



**MONTAN  
UNIVERSITÄT  
LEOBEN**

MASTER OF SCIENCE IN

# GEOTECHNICS AND TUNNELLING

AS A SPECIAL STUDY TRACK INSIDE THE  
MSC PROGRAM MINING&TUNNELLING

Austrian Tunnelling Know-How and especially the New Austrian Tunnelling Method ("NATM") are internationally highly recognized and applied. In this context, the study program Geotechnics and Tunnelling aims to impart technical and scientific knowledge in the areas of geotechnical exploration, analytical & numerical calculation methods, planning & selection of the optimal construction method, geophysical & rock mechanical methods and digitization in tunnel construction. Further, construction contracts & management, geotechnical measurement methods, tunnel safety and cost calculation are part of the program. Practical work in the geotechnical laboratory and in the 1:1 research laboratory "Zentrum am Berg (ZaB)", round off this comprehensive training. The study program is offered in English. Graduates are well prepared to work for design consultants and construction companies, owners and operators of infrastructures, the supplier industry as well as for governmental offices in a wide variety of functions.

**MADE FOR THE FUTURE**

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MASTER'S PROGRAMME

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# Geotechnics and Tunnelling

Program Structure	
<b>1st Semester</b>	
Selected Chapters in Soil Mechanics	6 ECTS
Rock Mechanics and Rock Engineering	6 ECTS
Computer-Aided Calculations for Solving Practical Case Studies in Geotechnics	3 ECTS
Advanced Hydrogeology and Deep Geothermal Systems	2 ECTS
Construction Contracts	3 ECTS
CAD-Design in Tunnelling	3 ECTS
Conventional and Mechanised Tunnelling Methods	3 ECTS
Planning and Construction of Underground Structures	3 ECTS
<b>2nd Semester</b>	
Geotechnical Laboratory	3 ECTS
Geotechnical Site Investigation	3 ECTS
Calculation Exercises on the Finite Element Method	2 ECTS
Selected Aspects of Engineering Surveying in Mining and Tunnelling	6 ECTS
Design of Underground Structures	4,5 ECTS
Introduction to Building Information Modelling (BIM) in Tunnelling	2 ECTS
Tunnel Maintenance	1,5 ECTS
Practice-Oriented Work in the Field of Geotechnics and Tunnelling	2 ECTS
<b>3rd Semester</b>	
Geotechnical Measurement Methods and Equipment	1,5 ECTS
Numerical Methods in Geotechnics	6 ECTS
Special Methods of Rock and Foundation Engineering	1,5 ECTS
Construction Operations in Tunnelling	2 ECTS
Cost Calculation and Construction Management	1,5 ECTS
Tunnel Safety	1,5 ECTS
Sustainability in Subsurface Engineering	4 ECTS
<b>4th Semester</b>	
Master Thesis Module	30 ECTS

For programme details and registration follow the link.

