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| **Identification** | **Course** | PETE 202 Introduction to Petroleum Engineering 6 ECTS |
| | **Department** | Petroleum Engineering |
| | **Program** | Undergraduate |
| | **Term** | Fall 2025 |
| | **Instructor** | Gunay Muradova |
| | **E-mail:** | gmuradova9@gmail.com |
| | **Office hours** | |
| **Prerequisites** | None | |
| **Language** | English | |
| **Compulsory/Elective** | Compulsory | |
| **Required textbooks and course materials** | Richard L.Christiansen, John R Fanchi "Introduction to Petroleum Engineering" 2017 | |
| **Course outline** | This course is designed for the Petroleum Students and other Technical Specialties. Course addresses the basic principles of Petroleum Engineering. Some concepts from Reservoir Engineering, Exploration, Drilling and Completion will be covered during the course. Practical exercises on reserve estimation and pore pressure calculations will be addressed. | |
| **Course objectives** | This course is a major subject of Petroleum Engineering. This course is designed for the Petroleum Students and other Technical Specialties. .Some concepts from Reservoir Engineering, Exploration, Drilling and Completion will be covered during the course.<br>**Generic Objective of the Course:**<br>• To equip students with the basic concepts, methods and techniques in petroleum engineering.<br>• To prepare students for the industry environment Specific Objectives of the Course:<br>• To support the students academically, to improve their chance of realizing their potential<br>• To encourage students participation and interaction and fostering atmosphere of tolerance and respect<br>• To develop an understanding of the theory and practice of managerial analysis, and strategic decisions<br>**Assignments/quizzes** - to evaluate the ability of the student to cope with the given material.<br>**Presentation** - to evaluate the students individual presentation skills and ability to work on groups | |
| **Learning outcomes** | By the end of the course the students should be able:<br>- To understand petroleum play<br>- To be familiar with basics of exploration, drilling and completion<br>- To estimate reserves<br>- To understand reservoir engineering concepts | |
| **Teaching methods** | Lecture | x |
| | Group discussion | x |
| | Case studies | x |
| **Grades** | **Evaluation Methods** | Percentage (%) |
| | Midterm Exam | 30 |

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| | Activity | 5 |
| | Quizzes | 15 |
| | Presentation | 10 |
| | Final Exam | 40 |
| | Total | 100 |

**Policy**

- **Preparation for class**

  The structure of this course makes your individual study and preparation outsidethe class extremely important. The lecture material will focus on the major pointsintroduced in the text. Reading the assigned chapters and having some familiarity with them before class will greatly assist your understanding of the lecture. Afterthe lecture, you should study your notes, assigned chapters and get ready for class assignments. Throughout the semester students will also have practical exercises and quizzes.

- **Withdrawal (pass/fail)**

  This course strictly follows grading policy of Graduate School of Science, Art and Technology. Thus, a student is normally expected to achieve a mark of at least 60% to pass. In case of failure, he/she will be required to repeat the course the following term or year.

- **Cheating/plagiarism**

  Cheating or other plagiarism during the Quizzes, Mid-term and Final Examinationswill lead to paper cancellation. In this case, the student will automatically get zero(0) without any considerations.

- **Professional behavior guidelines**

  The students shall behave in the way to create favorable academic and professional environment during the class hours. Unauthorized discussions and unethical behavior are strictly prohibited.

- **Expected behavior**

  Includes attending all class activities; meeting deadlines; observing common courtesies to fellow students, teachers, and staff; being honest; making a diligent effort to learn; and does not engage in any disruptive irresponsible manner. Legitimate collaboration is encouraged but academic collusion or dishonesty will not be tolerated.

- **Class attendance**

  Attendance is required! Please be in class on time. Attendance will be taken at the beginning of each class period. In case you are not present when attendance sheet is passed on, you will be marked absent. If you are late for more than 10 minutes you will not be allowed into the classroom not to cause distraction. You will receive a Dean's warning if you miss more than 3 classes and shall be dismissed from the course if you miss more than 5 classes. You shall receive 5 bonus points at the end of the semester if you attend all classes and follow all course policies and procedures.

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| | ▪ **Class discussion**<br>Feel free to voice your opinions and ask questions anytime during -a class period. Practice your right and freedom to learn. Remember you are here to learn and we are here to teach and that teaching and learning are forever intertwined. You can help me teach you as much as I can help you learn. Be an active participant in the learning process! |

**Tentative Schedule**

| Week | Date/Day | Topics | Textbook/Assignments |
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| **1** | Week 1 | Course Introduction | Page 1-21 |
| **2** | Week 2 | The context of Petroleum Geology | Page 101-116 |
| **3** | Week 3 | Physical and Chemical properties of Petroleum | Page 45-64 |
| **4** | Week 4 | Health Safety and Environment in Oil and gas industry | Page 328-350 |
| **5** | Week 5 | Reservoir rock and its properties: porosity and permeability | Page 67-80 |
| **6** | Week 6 | Field Work | |
| **7** | Week 7 | Methods of Petroleum Exploration | Page 128-130 |
| **8** | Week 8 | Drilling | Page 137-159 |
| **9** | Week 9 | Mid-term Exam | |
| **10** | Week 10 | Cementing | Page 149-153 |
| **11** | Week 11 | Well completion | Page 185-202 |
| **12** | Week 12 | Enhanced of Oil recovery | Page 202-225 |
| **13** | Week 13 | Oil Storage | Page 229-247 |
| **14** | Week 14 | Impact of Mining and Oil Extraction on the Environment | Page 251-268 |
| **15** | Week 15 | Midstream and Downstream Operations | Page 273-294 |
| | | **Final Exam** | |