



1. GENERAL INFORMATION						
Study programme title	University graduate study programme in mining engineering Subprogrammes Mining engineering and Geotechnical engineering					
Course title	Mining engineering design			Semester	IV	
Teacher	Assoc. prof. Ivo Galić, PhD			Course code	27369	
Course type	<input checked="" type="checkbox"/> obligatory <input type="checkbox"/> elective			ECTS	7	
Location	Faculty of Mining, Geology and Petroleum Engineering, Pierottijeva 6, Zagreb					
Language	<input checked="" type="checkbox"/> Croatian <input type="checkbox"/> English					
Class type	Weekly hours	Teaching staff	Office hours	Room	E-mail	
Class	3	Assoc. prof. Ivo Galić, PhD	Every day 12:00 – 14:00	502	igalic@rgn.hr	
Practice	3	PhD. Branimir Farkaš	Monday 10:00-12:00	515	branimir.farkas@rgn.hr	
Field lecture						
E-learning level	2		Percentage of on-line class (max. 20%)		10%	
2. COURSE DESCRIPTION						
Course aims	Application of certain knowledge for independent or team solving work of concrete tasks in the field of mining engineering design. Use of computer and specialised software for all types of processing (text, graphics, calculations). Training in the preparation of project documentation related to the exploration and exploitation of mineral deposits. Preparation for the project implementation and learning specific skills for managing organizational units. Acquiring knowledge for valorisation of existing projects and planning of new projects.					
Requirements for applicants	Passed subjects from III. semester.					
Programme level learning outcomes with course contribution						
Expected course level learning outcomes (4-10 outcomes)	Application of acquired knowledge in the designing exploration and exploitation of mineral deposit. Understanding of the procedure for obtaining a mining concession and related procedures relevant to the mining industry. Competitive knowledge of mine design methods and independent decision					



	making on the optimal design method. Competitive knowledge of reserve calculation methods and independent decision making on the optimal calculation method. Independent and team solving of simple project tasks. Applying knowledge in new or unfamiliar situations on the field. Creating a framework for making plans and forecasting mining works. Delivering suggestions and reasoned conclusions. Creating and developing new learning methods.
Course contents by individual lessons	
Class	Practice
P1 – Introduction to Mining engineering design	V1 - Introduction to mine design process
P2 – Legal frameworks for mine design	V2 - Design process preparation
P3 – Mining engineering design methods	V3 - Legal frameworks related to the allocated mineral resources
P4 – Specialised mine design software	V4 - Determining the location of a surface mine
P5 – Forecasts and planning documents - broader social design frameworks	V5 - Positioning of investigative works
P6 – Expert maps for the mine design	V6 - Mineral reserves determination
P7 - Designing of exploration works	V7 - Calculation and drawing of the final slope
P8 - Exploration of mineral deposits and interpretation of research results (Study of reserves)	V8 - Drawing a cross-section of a surface mine - part 1
P9 - Fundamentals for surface exploitation design (mining site opening and mining works development)	V9 - Calculation of techno-economic assessment of the deposit
P10 - Fundamentals for underground exploitation design (mining site opening and mining works development)	V10 - Calculation of surface mine elements
P11 - Design and study of design solutions (composition of mining works)	V11 - Drawing of a surface mine elements
P12 - Modelling and animation of mining work	V12 - Drawing a cross-section of a surface mine - part 2
P13 - Design and study of preliminary mining projects, investment programs and mine feasibility studies	V13 – Creating three-dimensional model of a deposit and mining works - part 1
P14 – Environmental impact study (studying of the mining works impact on the environment)	V14 - Creating three-dimensional model of a deposit and mining works - part 2



P15 - Design and study of mining projects implementation; making of expert assessments (expertise)		V15 - Print reports, and three-dimensional models in PDF		
Students' obligations				
Students' work track <i>(indicate share in ECTS points for each activity so that overall ECTS number corresponds to class credits score):</i>	Class attendance	2	Research	
	Project	2	Report	
	Colloquium	3	Seminar paper	
	Practical work		Oral exam	
	Written exam		(Extra)	
Type of exam, grades and evaluation of students work during class and on final exam	Designing a program of exploration and exploitation of mineral resources throughout the semester. Passing 4 colloquiums.			
Mandatory literature (available in the Library and via other media)	V. Abramović, B. Perić: Projektiranje u rudarstvu, Faculty of Mining, Geology and Petroleum Engineering, Zagreb I. Galić: Projektiranje u rudarstvu uz primjenu namjenskih programa, master thesis, Faculty of Mining, Geology and Petroleum Engineering, Zagreb I. Galić: Optimalna točka otvaranja i razvoj površinskih kopova na slojevitim ležištima, doctoral thesis, Faculty of Mining, Geology and Petroleum Engineering, Zagreb I. Galić, B. Farkaš: Interne skripte iz projektiranja rudnika, Faculty of Mining, Geology and Petroleum Engineering, Zagreb Legal acts and by-laws related to mining in the Republic of Croatia			
Additional literature (at the moment of study program proposition application)	Projects, studies, elaborates from our personal professor archive			
Examination terms				
Other				

Course Teacher:

Assoc. prof. Ivo Galić, PhD