

## SYLLABUS

**1. Course title:**

UNDERGROUND MINE DESIGNING

**2. Code:**

LRUDPPR

**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

8

**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	1			Individual work: 97,83
9.3. Laboratory / Practice classes	0			In total: 154,0 <sub>0</sub>

**10. Faculty:**

Mining, Geology and Civil Engineering

**11. Department/study program:**

Mining Engineering

**12. Lecturer:**

PhD Omer Musić Full Professor

**13. Course aims:**

The objectives of the course are to:

- Familiarize students with basic knowledge in the field of underground mine design.
- Transfer theoretical and practical knowledge and experiences related to underground mine design.

- Develop intellectual skills for applying acquired knowledge to solve various engineering problems.
- Improve students' communication skills in both written and verbal forms.
- Enhance students' skills related to individual and team/group work.
- Promote 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 able to:
- Use available (written/electronic) literature related to solving various problems in the field of underground mine design, within the scope appropriate for the course.
  - Solve both simple and relatively complex problems that require knowledge of mine design.
  - Solve problems of varying complexity, individually and in teams, and present their solutions in written or verbal form.
  - Understand the significance of this course in solving various problems in mining engineering practice.
  - Pass the final exam in the first available exam session at the end of the semester.

#### 15. Course content:

**Introductory Lecture: Course and Syllabus Presentation for Underground Mine Design; Project and Other Investment Technical Documentation for Mines, Mining Projects, Programs, Plans, Reports, and Studies**  
**Legal and Normative Regulations in Mine Design, Mining Laws, Regulations, Standards:**  
 Overview of the legal and regulatory framework governing mine design, including relevant mining laws, regulations, and standards.  
**Procedure for Preparing and Approving Mining Projects, Content and Form of Mining Projects:**  
 The process of preparing and approving mining projects, with a focus on the structure and format of mining project documentation.  
**Mine Parameters, Calculation Methods, and Optimization in Design; Computer Programs:**  
 Understanding the key parameters for mine design, methods of calculation, and optimization techniques, along with the use of computer programs for these processes.  
**Designing Opening Rooms, Types of Rooms, Location Determination, Solutions for Room Construction, Opening Methods, Deposit Preparation, Field and Block Preparation Systems:**  
 Design considerations for opening rooms, selection of types of rooms, determining the location of openings, methods for room construction, preparation of the deposit, and systems for preparing fields and blocks.  
**Designing Excavation Technology; Selection of Technological Process, Determining Mine Capacity, Setting Horizon Heights, Calculation of Excavation Field Dimensions, Design of Excavation Methods, and Other Stages of the Technological Process:**  
 Focus on designing excavation technology, selecting the appropriate technological process, determining the mine's capacity, calculating excavation field dimensions, and designing methods for excavation and other phases of the technological process.  
**Design of Surface Facilities in Mines Supporting Underground Production Systems:**  
 Designing surface facilities that support the underground mining system.

#### 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, various teaching methods are used in the course:
- Lectures
  - Programming assignments, seminar papers
  - Consultations
- Throughout the semester, students are required to attend lectures as defined by the Rules and Statute of the University of Tuzla. The right to obtain a signature for the course is defined by the applicable Rules and Statute of the University of Tuzla. The instructor will monitor student attendance throughout the semester using a specially created attendance form.

#### 17. Assessment methods:

- The methods of evaluating students include the following criteria:
1. Attendance and participation in lectures
  2. Completion of programming assignments
  3. Oral/written mini exams or part of the exam
  4. Final oral/written part of the exam
- Based on the above, 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 calculated by summing the maximum possible points from all activities throughout the semester: attendance and participation in classes, written/oral exams. The scoring is as follows:

- Attendance: 5 points
- Participation in classes: 5 points
- Programming assignment: 40 points
- Pre-exam obligations: 50 points
- Final exam: 50 points

Total: 100 points

The final grade of the student, after all forms of knowledge assessment, is evaluated and graded according to a system comparable to the ECTS grading scale as follows:

- a) 10 (A) - Excellent performance with no mistakes 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) - Satisfies the minimum criteria, 54-64 points
- f) 5 (F, FX) - Does not satisfy the minimum criteria, fewer than 54 points

#### 19. Mandatory reading list:

1. Dr. Veljko Simeunović. "Projektovanje rudnika sa podzemnom eksploatacijom"
2. Dr. Vladimir Abramović, Borislav Perić. Projektiranje u Rudarstvu
3. Dr. Omer Musić. Autorizovana predavanja

#### 20. Additional reading list:

1. Dr. Živorad Milićević, Dr. Radmilo Nikolić "Osnove projektovanja rudnika"
2. Dr. Mladen Stjepanović: "Osnovi projektovanja rudnika sa podzemnom eksploatacijom"

#### 21. Web sources:

#### 22. Applicable from the academic year:

2025/26

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