SYLLABUS

1. Course title:

CHEMICAL AND PHYSICAL MEASUREMENTS IN MINING ENGINEERING

2. Code:

LRUDHFMR

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 4

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	0			Individual work:	66,58
9.3. Laboratory / Practice classes	1			In total:	100,33

10. Faculty:

Mining, Geology and Civil Engineering

11. Department/study program:

Mining Engineering

12. Lecturer:

PhD Jelena Marković Full Professor

13. Course aims:

Provide students with basic knowledge of importance in ensuring a favorable atmosphere of the entire underground production system and pointing to the great importance of controlling physical and chemical properties of mine air; Determination of dust concentration (aerosol and aerogel).

14. Learning outcomes:

At the end of the semester / course of successful students who continued to perform their duties throughout the academic year, are expected to understand importance of this course in solving various problems in practice, solving problems of varying complexity, individually and in the team and present results in written or verbal form.

15. Course content:

- **Significance of mine ventilation**
- **Coal mine air distribution**
- **Chemical composition of mine air**
- **Mine air control (chemical analysis, portable measuring instruments in mine rooms, stationary instruments, automatic remote control)**
- **Physical properties of mine air**
- **Determination of basic parameters of mine air**
- **Physico-chemical characteristics of coal dust**
- **Measurement of setlled dust concentration in mine rooms**
- **Determining dust concentration in the air**

LABORATORY (FIELD) EXERCISES Practical examples of topics covered in lectures. Measuring instruments in monitoring.

16. Learning methods:

Lectures, laboratory (field) exercises, individual/group projects, assignments, consultations

- **Lectures and exercises are interactive and practical in nature.**

17. Assessment methods:

The methods of evaluating student knowledge include the following criteria:

- **Activity in lectures, field and laboratory exercises**
- **Individual and team projects**
- **Tests from curriculum**
- **Final exam**

18. Assessment components:

The methods of evaluating student knowledge include the following criteria:

1. **Activity in lectures, field, and laboratory exercises – 20 points**
2. **Individual and team projects – 20 points**
3. **Test – 30 points**

Pre-exam activities – 70 points
Final exam – 30 points
The final grade after all forms of knowledge assessment will be evaluated and graded using a system comparable to the ECTS grading scale as follows:
a) 10 (A) – Exceptional performance with no or very minor errors, 95-100 points
b) 9 (B) – Above average, with some minor errors, 85-94 points
c) 8 (C) – Average, with noticeable errors, 75-84 points
d) 7 (D) – Generally good, but with significant shortcomings, 65-74 points
e) 6 (E) – Meets the minimum criteria, 54-64 points
f) 5 (F, FX) – Does not meet the minimum criteria, less than 54 points.

19. Mandatory reading list:

1. E. Teply: Rudnička ventilacija, Zagreb 1990.
2. V.Jovičić: Ventilacija rudnika, Beograd 1989.
3. H. Tanović, Plinovi u rudnicima, RGGF Tuzla, 1999.

20. Additional reading list:

1. McPherson, M.J. : Subsurface Ventilation and Environmental Engineering, 1993
2. Dhillon B.S: Mine Safety, A Modern Approach, Springer, 2010

21. Web sources:

22. Applicable from the academic year:

2025/26

23. Adopted in the Faculty/Academy session:
