



1. GENERAL INFORMATION			
1.1. Course teacher	Assistant Professor Borivoje Pašić, PhD	1.6. Year of the study	II.
1.2. Name of the course	Well Completion and Workover Design	1.7. ECTS credits	5
1.3. Associate teachers	Teaching Assistant Igor Medved, MSc	1.8. Type of instruction (number of hours L + E + S + e-learning)	25L+15E+10S+10e-learning
1.4. Study programme (undergraduate, graduate, integrated)	graduate	1.9. Expected enrolment in the course	15
1.5. Status of the course	<input type="checkbox"/> mandatory <input checked="" type="checkbox"/> elective	1.10. Level of application of e-learning (level 1, 2, 3), percentage of online instruction (max. 20%)	level 3, 16,67% online
2. COUSE DESCRIPTION			
2.1. Course objectives	Acquisition of knowledge and skills necessary for the well completion and workover design in accordance with the well conditions, properties of the reservoir rock and fluids, the purpose of the well and additional specific conditions.		
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 geoenergy engineering; Design wellbores for hydrocarbon and geothermal water exploitation; Compare specific procedures and processes in petroleum engineering and geoenergy engineering; Appraise the process and a facility's efficiency in petroleum engineering and geoenergy engineering; Supervise projects in petroleum engineering and geoenergy engineering.		
2.4. Expected learning outcomes at the level of the course (3 to 10 learning outcomes)	Calculate the forces and pressure in tubing/packer system in the case of complex well completion systems; Design production/injection string for fluid production or injection on certain exploration fields; Identify the cause of deviation in well performance from projected values; Propose well completions systems; Propose a procedure for well kill and restart production in accordance with well conditions, installed equipment and the reservoir rock and fluid properties; Select an workover rig and tools to carry out well completion and workover operations; Evaluate the success of particular well completion and workover operations.		
2.5. Course content (syllabus)	Possible ways of well completions; Well performance analysis; Method and procedures of well killing and restart production; Combined well completion; Completion of the well with multiple production zones; Well completion with the multiple production/injection strings; Horizontal and multilateral well completion and workover; Well completion and workover design; Workover rig and tools selection to carry out well completion and workover operation.		
2.6. Format of instruction:	<input checked="" type="checkbox"/> lectures	<input checked="" type="checkbox"/> independent assignments	2.7. Comments:

This document was prepared in the framework of the project InterRGN – Internationalization of the Faculty of Mining, Geology and Petroleum Engineering, funded by the European Union from the European Social Fund. The content of this document is the sole responsibility of the University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering.



	<input checked="" type="checkbox"/> seminars and workshops <input checked="" type="checkbox"/> exercises <input type="checkbox"/> online in entirety <input checked="" type="checkbox"/> partial e-learning <input checked="" type="checkbox"/> field work	<input type="checkbox"/> multimedia and the internet <input type="checkbox"/> laboratory <input type="checkbox"/> work with mentor <input type="checkbox"/> (other)	-				
2.8. Student responsibilities	Active participation in lecture, exercises and seminars, preparation and presentation of the project in accordance with the given project task, homework, taking the written and oral exams.						
2.9. Monitoring student work	Class attendance	YES	Research	NO	Oral exam	YES	
	Experimental work	NO	Report	NO	Homework	YES	
	Essay	NO	Seminar paper	NO			
	Preliminary exam	NO	Practical work	NO			
	Project	YES	Written exam	YES	ECTS credits (total)	5	
2.10. Required literature (available in the library and/or via other media)	Title					Number of copies in the library	Availability via other media
	Perrin, D. (1999.): <i>Well Completion and Servicing (Oil and Gas Field Development Techniques)</i> , Institut Français du Pétrole Publication, Éditions TECHNIP 27 rue Ginoux, 75737 PARIS Cedex 15, France.					YES	YES
	Renpu, W. (2011.): <i>Advanced Well Completion Engineering</i> , Elsevier Inc.					YES	YES
	Bellarby, J. (2009.): <i>Well Completion Design, Developments in Petroleum Science 56</i> , Elsevier B.V.					YES	YES
2.11. Optional literature	-						
2.12. Other (as the proposer wishes to add)	-						