, 10, 11 | 1, 2, 5 | A, B, D |
| **3** | Gain conscious about environment | 5 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Environmental Technologies Lecture Notes |
| **Supporting References** | 1. Çevre Mühendisliğine Giriş (2011), P.A. Vesilind, S.M. Morgan, L.G. Heine, Tercüme İ. Töröz, Nobel yayınevi. |
| **Necessary Course Material** | Projection, computer. |

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| **Course Schedule** | |
| **1** | Introduction |
| **2** | Air pollution technology |
| **3** | Dust holder types |
| **4** | Gas treatment technology |
| **5** | Phytoremediation |
| **6** | Wastewater treatment technology |
| **7** | Physical treatment |
| **8** | Mid – term exam |
| **9** | Biological treatment; fixed film systems |
| **10** | Biological treatment; suspended growing systems |
| **11** | Biological treatment; sludge treatment and disposal |
| **12** | Seawater treatment systems |
| **13** | Chemical wastewater treatment methods |
| **14** | Advanced water treatment techniques |
| **15** | Fuel technology, biofuels |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and practical knowledge in science and professional fields and has the ability to use this knowledge to produce solutions. |  |
| **2** | Defines, collects and effectively uses the data required to solve defined problems in the field of Environmental Protection and Control, and can use the necessary manual and mental skills in practical applications. | 4 |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program, acquires the ability to seek solutions, and can interpret and evaluate the analysis results obtained. | 4 |
| **4** | Gains the ability to work in intra-disciplinary and inter-disciplinary teams and communicate effectively, and takes responsibility as a team member to solve unforeseen and complex problems encountered in applications related to his/her field. |  |
| **5** | Gains sensitivity to global and local environmental problems. | 4 |
| **6** | Can select and effectively use modern techniques, tools and information technologies required for applications related to environmental protection. | 5 |
| **7** | Have knowledge and awareness of social responsibility, ethical values ​​and social security rights on issues related to the Environmental Protection and Control Program. |  |
| **8** | Gains application skills by examining the relevant processes in the industry and service sectors on site. |  |
| **9** | Learns about the universal and societal effects of technical applications on health, environment and safety, as well as contemporary problems, and becomes aware of the legal consequences of problem-oriented solutions. | 4 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains awareness of the necessity of lifelong learning. | 4 |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar Aytar Çelik |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**12.07.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

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| --- | --- |
| **Course Name** | **Course Code** |
| Environment Law | 241214028 |

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| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 4 | 3 | 0 | 3 | 5 |

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

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| --- | --- | --- |
| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| --- | --- |
| **Prerequisite(s) if any** |  |
| **Objectives of the Course** | Environment-related institutions and to have knowledge about legal ways to protect the environment |
| **Short Course Content** | The scope of environmental law and laws and regulations on the protection of the environment from legal remedies. |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | To be able to learn environmental law concepts | 1,5,7,9,10 | 1, 2, 5 | A, B, D |
| **2** | To be able to explain the general principles of environmental law | 1,5,7,9,10 | 1, 2, 5 | A, B, D |
| **3** | To have knowledge about Environment Law | 1,5,7,9,10 | 1, 2, 5 | A, B, D |

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| --- | --- |
| **Main Textbook** | Üçışık, G. Ve Üçışık, F. (2012) Çevre Hukuku. Ötüken Neşriyat A.Ş.,  Turgut, Y.N. Çevre Politikası ve Hukuku, (2012), İmaj Yayınevi  Deryal, Y. Hukukun Temel Kavramları (Hukuka Giriş), (2006), Derya Kitabevi  Işık, N. ve Dündar, M. (2014) 100 soruda 2872 Sayılı Çevre Kanunun Uyarınca Kesilen İdari Para Cezaları, Seçkin Yayıncılık |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer |

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| --- | --- |
| **Course Schedule** | |
| **1** | Definitions related to law |
| **2** | Environmental problematic |
| **3** | Basic concepts, principles, of Environmental Law |
| **4** | Principles of Environmental Law |
| **5** | Human Rights and The Environment |
| **6** | Environmental Authorized Institutions and Organizations: Ministry of Environment and Urban Planning (Turkey) |
| **7** | Environmental Authorized Institutions and Organizations: Ministry of Forest and Water Management (Turkey) |
| **8** | Mid-Term Exam |
| **9** | Other institutions and organizations authorized in environmental |
| **10** | Environmental Law No. 2872 and and Some Regulations |
| **11** | Environmental Law No. 2872 and and Some Regulations |
| **12** | Environmental Law No. 2872 and and Some Regulations |
| **13** | Environmental Law No. 2872 and and Some Regulations |
| **14** | [International environmental agreements](http://www.ym.fi/en-US/International_cooperation/International_environmental_agreements) |
| **15** | [International environmental agreements](http://www.ym.fi/en-US/International_cooperation/International_environmental_agreements) |
| **16,17** | Final Exam |

|  |  |  |  |
| --- | --- | --- | --- |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| Oral exam |  |  |  |
| Studying for Oral Exam |  |  |  |
| Report (Preparation and presentation time included) |  |  |  |
| Project (Preparation and presentation time included) |  |  |  |
| Presentation (Preparation time included) |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Mid-Term Exam | 1 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

|  |  |
| --- | --- |
| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
|  |  |
| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. | 4 |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 5 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 4 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 5 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. | 4 |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| --- | --- | --- | --- | --- |
| **LECTURER(S)** | | | | |
| **Prepared by** | Assoc. Prof. Dr. Esengül KÖSE |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**26.06.2024

**ESOGU**

**ENVIRONMENTAL PROTECTION TECHNOLOGIES DEPARTMENT**

**ENVIRONMENTAL PROTECTION AND CONTROL PROGRAMME**

**COURSE INFORMATION FORM**

|  |  |
| --- | --- |
| **Course Name** | **Course Code** |
| Biosafety and Environment | 241214029 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Number of Course Hours per Week** | | **Credit** | **ECTS** |
| **Theory** | **Practice** |
| 4 | 3 | 0 | 3 | 5 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Category (Credit)** | | | | |
| **Basic Sciences** | **Engineering Sciences** | **Design** | **General Education** | **Social** |
|  | 3 |  |  |  |

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| **Course Language** | **Course Level** | **Course Type** |
| Turkish | Associate degree | Elective |

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| **Prerequisite(s) if any** | Not available |
| **Objectives of the Course** | The main purpose of this course is to teach chemical, biological, radiological and nuclear (CBRN) threats and defense and security practices in CBRN threats, to teach genetically modified organisms and risk assessment processes, to teach biosecurity classes and precautions, and to teach environmental management in case of threats that may arise regarding biosecurity. |
| **Short Course Content** | Genetically modified organisms (GMO) and risk assessment processes, biosafety concept, biosafety measures and cabinets, biosafety classes, biosecurity concept |

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| **Learning Outcomes of the Course** | | **Contributed PO(s)** | **Teaching Methods \*** | **Measuring Methods \*\*** |
| **1** | Ability to define the concept of GMO and understand the production techniques of GMOs | 5, 7, 9 | 1, 2, 5 | A, B, D |
| **2** | Ability to perceive risk assessment processes regarding GMOs and list the advantages and disadvantages of GMOs | 5, 7, 9 | 1, 2, 5 | A, B, D |
| **3** | Understanding the phenomenon of biosecurity | 5, 7, 9 | 1, 2, 5 | A, B, D |
| **4** | Understanding the reasons for national and international legal regulations regarding GMOs | 5, 7, 9 | 1, 2, 5 | A, B, D |
| **5** | Understanding biosafety classes | 5, 7, 9 | 1, 2, 5 | A, B, D |
| **6** | Understanding CBRN threats | 5, 7, 9 | 1, 2, 5 | A, B, D |
| **7** | Planning environmental management in CBRN threats | 5, 7, 9 | 1, 2, 5 | A, B, D |

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| **Main Textbook** | Biosafety and Environment Lecture Notes |
| **Supporting References** |  |
| **Necessary Course Material** | Projection, computer. |

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| **Course Schedule** | |
| **1** | Introduction to the concept of biosecurity |
| **2** | GMO concept, definition and historical process |
| **3** | Genetic transfer techniques and model application |
| **4** | Genetically modified plants, agriculture and food practices |
| **5** | Genetically modified animals and their application areas |
| **6** | Genetically modified microorganisms and their application areas |
| **7** | Risk assessment processes of GM production and applications |
| **8** | Mid – term exam |
| **9** | Advantages and disadvantages of GM technology |
| **10** | National and international regulations on biosafety |
| **11** | Biosafety classes |
| **12** | Introduction to chemical, biological, radiological and nuclear (CBRN) threats |
| **13** | Detection, Diagnosis and Monitoring of CBRN War Agents |
| **14** | CBRN Defense and security, effects on the body, relationship with public health |
| **15** | Environmental management in case of CBRN threat |
| **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,….) |  |  |  |
| Homework | 1 | 20 | 20 |
| Quiz Exam | 2 | 1 | 2 |
| Studying for Quiz Exam | 2 | 15 | 30 |
| 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 | 1 | 1 |
| Studying for Mid-Term Exam | 1 | 20 | 20 |
| Final Exam | 1 | 1 | 1 |
| Studying for Final Exam | 1 | 20 | 20 |
|  | **Total workload** | | **136** |
|  | **Total workload / 30** | | **4,53** |
|  | **Course ECTS Credit** | | **5** |

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| **Evaluation** | |
| **Activity Type** | **%** |
| Mid-term | 30 |
| Quiz | 20 |
| Homework | 10 |
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| **Final Exam** | 40 |
| **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** | Acquires basic theoretical and applied knowledge in science and professional fields and can use this knowledge in producing solutions. |  |
| **2** | Defines, collects and effectively uses the data required for the solution of defined problems in the field of Environmental Protection and Control, can use the necessary manual and mental skills in practical applications. |  |
| **3** | Identifies problems related to unforeseen situations in studies related to the Environmental Protection and Control Program and gains the ability to seek solutions and can interpret and evaluate the obtained analysis results. |  |
| **4** | Acquires the ability to work in intra-disciplinary and inter-disciplinary teams and establish effective communication, takes responsibility as a team member to solve unforeseen complex problems encountered in applications related to his/her field. |  |
| **5** | Acquires sensitivity to global and local environmental problems. | 5 |
| **6** | Acquires the ability to select and effectively use modern techniques, tools and information technologies required for applications related to the field of environmental protection. |  |
| **7** | Acquires the knowledge and awareness of social responsibility, ethical values and social security rights in issues related to the Environmental Protection and Control Program. | 3 |
| **8** | Acquires the ability to apply by examining the relevant processes in the industrial and service sectors on site. |  |
| **9** | Learns about the effects of technical applications on health, environment and security in universal and social dimensions and the problems of the age and becomes aware of the legal consequences of problem-oriented solutions. | 5 |
| **10** | Gains awareness about entrepreneurship, innovation and sustainable development in his/her field. |  |
| **11** | Gains the necessity and awareness of lifelong learning. |  |

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| **LECTURER(S)** | | | | |
| **Prepared by** | Prof. Dr. Pınar Aytar Çelik |  |  |  |
| **Signature(s)** |  |  |  |  |

**Date:**12.07.2024