1. GENERAL INFORMATION				
1.1. Course teacher	Assistant Professor Marko Cvetković, PhD		1.6. Year of the study	II.
1.2. Name of the course	Introduction to Geological Modelling		1.7. ECTS credits	4
1.3. Associate teachers	Assistant Professor Iva Kolenković Močilac, PhD		1.8. Type of instruction (number of hours L + E + S + e-learning)	25L+25E+0S+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 2, 16,67% on line

2. COUSE DESCRIPTION			
2.1. Course objectives	Intention of the course is to give an overview of geological modelling of oil and/or gas accumulations previous to reservoir simulation with practical work being performed on a simplified geological workflow. Understanding of the process that precede the reservoir simulation is a skill that future reservoir engineers would largely benefit from.		
2.2. Enrolment requirements and/or entry competences required for the course	Basic understanding of the subsurface geology and geophysical methods used in subsurface explorations.		
2.3. Learning outcomes at the level of the programme to which the course contributes	Analyse reservoir rock and reservoir fluids' properties; Plan hydrocarbon and geothermal reservoir management; Predict reservoir behaviour and the behaviour of hydrocarbon and geothermal water production system.		
2.4. Expected learning outcomes at the level of the course (3 to 10 learning outcomes)	Outline basic types of horizons that are mapped in the subsurface and their significance in geological modelling; Assess different data sources used for construction of the geological model; Create a simplified geological model of an oil and/or gas reservoir; Recognize the impact of usage of different mapping algorithms used in mapping of the spatial properties of the model; Identify the appropriate resolution of the model for optimal modelling results; Calculate the oil and/or gas in place in cell-based model of an oil/gas accumulation.		
2.5. Course content (syllabus)	Introduction to different types of horizons that can being mapped (modelled) in the subsurface; Well data 1 (data on lithological composition from cuttings and cores); Well data 2 (data on petrophysical properties from laboratory measurements on core samples and from well-log interpretation); Surface data (from reflective seismic); Outcrop data; Linking surface and well data (time to depth conversion); Different approaches to mapping the spatial distribution of reservoir rock properties; Defining model resolution, impact on result quality versus time consumption; Calculation of oil and/or gas reserves based on grid cell model.		
2.6. Format of instruction:	☒ lectures	☐ independent assignments	2.7. Comments:

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	☐ seminars and workshops ☒ exercises ☐ online in entirety ☒ partial e-learning ☐ field work			☐ multimedia and the internet ☐ laboratory ☐ work with mentor ☐ (other)			-			
2.8. Student responsibilities	Students are expected to attend lectures and to perform practical exercises.									
2.9. Monitoring student work	Class attendance	YES		Research		NO	Oral exam	YES		
	Experimental work		NO	Report		NO				
	Essay	YES		Seminar paper		NO				
	Preliminary exam		NO	Practical work	YES					
	Project	YES		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**
	Pyrcz, M.J., Deutsch, C.V. (2014.): *Geostatistical reservoir modelling*. Oxford University press. – selected chapters	YES	NO
2.11. Optional literature	-		
2.12. Other (as the proposer wishes to add)	-		

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