UNIVERSITY OF TUZLA UNIVERZITET U TUZLI

SYLLABUS

1. Course title:

ROCK MECHANICS

2. Code:

LRUDMHST

3. Cycle of study:

1

4. ECTS credits:

5

5. Type of course:

Mandatory

6. Prerequisites:

Mechanics

7. Class restrictions:

No

8. Duration / semester(s):

1 | 5

9. Weekly contact hours and student workload:

	Semester (1)	Semester (2)	(for two-semester courses)	Workload: (hours)
9.1. Lectures	2		Classes:	45
9.2. Seminars	1		Individual work:	80,92
9.3. Laboratory / Practice classes	1		In total:	125,92

10. Faculty:

Mining, Geology and Civil Engineering

11. Department/study program:

Mining Engineering

12. Lecturer:

PhD Sabid Zekan Full Professor

13. Course aims:

The goal of the course is to enable students to independently solve engineering problems in the field of rock mechanics, to lead with cost-effectiveness in operations by applying acquired knowledge, and to innovate new methods and technologies in engineering through the application of rock mechanics as an engineering discipline.

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 able to:
• Independently solve technical problems in the field of geotechnics related to rock mechanics • Use literature to solve problems in this field • Understand the significance of this course in solving practical problems • Apply acquired knowledge in scientific research processes both during and after their studies • Participate in scientific research processes at their home department • Use knowledge and skills for subsequent courses during their studies.

15. Course content:

Introduction to rock mechanics, rocks and rock mass
• Structural and physical-mechanical properties
• Classification of rock mass
• Stresses and deformations in rock masses in general
• Secondary stress state in rock masses
• Strength of rocks and rock masses
• Permeability of rock masses
• Rheology of rock material
• Theories of mining pressures and roof management
• Safety supporting pillars
• Field methods in rock mechanics
• Modeling methods in rock mechanics
• Ground subsidence due to underground exploitation
• Slope stability in rock masses
4o mini

16. Learning methods:

Lectures
• Exercises
• Programming tasks
During the semester, the student is required to attend lectures and exercises regularly. The student is also obligated to complete the programming tasks.
In the learning process, the student must actively participate, which includes discussions with the instructor about any uncertainties related to the studied material. Tests are provided for additional training outside of class to allow for further practice.

17. Assessment methods:

The methods of assessing students' knowledge include the following criteria:
• Attendance in lectures
• Attendance in exercises
• Programming tasks
• Tests
• Final exam
Programming tasks must be completed during the teaching period and are a requirement for the validation of the student's academic obligations.

18. Assessment components:

The total number of points is obtained by summing the maximum possible points from all activities during the semester:
• Attendance in lectures: 5 points
• Attendance in exercises: 5 points
• Test I: 20 points
• Test II: 20 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 the system comparable to the ECTS grading scale as follows:
a) 10 (A) - Excellent success with no mistakes or only minor mistakes, worth 95-100 points;
b) 9 (B) - Above average, with some mistakes, worth 85-94 points;
c) 8 (C) - Average, with noticeable mistakes, worth 75-84 points;
d) 7 (D) - Generally good, but with significant deficiencies, worth 65-74 points;
e) 6 (E) - Meets the minimum criteria, worth 54-64 points;
f) 5 (F, FX) - Does not meet the minimum criteria, less than 54 points.

19. Mandatory reading list:

1. M. Stević: Mehanika tla i stijena
2. S. Zekan, M. Hodžić: Laboratorijska geotehnika

20. Additional reading list:

1. M. Stević: Praktikum iz mehanike tla i stijena
2. M. Selimović: Mehanika stijena I, II i III dio

21. Web sources:

22. Applicable from the academic year:

2025/26.

23. Adopted in the Faculty/Academy session: