

**SYLLABUS**

**STUDY YEAR 2024/2025**

# **Bachelor Programme in Mineral Resource Engineering**

## **Enrollment semester Autumn 2024**

DATE

**2021-06-10**

REFERENCE NO.

**LTU-1995-2021**

DECISION MAKER

**Dean of the Faculty of Science and Technology**

## Programme content and structure

The education is a 3-year technical Bachelors program. The education focuses on the sustainable rock value chain and covers how to find, mine, extract and recycle metal and minerals as well as environmental, social and economic aspects. The education is based on project-oriented learning in collaboration with companies in the sector.

A project course runs through the first and second year where we will work with issues along the rock value chain in collaboration with companies. The course has both theoretical and practical elements such as experiments and field exercises that are carried out in project form both at Luleå University of Technology and at companies within the sector. During the autumn, the first year, the project course begins with an introduction to the rock value chain in parallel with basic courses in mathematics and physics and an introduction to Geosciences. During the spring, the project course continues in parallel with basic courses in Mathematics, Chemistry and Mineralogy. In the second year, the project course continues in parallel with courses on the various parts of the rock value chain, structures and deformations, metallurgy and mining as well as basic courses in mathematics, geochemistry and programming. The third year begins with courses in work environment, raw material economics and mathematical statistics, followed by elective courses and is finalized with a Bachelor thesis.

## Credits

180 credits

## Degree

- Degree of Bachelor of Science - Major; Natural Resources Engineering with specialisation Mineral Resource Engineering

## Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and have documented skills in English language + Upper secondary school courses English 6, Physics 2, Chemistry 1, Mathematics 4 or Mathematics E.

## Selection

The selection is based on final school grades or Swedish Scholastic Aptitude Test.

## Compulsory courses

### 157.5 credits

Course code	Course	Cr	Level	Comment
New	Extractive metallurgy	7.5	Bachelor's level	
New	Sustainable Mining Methods	7.5	Bachelor's level	
New	Work environment	7.5	Bachelor's level	
New	Structures and deformation	7.5	Bachelor's level	
New	Geochemistry	7.5	Bachelor's level	
New	Bachelor Thesis in Mineral Resource Engineering	15	Bachelor's level	
New	Mineral Resource Engineering 2	15	Bachelor's level	
D0009E	Introduction to Programming	7.5	Bachelor's level	
F0004T	Physics 1	7.5	Bachelor's level	
L0049K	Sustainable Resource Engineering 1	15	Bachelor's level	
M0047M	Differential calculus	7.5	Bachelor's level	
M0048M	Linear Algebra and Integral Calculus	7.5	Bachelor's level	
M0049M	Linear Algebra and Differential Equations	7.5	Bachelor's level	
N0029N	Natural Resource Economics	7.5	Bachelor's level	
O0041K	Geoscience	7.5	Bachelor's level	
O0042K	Mineralogy and Crystallography	7.5	Bachelor's level	
P0007K	Chemical Reactions in Mineral Resource Engineering	7.5	Bachelor's level	
S0001M	Mathematical Statistics	7.5	Bachelor's level	

### 22.5 credits

Credits for optional courses is 22.5 credits. Within the optional space of the programme it is possible to choose optional courses. The given number of credits must be met for degree.

## Study schedule

### Year of study 1 Enrollment semester Autumn 2024, Is offered in 2024/2025

Study-period	Course code	Course	Cr	Comment
1	M0047M	Differential calculus	7.5	
1-2	O0041K	Geoscience	7.5	
1-4	L0049K	Sustainable Resource Engineering 1	15	
2	F0004T	Physics 1	7.5	
3	P0007K	Chemical Reactions in Mineral Resource Engineering	7.5	
3-4	O0042K	Mineralogy and Crystallography	7.5	
4	M0048M	Linear Algebra and Integral Calculus	7.5	

### Year of study 2 Enrollment semester Autumn 2024, Is offered in 2025/2026, planned study schedule

Study-period	Course code	Course	Cr	Comment
1	D0009E	Introduction to Programming	7.5	
1-2	New	Structures and deformation	7.5	
1-4	New	Mineral Resource Engineering 2	15	
2	New	Geochemistry	7.5	
3	M0049M	Linear Algebra and Differential Equations	7.5	
3-4	New	Extractive metallurgy	7.5	
4	New	Sustainable Mining Methods	7.5	

## Year of study 3 Enrollment semester Autumn 2024, Is offered in 2026/2027, planned study schedule

Study-period	Course code	Course	Cr	Comment
1	New	Work environment	7.5	
1	S0001M	Mathematical Statistics	7.5	
2	N0029N	Natural Resource Economics	7.5	
2		Credits för optional courses	7.5	
3		Credits för optional courses	15	
4	New	Bachelor Thesis in Mineral Resource Engineering	15	