



University of
Zagreb



University of Zagreb
FACULTY OF MINING,
GEOLOGY AND PETROLEUM
ENGINEERING



1. GENERAL INFORMATION				
1.1. Course teacher	Tenured Professor Zdenko Krištafor, PhD		1.6. Year of the study	I.
1.2. Name of the course	Offshore activities		1.7. ECTS credits	6
1.3. Associate teachers	-		1.8. Type of instruction (number of hours L + E + S + e-learning)	40L+0E+10S+10e-learning
1.4. Study programme (undergraduate, graduate, integrated)	graduate		1.9. Expected enrolment in the course	30
1.5. Status of the course	<input checked="" type="checkbox"/> mandatory	<input type="checkbox"/> elective	1.10. Level of application of e-learning (level 1, 2, 3), percentage of online instruction (max. 20%)	level 2, 16,67% online
2. COUSE DESCRIPTION				
2.1. Course objectives	The aim of the course is to enable students to appraise the process of making the offshore wells unlike drilling onshore (meaning of the natural environment, ecological requirements, construction norms and activities, legislation). Gaining knowledge about the diversity of offshore structures in accordance with the forces of the natural environment, water depth, technological requirements while drilling wells and setting up the jackets and platforms. Technical characteristics and operational capabilities of platforms and structures for drilling and production of hydrocarbons offshore.			
2.2. Enrolment requirements and/or entry competences required for the course	-			
2.3. Learning outcomes at the level of the programme to which the course contributes	Independently solve complex engineering problems in petroleum engineering and geenergy engineering; Design wellbore for hydrocarbon and geothermal water exploitation; Optimize hydrocarbon and geothermal water production; Assess the risk of accidental situations during various operations in petroleum engineering and geenergy engineering.			
2.4. Expected learning outcomes at the level of the course (3 to 10 learning outcomes)	Compare and select basic technological processes during well drilling on water surfaces; Formulate technical and technological requirements for the selection of facilities for offshore drilling; Compare the basic ways of holding the vessel position on a given location; Distinguish types of production platforms; Recommend how to produce hydrocarbons from the seabed; Compare the basic differences of deep sea production systems; Evaluate technical norms for the use of certain types of drilling rigs as well as legal regulations in the field of maritime activities; Assess the associated risks inherent in offshore activities arising from a mix of simultaneous operations.			
2.5. Course content (syllabus)	Continental shelf; maritime properties and structural characteristics of the vessels for offshore well drilling; Jackets and production platforms, types of platforms; Legislation in the field of offshore; international classification rules (acquiring			

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	<p>certificate); Basics of floating vessel stability; systematization of terms related to stability; Components of the mooring system; basic design of the mooring system according to the shapes and types of platforms; Maritime characteristics and technical characteristics of jack-up drilling rigs; Preloading procedures; Ways to make wellbore from the bottom supported platforms (batch drilling mode); Semisubmersible platforms and drilling ships; differences in relation to other MODU units; Towing; Mooring and dynamic positioning; Spar and tension leg platforms (TLP) for deep sea production; Other subsea production systems; Floating, productions, storage and offloading (FPSO) vessels; Simultaneous offshore operations; Responsibility system; Types of Croatian gas production platforms; Scope of works in offshore, current situation and future works in the Adriatic sea.</p>						
2.6. Format of instruction:	<input checked="" type="checkbox"/> lectures <input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> exercises <input type="checkbox"/> online in entirety <input type="checkbox"/> partial e-learning <input checked="" type="checkbox"/> field work	<input type="checkbox"/> independent assignments <input type="checkbox"/> multimedia and the internet <input type="checkbox"/> laboratory <input type="checkbox"/> work with mentor <input type="checkbox"/> (other)	<p>2.7. Comments:</p> <p>-</p>				
2.8. Student responsibilities	<p>The obligation of the student's attendance at least 80% of lectures and conducted field work.</p>						
2.9. Monitoring student work	Class attendance	YES		Research	NO	Oral exam	YES
	Experimental work		NO	Report	NO	(other)	
	Essay		NO	Seminar paper	YES	(other)	
	Preliminary exam		NO	Practical work	NO	(other)	
	Project		NO	Written exam	NO	ECTS credits (total)	6
2.10. Required literature (available in the library and/or via other media)	Title					Number of copies in the library	Availability via other media
	Noble Denton (1992.): <i>The Marine Operations of Self-elevating Platforms</i> , Aberdeen College of Further Education, School of Science and Technology.					NO	YES
	<i>The Technology of Offshore Drilling, Completion and Production</i> (1976.), The Petroleum Publishing Company, Tulsa, 1976.					YES	NO
	Matanović,D., Gaurina-Medimurec,N., Simon,K. (2014.): <i>Risk Analysis for Prevention of Hazardous Situations in Petroleum and Natural Gas Engineering</i> , IGI Global.					YES	YES
	Atteraas,L., Frydenbo,F., Hattestad,B., Hopen,T. (1980.): <i>Underwater Technology</i> , Pergamon Press, Oxford.					NO	YES
2.11. Optional literature	Graff, W. (1981.): <i>Introduction of Offshore Structure Design, Fabrication, Instalation</i> , Gulf Publishing Company, 1981.						
	Hsu, T.H. (1984.): <i>Applied Offshore Structure Engineering</i> , Gulf Publishing Company.						



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	Boswell, L.F., D´Mello, C.A (1989.): <i>The Jack-up Drilling Platform Design, Construction and Operation</i> , Elsevier Applied Sciences.
2.12. Other (as the proposer wishes to add)	-