

<b>Identification</b>	<b>Subject</b>	PETE 318 Well Completion, 6 ECTS	
	<b>Department</b>	Petroleum Engineering	
	<b>Program</b>	Undergraduate	
	<b>Term</b>	Spring, 2023	
	<b>Instructor</b>	Grigorii Penkov	
	<b>E-mail:</b>	gpenkov@khazar.org	
	<b>Phone:</b>	+994 12 421 10 93 (ext. 243)	
	<b>Classroom/hours</b>	TBC	
	<b>Office hours</b>	Monday 10:00-17:00	
<b>Prerequisites</b>	Consent of instructor		
<b>Language</b>	English		
<b>Compulsory/Elective</b>	Required		
<b>Required textbooks and course materials</b>	<ol style="list-style-type: none"> <li>1. Bellarby, Jonathan. <i>Well completion design</i>. Elsevier, 2009.</li> <li>2. <i>Reservoir engineering: Heriot-Watt University, Department of Petroleum Engineering, Edinburgh, UK 2004, 814 p.</i></li> <li>3. <i>Drilling engineering: Heriot-Watt University, Department of Petroleum Engineering, Edinburgh, UK 2004, 645 p.</i></li> <li>4. Wan, Renpu. <i>Advanced well completion engineering</i>. Gulf professional publishing, 2011.</li> <li>5. Chaudhry, Amanat. <i>Oil well testing handbook</i>. Elsevier, 2004.</li> </ol>		
<b>Course outline</b>	The course aims to provide students with a comprehensive understanding of the principles, techniques, and best practices involved in well completion. Through a combination of theoretical learning and hands-on practical exercises, students will gain the necessary knowledge and skills to design, implement, and evaluate well completion operations effectively.		
<b>Course objectives</b>	<p>Course objective is to provide overview of modern Completion engineering industry, skillful understanding of completion operations and overview of production technology.</p> <p>Completion equipment, their purposes, different completion type. Perform basic well completion design and calculations.</p>		
<b>Learning outcomes</b>	<ul style="list-style-type: none"> <li>• To review types of oil and gas well</li> <li>• To cover drilling materials from previous semester</li> <li>• To learn the basic completion equipment</li> <li>• To understand the well performance, tubing string sizing and design</li> <li>• To learn the basic well completion design subjects</li> <li>• To learn completion installation and completion fluids used during the completion operations</li> <li>• To learn production chemistry and basic production related issues such as paraffin, scales, hydrates, corrosion</li> <li>• To learn sand production problems and sand control methods</li> </ul>		
<b>Teaching methods</b>	Lecture		X
	Experiential exercise		X
	Case analysis		X
<b>Evaluation</b>	Methods	Date/deadlines	Percentage (%)
	Midterm Exam		30
	Class Participation		5
	Assignment and quizzes	Week 7,15	15
	Project	1st week of May 2024	10
	Final Exam		40
	Total		100

<p><b>Policy</b></p>	<ul style="list-style-type: none"> <li>• A midterm exam is an exam given near the middle of an academic grading term or near the middle of any given quarter or semester. The purpose of the examination is that students have a better idea of whether they're advancing well in the course.</li> <li>• The student receives 5 bonus points at the end of the semester if they attend all classes and follow all course policies and procedures.</li> <li>• Assessment of the participant's activity in lectures, practical classes, and in the learning process in general.</li> <li>• A quiz is a quick assessment of student knowledge to test a students' level of comprehension briefly regarding course material, providing teachers with insights into student progress and any existing knowledge gaps.</li> <li>• A project is a collaborative activity of students relating to scientific research. The reasons for including projects in the subject course is to show prospective students and research activity on the subject.</li> <li>• A final examination is an examination administered at the end of an academic term, with a set of questions or exercises evaluating the skill or knowledge of students given to students at the end of a course of study.</li> </ul>
	<p><b>Class assignments</b> Class assignments will be provided during class. The contents will be based on the calculation of formation properties etc.</p> <p><b>Project</b> Research skills and the techniques learnt during class assignments and practical exercises will be the tools to complete the projects.</p> <p><b>Quizzes</b> Quizzes will cover the materials studied in previous classes. There will be 2 quizzes during the semester.</p> <p><b>Preparation for class</b> The structure of this course makes your individual study and preparation outside the class extremely important. The lecture material will focus on the major points introduced in the text. Reading the assigned chapters and having some familiarity with them before class will greatly assist your understanding of the lecture.</p> <p><b>Withdrawal (pass/fail)</b> 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.</p> <p><b>Cheating/plagiarism</b> Cheating or other plagiarism during the Quizzes, Mid-term, and Final Examinations will lead to paper cancellation. In this case, the student will automatically get zero (0), without any considerations. After identification of cheating or plagiarism, any chance will not be given for correction and rewriting of the report.</p> <p><b>Professional behavior guidelines</b> The students shall behave in a way to creates favorable academic and professional environment during the class hours. Unauthorized discussions and unethical behavior are strictly prohibited.</p> <p><b>Ethics</b> Students must not be late to class. All mobile phones must be turned off and put away during the class.</p> <p><b>Expected behavior</b> 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.</p> <p><b>Illness</b></p>

		Students with an illness may miss a quiz or presentation. This might be because the student needs to go to the hospital, recover at home, or attend regular medical appointments. In this case, the student must inform the instructor in advance about the illness and must present a document from their doctor. After considering the situation, the instructor may set a new date for the quiz or project presentation. Only one opportunity will be given to the student. The students who do not inform the instructor in advance will not be given a chance to retake the quiz or give a presentation.	
<b>Tentative Schedule</b>			
<b>Week</b>	<b>Date/Day (tentative)</b>	<b>Topics</b>	<b>Textbook/Assignments</b>
1	Week 1	Introduction to well completion	Book 1 Chapter 1
2	Week 2	Oil and gas wells	Lecture notes
3	Week 3	Overview of well performance	Book 1 Chapter 2
4	Week 4	Fluid flow in porous media	Book 2 Chapter 10
5	Week 5	Reservoir completion methods	Book 1 Chapters 1-2
6	Week 6	NOVRUZ HOLIDAY	
7	Week 7	Perforating fluid	Book 4 Chapter 4
8	Week 8	Perforating, perforating interval selection	Book 4 Chapter 5
9	Week 9	<b>Mid-Term Exam</b>	
10	Week 10	Hydraulic fracturing	Lecture notes
11	Week 11	Sand control	Book 1 Chapter 3
12	Week 12	Life of well operations	Lecture notes
13	Week 13	Artificial lift	Lecture notes
14	Week 14	Well intervention techniques	Lecture notes
15	Week 15	Well test	Lecture notes
16	Week 16	Overall revision and preparation for exam	
	<b>TBA</b>	<b>Final Exam</b>	

This syllabus is a guide for the course and any modifications to it will be announced in advance.