SYLLABUS

1. Course title:

SAFETY PILLARS EXPLOITATION IN UNDERGROUND MINING

2. Code:

LRUDOZS

3. Cycle of study:

1

4. ECTS credits:

4

5. Type of course:

Elective

6. Prerequisites:

No

7. Class restrictions:

No

8. Duration / semester(s):

1 8

9. Weekly contact hours and student workload:

	Semester (1)	Semester (2)	(for two-semester courses)	Workload: (hours)	
9.1. Lectures	2		Classes:	33,75	
9.2. Seminars	1		Individual work:	66,75	
9.3. Laboratory / Practice classes	0		In total:	100,50	

10. Faculty:

Mining, Geology and Civil Engineering

11. Department/study program:

Mining Engineering

12. Lecturer:

PhD Omer Musić Full Professor

13. Course aims:

Objectives of the Course:

- Introduce students to basic knowledge in the field of protective pillar excavation.
- Transfer to students all previous theoretical and practical knowledge and experiences in the domain of protective

pillar excavation.

- **Develop students' intellectual skills in applying the acquired knowledge to solve various engineering problems.**
- **Improve their communication skills in both written and verbal forms.**
- **Enhance their skills related to individual and team/group work.**
- **Improve students' skills related to continuous work throughout the entire year.**
- **Prepare students for teamwork and open communication with professors, contributing to the improvement of the teaching process and the absorption of new knowledge.**

14. Learning outcomes:

At the end of the semester/course, successful students who have continuously fulfilled their obligations throughout the entire teaching period will be capable of:

- **Using available (written/electronic) literature related to solving various problems in the field of protective pillar excavation, in a scope appropriate to the course.**
- **Solving simple, as well as relatively more complex problems for which knowledge from protective pillar excavation is sufficient.**
- **Solving problems of varying complexity, individually and in teams, and presenting them in written or verbal form.**
- **Understanding the significance of this course in solving various problems in mining engineering practice.**
- **Passing the final exam in the first available exam sessions at the end of the semester.**

15. Course content:

Introductory Session: Presentation of the Course and Syllabus on Protective Pillar Excavation

- **Protective pillars, classification of pillars, defining terms**
- **The impact of underground excavation on the surface and the theory of impact**
- **Design of protective pillars, methods of protective pillar excavation**
- **Analysis of conditions, classification of excavation methods, methods of partial exploitation, controlled collapse methods, methods with filling of excavated space, selection of excavation methods**
- **Protection of surface structures from the impact of underground excavation, general terms, methods, and categories of protection**
- **Forecasting the impact of protection, monitoring the consequences of excavation**
- **Economics of protective pillar excavation, economic evaluation of reserves in pillars, costs and economic indicators of exploitation, legal regulations, and ecological aspects of protective pillar exploitation.**

16. Learning methods:

In order to efficiently conduct the course and achieve the expected course objectives and student competencies by the end of the semester, the following teaching methods are used:

- **Lectures**
- **Tasks, preparation of exercises**
- **Consultations**

Students are required to attend lectures throughout the entire semester, as defined by the University of Tuzla's Regulations and Statute. The right to receive a signature for the course is defined by the applicable Regulations and Statute of the University of Tuzla. The instructor will monitor student attendance throughout the semester using a specially created form.

17. Assessment methods:

The methods of evaluating students include the following criteria:

1. **Attendance at lectures and exercises**
2. **Test**
3. **Final oral/written exam**

Based on the above factors, at the end of the course, the instructor will form the final grade by scoring the individual activities.

18. Assessment components:

The total number of points is obtained by summing the maximum possible points from all activities throughout the semester:

- **Attendance at lectures: 5 points**
- **Attendance at exercises: 5 points**
- **Test: 40 points**
- **Pre-exam obligations: 50 points**
- **Final exam: 50 points**
- **Total: 100 points**

The final performance of the student, after all forms of knowledge assessment, is graded using a system comparable to the ECTS grading scale as follows: a) 10 (A) - Excellent performance with no or only minor mistakes, 95-100 points
b) 9 (B) - Above average, with some mistakes, 85-94 points
c) 8 (C) - Average, with noticeable mistakes, 75-84 points

d) 7 (D) - Generally good, but with significant deficiencies, 65-74 points
e) 6 (E) - Meets the minimum criteria, 54-64 points
f) 5 (F, FX) - Does not meet the minimum criteria, fewer than 54 points.

19. Mandatory reading list:

1. Wydawnictwo Šlask. Ochrona powierchni przed skodamy gorniczymi, odabrana poglavlja
2. O. Musić Osnove rudarstva-podzemna eksploatacija mineralnih sirovina, udžbenik, Tuzla, 2022

20. Additional reading list:

21. Web sources:

22. Applicable from the academic year:

2025/26.

23. Adopted in the Faculty/Academy session: