University of Zagreb

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FACULTY OF MINING, GEOLOGY AND PETROLEUM ENGINEERING

1. GENERAL INFORMATION				
1.1. Course teacher	Tenured Professor Nediljka Gaurina-Međimurec, PhD		1.6. Year of the study	II.
1.2. Name of the course	Application of Drilling Engineering Software		1.7. ECTS credits	4
1.3. Associate teachers	Teaching Assistant Petar Mijić, PhD		1.8. Type of instruction (number of hours L + E + S + e-learning)	15L+15E+30S+0e-learning
1.4. Study programme (undergraduate, graduate, integrated)	graduate		1.9. Expected enrolment in the course	10
1.5. Status of the course	☐ mandatory	☒ elective	1.10. Level of application of e-learning (level 1, 2, 3), percentage of online instruction (max. 20%)	-

2. COUSE DESCRIPTION			
2.1. Course objectives	Acquisition of knowledge and skills in the application of software packages in optimizing the drilling process.		
2.2. Enrolment requirements and/or entry competences required for the course	Completed course *Drilling Engineering* from the 1st year of study.		
2.3. Learning outcomes at the level of the programme to which the course contributes	Independently solve complex engineering problems in petroleum engineering and geoenergy engineering; Design wellbore for hydrocarbon and geothermal water exploitation.		
2.4. Expected learning outcomes at the level of the course (3 to 10 learning outcomes)	Apply the selected software package; Design the well trajectory; Select the drilling string components and perform the drill string stress analysis; Formulate the appropriate well design; Perform hydraulic calculation drilling and cementing.		
2.5. Course content (syllabus)	Demonstration of work in Landmark software and all subroutines related to well design; Selection of drilling fluid composition for specific sections of a wellbore and determination of drilling fluid properties; Selection of drill string components and calculation of longitudinal and torsional stresses in the drill string during drilling; Casing string design (appropriate depth of casing setting, dimensioning of casings, etc.); Hydraulic calculation during wellbore cleaning and casing cementing; Development of a complete well design project.		
2.6. Format of instruction:	☒ lectures ☒ seminars and workshops ☐ exercises ☐ online in entirety ☐ partial e-learning ☐ field work	☒ independent assignments ☐ multimedia and the internet ☒ laboratory ☐ work with mentor ☐ (other)	2.7. Comments: -

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2.8. Student responsibilities	Active participation in lectures, experimental work, project and practical work, taking written and oral exams.								
2.9. Monitoring student work	Class attendance	YES		Research		NO	Oral exam	YES	
	Experimental work	YES		Report		NO			
	Essay		NO	Seminar paper		NO			
	Preliminary exam		NO	Practical work	YES				
	Project	YES		Written exam	YES		ECTS credits (total)	4	

2.10. Required literature (available in the library and/or via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	Adams, N.J. (1985): *Drilling Engineering-A Complete Well Planning Approach*, Penn Well Books, Tulsa. – selected chapters	YES	YES
	Bourgoune, A.T., Chenevert, M.E., Milheim, K.K., Young, S.S.Jr. (1991.): *Applied Drilling Engineering*, SPE Textbook Series. – selected chapters	YES	YES
	Drilling data handbook (1999.). Institut Francais du petrole, API Standards, Engineering essentials of modern drilling.	YES	YES
	Halliburton Landmark Software Manual.	NO	YES
2.11. Optional literature	-		
2.12. Other (as the proposer wishes to add)	-		

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