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	Intelligent Well Completion and Exploitation Filed Digitalisation	1.7. ECTS credits	4
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	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%)	level 3, 16,67% online

2. COUSE DESCRIPTION

2.1. Course objectives	Introducing students to the intelligent well completion system, automation and digitalisation of the field, and acquiring knowledge and skills necessary for the application of this technology in process of oil, gas and geothermal water production.
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; Plan hydrocarbon and geothermal reservoir management; Predict reservoir behaviour and the behaviour of hydrocarbon and geothermal water production system; Optimize hydrocarbon and geothermal water production; 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)	Distinguish surface and downhole equipment used for intelligent well completion and filed digitalisation; Assess the need for intelligent well completion, automation and digitalisation on particular exploration filed; Assess the possibility of applying machine learning and full automatization in fluid production on well completed with the different production systems; Evaluate the application of intelligent completion on specific well with regard to different well production system and characteristic of installed equipment.
2.5. Course content (syllabus)	Intelligent well completion systems; Downhole measuring and control equipment; Monitoring of the well production parameters; Big data analysis and using; Digitalisation of the oil fields; Optimisation of well production through intelligent well completion; Application of machine learning.

2.6. Format of instruction:	☒ lectures	☐ independent assignments	2.7. Comments:

	☒ seminars and workshops ☐ exercises ☐ online in entirety ☒ partial e-learning ☐ field work	☐ multimedia and the internet ☐ laboratory ☐ work with mentor ☐ (other)	If necessary, all classes can be conducted online.

2.8. Student responsibilities	Active participation in lecture, preparation and presentation of the seminar paper, taking the oral exams.						

2.9. Monitoring student work	Class attendance	YES		Research	YES		Oral exam	YES	
	Experimental work		NO	Report		NO			
	Essay		NO	Seminar paper	YES				
	Preliminary exam	YES		Practical work		NO			
	Project		NO	Written exam		NO	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
	Bellarby, J. (2009.): *Well Completion Design*, Developments in Petroleum Science 56, Elsevier B.V. – selected chapters	NO	YES
	Carvajal, G., Maucec, M. i Cullick, S. (2018.): *Intelligent Digital Oil and Gas Field – Concepts, Collaboration, and Right-Time Decisions,* Elsevier Inc.	NO	YES

2.11. Optional literature	OnePetro – multi-society technical paper library.
2.12. Other (as the proposer wishes to add)	