1. GENERAL INFORMATION				
1.1. Course teacher	Associate Professor Tomislav Kurevija, PhD		1.6. Year of the study	II.
1.2. Name of the course	Reservoir management and production data logging		1.7. ECTS credits	5
1.3. Associate teachers	Teaching Assistant Marija Macenić, PhD; Teaching Assistant Lucija Jukić, MSc		1.8. Type of instruction (number of hours L + E + S + e-learning)	30L+15E+10S+5e-learning
1.4. Study programme (undergraduate, graduate, integrated)	graduate		1.9. Expected enrolment in the course	15
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, 8,3% online
2. COUSE DESCRIPTION				
2.1. Course objectives	Students will be able to comment on the fundamentals of reservoir management, present the theoretical production decline curves, evaluate a certain well's operational conditions and apply the material balance equation.			
2.2. Enrolment requirements and/or entry competences required for the course	No special requirements			
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; 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)	Distinct the well patterns; Decide on a new recovery method; Prove the production decline type; Analyse the well production data; Calculate the reservoir behaviour by using material balance equation.			
2.5. Course content (syllabus)	**1. Reservoir management fundamentals:** The concept of reservoir management: definition of the term reservoir management, fundamentals of the reservoir management, importance of the geoscience, research and development strategy; Consideration of spatial well patterns – four, five, seven, nine spot patterns, including inverse patterns; Decision making regarding the implementation of a new recovery			

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<table>
<tr><td></td><td colspan="8">method (infill drilling, waterflood, stimulation); Collection and analysis of the data: data types, data validation, data storage and withdrawal; Management of a geothermal reservoir;
2. Theoretical production decline curves:
Analysis of the reservoir behaviour: primary recovery methods, reserves, volumetric method; Exponential, hyperbolic and harmonic decline types; Characteristics, equations, and Excel examples and MBAL; The Fetkovich method; Fundamentals of the rest of the methods for reservoir behaviour prediction;
3. Well operational parameters:
Determination of well interference and selection of wells suitable for conversion from production to injection well and vice-versa; Well pressure data collection; Influence of the reperforating, acid treatments and fracturing on the reservoir performance; Using tracers for well communication determination;
4. Material balance equation:
Production material balance of a reservoir; Matching the reservoir production material balance and well production history data; Examples of material balance; Reservoir management economics.</td></tr>
<tr><td>2.6. Format of instruction:</td><td colspan="3">☒ lectures
☒ seminars and workshops
☒ exercises
☐ online in entirety
☒ partial e-learning
☐ field work</td><td colspan="3">☒ independent assignments
☒ multimedia and the internet
☐ laboratory
☒ work with mentor
☐ (other)</td><td colspan="2">2.7. Comments:
-</td></tr>
<tr><td>2.8. Student responsibilities</td><td colspan="8">Class attendance, preliminary exams, independent making of projects and seminar papers, oral exam.</td></tr>
<tr><td rowspan="5">2.9. Monitoring student work</td><td>Class attendance</td><td>YES</td><td></td><td>Research</td><td></td><td>NO</td><td>Oral exam</td><td>YES</td><td></td></tr>
<tr><td>Experimental work</td><td></td><td>NO</td><td>Report</td><td></td><td>NO</td><td></td><td></td><td></td></tr>
<tr><td>Essay</td><td></td><td>NO</td><td>Seminar paper</td><td>YES</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Preliminary exam</td><td>YES</td><td></td><td>Practical work</td><td></td><td>NO</td><td></td><td></td><td></td></tr>
<tr><td>Project</td><td>YES</td><td></td><td>Written exam</td><td></td><td>NO</td><td>ECTS credits (total)</td><td colspan="2">5</td></tr>
<tr><td rowspan="3">2.10. Required literature (available in the library and/or via other media)</td><td colspan="5">Title</td><td>Number of copies in the library</td><td colspan="2">Availability via other media</td></tr>
<tr><td colspan="5">Kabir, S., Izgec, O. (2012.): Real-Time Reservoir Management, SPE. - selected chapters</td><td>NO</td><td colspan="2">YES</td></tr>
<tr><td colspan="5">Fanchi, J.R. (2010.): Integrated Reservoir Asset Management, Gulf Professional Publishing, ISBN: 978-0-12-382088-4. – selected chapters</td><td>NO</td><td colspan="2">YES</td></tr>
<tr><td>2.11. Optional literature</td><td colspan="8">Satter, A, Igbal, G.M. (2016.): Reservoir Engineering The Fundamentals, Simulation, and Management of Conventional and Unconventional Recoveries, Gulf Professional Publishing.</td></tr>
</table>

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	Ahmed, T., Meehan, D.N. (2012.): *Advanced Reservoir Management and Engineering*, Gulf Professional Publishing.
2.12. Other (as the proposer wishes to add)	-

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