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| **COURSE DETAILS** | |
| **Course Name** | Corrosion and Corrosion Protection Techniques |

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| **Language of Instruction** | Turkish |

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| **Level of Instruction** | Associate | Undergraduate | MA(X) | Ph.D. () |

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| **Education System** | | |
| Formal Education (X) | Distance Education () | Other |

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| **Type of Course** | | **Course Area Code** | **Course Optical Code** |
| Comp () | Elective (x) |  |  |

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| **Theory** | **Practice Time** | **Total Hours** | **Semester** | **National Credit** | **ECTS Credits** |
| 3 | 0 | 3 | Spring | 3 | 6 |

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| **Course Aim** | |  |  | | --- | --- | |  | Graduate students to have a sufficient level of knowledge about ODP, analysis and interpretation of deep-sea sediments drilling cores | |

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| **Course Content** | |  |  | | --- | --- | |  | Describing data and samples of sediment, rock, liquid and living organisms under the sea floor, Examining the records of the climatic, biological, chemical and geological history of the Earth that has been buried under the ocean floor for millions years, to better understand the changes in ocean levels, deep ocean drilling, direct sea bottom analysis, plate tectonics theory, and ODP records will be studied. | |

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| **Prerequisites** | • Introduction to Ocean drillin program. Learning the history of ODP.  Gaining information regarding the energy sector within Turkey and abroad.  • Gaining information and experience regarding the origin, composition, rock and fluid properties of petroleum and natural gas reservoirs.  • Gaining information regarding oil and natural gas drilling, well completion works, production, and reservoir calculations.  • Gaining information regarding the transportation, stockage, and refining of the petroleum and natural gas commodities. |

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| **Course Instructor** | Assistant Professor Derya SİNANOĞLU |

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| **Assistant Instructor** |  |

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| **Text Book / Recommended Reading** | * Becker, K., 2014. Chapter 1 - Major Scientific Achievements of the Integrated Ocean Drilling Program: Overview and Highlights, Developments in Marine Geology Volume 7, 2014, Pages 1-36 * Depending on the content of the course and the topics selected. |

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| **Grading Evaluation System** | | |
| (X) Direct Conversion System |  | () Curve |
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|  | **Tools** | **Number** | **Rate** |
|  | Attendance and Participation | 15 | 5 |
|  | Research homework | 1 | 15 |
|  | Quiz | 4 | 16 |
| **Measurement and Evaluation** | Presentations | 1 | 10 |
|  | Literature | 1 | 4 |
|  | Semester Exam | 1 | 50 |
|  | **Total** |  | **100%** |

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| **Subjects by Week** | | |
| **Week** | **Topics** | **Teaching Methods** |
| 1 | Introduction to Petroleum Engineering | Lecture, discussion, sampling. |
| 2 | Origin of Hydrocarbons and classification | Lecture, discussion, sampling. |
| 3 | Generation of hydrocarbons, deposition (source rock, migration, trap) | Lecture, discussion, sampling. |
| 4 | Reservoir Rock Properties | Lecture, discussion, sampling. |
| 5 | Reservoir Fluid Properties | Lecture, discussion, sampling. |
| 6 | Petroleum and Natural Gas Engineering Profession - Drilling | Lecture, discussion, sampling. |
| 7 | Petroleum and Natural Gas Engineering Profession – Ocean Drilling | Lecture, discussion, sampling. |
| 8 | Petroleum and Natural Gas Engineering Profession - Formation Evaluation | Lecture, discussion, sampling. |
| 9 | Plate Tectonics Theory | Lecture, discussion, sampling. |
| 10 | Offshore analyzes | Lecture, discussion, sampling. |
| 11 | ODP Records | Lecture, discussion, sampling. |
| 12 | Data Processing | Lecture, discussion, sampling. |
| 13 | Environmental issues, health and safety - Petroleum Economics | Lecture, discussion, sampling. |
| 14. | Environmental issues, health and safety - Petroleum Economics | Lecture, discussion, sampling. |
| 15 | General Evaluation | Lecture, discussion, sampling. |
| 16 | General Evaluation | Lecture, discussion, sampling. |
| 17 | Final | Written exam |

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| **Program Outcomes** | | 01 | 02 | | 03 | 04 |
| PO 01 | Reaching sufficient level of knowledge about ODP, a new drilling sector in our country | 5 | 4 | | 4 | 5 |
| PO 02 | Analysis and interpretation of deep sea sediment cores | 4 | 5 | | 5 | 4 |
| PO 03 | Understand changes in ocean levels | 5 | 4 | | 4 | 5 |
| PO 04 | Understand plate tectonics theory | 5 | 5 | | 5 | 5 |
| PO 05 | ODP records | 5 | 5 | | 5 | 5 |
| PO 06 | Understand the records of climatic, biological, chemical and geological past | 4 | 5 | | 5 | 4 |
| PO 07 | Sea bottom Analysis | 5 | 5 | | 5 | 5 |

\* 1: Very Low 2: Low 3: Medium 4: High 5: Very high

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| **Student workload / ECTS account** | | | | |
| **Activities** | **Number** | **Preparation** | **Duration of Activity** | **Total Workload** |
| Hours for off the classroom studies | 15 | - | 4 | 60 |
| Assignments | 10 | - | 5 | 50 |
| Presentation | 4 | - | 10 | 40 |
| Mid-terms | 0 | - | 0 | 0 |
| Projects | 0 | - | 0 | 0 |
| Final Examination | 0 | - | 0 | 0 |
| Hours for off the classroom studies | 1 | - | 30 | 30 |
| Total Workload (Hour) |  |  |  | 180 |
| Roll [Total Workload (hours) / week work load (30)] = ECTS Credit | | | | 180/30=6 |