

## SYLLABUS

**1. Course title:**

UNDERGROUND MINING BEDDED DEPOSITS

**2. Code:**

LRUDPESL

**3. Cycle of study:**

1

**4. ECTS credits:**

6

**5. Type of course:**

Mandatory

**6. Prerequisites:**

No

**7. Class restrictions:**

No

**8. Duration / semester(s):**

1

7

**9. Weekly contact hours and student workload:**

	Semester (1)	Semester (2)	(for two-semester courses)	Workload: (hours)
9.1. Lectures	4			Classes: 56,25
9.2. Seminars	0			Individual work: 98,58
9.3. Laboratory / Practice classes	1			In total: 154,8
				<u>2</u>

**10. Faculty:**

Mining, Geology and Civil Engineering

**11. Department/study program:**

Mining Engineering

**12. Lecturer:**

PhD Omer Musić Full Professor

**13. Course aims:**

The goal of the course is to familiarize students with the basic knowledge in the field of underground exploitation of stratified deposits, specifically:

- Transfer all the theoretical and practical knowledge and experiences related to underground exploitation of

stratified deposits to students.

- 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 academic year.
- Prepare students for teamwork and open communication with professors, which will contribute 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 course will be equipped to:

- Use available (written/electronic) literature to solve various problems related to the underground exploitation of stratified deposits, in an extent appropriate to the course.
- Solve simple as well as relatively more complex problems for which knowledge of mine design is sufficient.
- Solve problems of varying complexity, both individually and in teams, and present them in written or verbal form.
- Understand the significance of this course for solving various problems in mining engineering practice.
- Pass the final exam in the first available exam sessions at the end of the semester.

#### 15. Course content:

**Introductory Lecture: Course and Syllabus Presentation for Underground Exploitation of Stratified Deposits**

**Basic Terms and Terminology:**

Shaft, shaft field, mine rooms, excavation field.

Sequence of excavation in multi-layer coal deposits.

**Opening of Deposits:**

Methods and schemes for opening shafts.

Opening of deposits through horizontal, inclined, and vertical rooms.

Entrances and exits, surface area above the shaft.

**Preparation of Shaft Fields:**

Schemes and systems for shaft field preparation.

Horizontal preparation scheme, panel and tiered schemes.

**Shaft Reconstruction:**

Basic concepts and principles of shaft reconstruction with vertical shafts, low-level workings.

Fundamental principles and directions for coal shaft reconstruction.

**Factors Affecting the Choice of Excavation Methods:**

General considerations: assessment of production and technical factors, mining-geological factors.

Technical-economic and organizational factors.

**Classification of Excavation Methods:**

Division based on the method of restoring the excavated space.

Degree of mechanization in the technological process.

Thickness of the mined layer, angle of the mined layer's dip.

Dimensions of the working area.

**Excavation Methods:**

Narrow face excavation methods, wide face excavation methods, combined face excavation methods.

**Mining Mechanization and Automation in Technological Processes:**

Mechanization and automation involved in the coal extraction process.

This lecture will provide an introduction to the fundamental concepts, principles, and methods used in the underground exploitation of stratified deposits, with a particular focus on excavation techniques, shaft preparation, and the factors influencing the choice of methods.

#### 16. Learning methods:

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

- Lectures
- Seminar papers
- Consultations

Throughout the semester, students are required to attend lectures as specified 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 the student's attendance throughout the semester on a specially created form. The percentage of hours that must be attended in lectures is also defined by the University of Tuzla's Regulations and Statute.

#### 17. Assessment methods:

The student evaluation methods include the following criteria:

1. Attendance and participation in lectures
2. Oral/written mini-exams or part of the exam - Test

### 3. Final oral/written exam

Based on the aforementioned criteria, at the end of the course, the instructor will assign a final grade by scoring individual activities.

## 18. Assessment components:

The total number of points is obtained by summing the maximum possible points from all activities during the semester: attendance and participation in lectures, written/oral exam. The points are awarded as follows:

- Attendance: 5 points
- Participation: 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 evaluated and graded using a system comparable to the ECTS grading scale as follows:

- 10 (A) - Exceptional performance with no mistakes or only minor mistakes, awarded 95-100 points.
- 9 (B) - Above average, with some mistakes, awarded 85-94 points.
- 8 (C) - Average performance, with noticeable mistakes, awarded 75-84 points.
- 7 (D) - Generally good, but with significant deficiencies, awarded 65-74 points.
- 6 (E) - Meets the minimum criteria, awarded 54-64 points.
- 5 (F, FX) - Does not meet the minimum criteria, awarded fewer than 54 points.

## 19. Mandatory reading list:

1. B. Genčić; Tehnološki procesi podzemne eksploatacije slojevitih ležišta, otvaranje, priprema i metode otkopavanja
2. S. Slijepčević; Podzemna eksploatacija uglja
3. O. Musić; Uskočelne metode otkopavanja slojevitih ležišta
4. O. Musić, Osnove rudarstva - podzemna eksploatacija mineralnih sirovina

## 20. Additional reading list:

1. M. Petrović; Otvaranje, razrada i metode otkopavanja
2. B. Genčić; Tehnološki procesi podzemne eksploatacije slojevitih ležišta, parametri proizvodnih jedinica
3. B. Genčić; Tehnološki procesi podzemne eksploatacije slojevitih ležišta, radana sredina, podzemni pritisak, pogađivanje i osiguranje otkopa

## 21. Web sources:

## 22. Applicable from the academic year:

2025/26.

## 23. Adopted in the Faculty/Academy session: