

ADMISSION REQUIREMENTS & APPLICATION INFORMATION

Students worldwide are invited to apply for admission to the Master of Science program in Geotechnical & Hydraulic Engineering. English proficiency and an earned bachelor degree in Civil Engineering (compatible with European standards) are required.

For detailed information regarding application and admissions requirements, tuition, fees and related topics, please visit the TU Graz website:

www.tugraz.at
> Academics > Registration Office

Curriculum Details and Study Plan

www.bau.tugraz.at

PARTICIPATING INSTITUTES

The Master of Science program in Geotechnical & Hydraulic Engineering is offered through the auspices of seven Institutes of the Faculty of Civil Engineering, together with the Institute of Engineering Geodesy & Measurement Systems. For subject-specific information pertaining to the core participating Institutes please visit the following websites:

Institute of Rock Mechanics & Tunnelling

<http://www.tunnel.tugraz.at>

Institute of Soil Mechanics & Foundation Engineering

<http://www.soil.tugraz.at>

Institute of Hydraulic Engineering & Water Resources Management

<http://www.hydro.tugraz.at>

Institute of Applied Geosciences

<http://www.egam.tugraz.at>



LOCATION AND ADDRESS

Dean's Office of the Faculty of Civil Engineering

Graz University of Technology
Rechbauerstraße 12
A-8010 Graz, AUSTRIA

Phone: +43(0)316/873-6111
Fax: +43(0)316/873-6108
Email: dekanat.bau@tugraz.at

Registration Office

Rechbauerstraße 12/I
Room No. AT 01024
A-8010 Graz, AUSTRIA

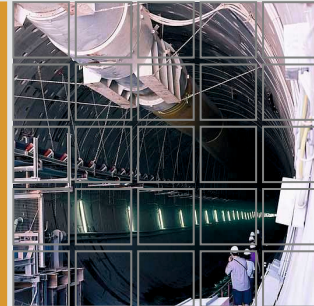
Phone: +43(0)316/873-6128
Fax: +43(0)316/873-6125
Email: moisi@tugraz.at



Graz University of Technology
Faculty of Civil Engineering



TU GRAZ
MASTER
PROGRAM



Master of Science in
Geotechnical & Hydraulic Engineering

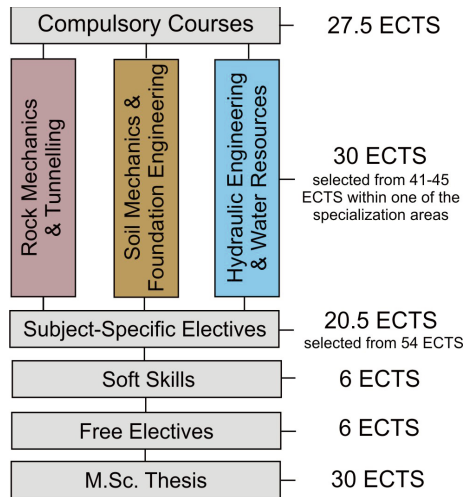
Master of Science in Geotechnical & Hydraulic Engineering

Master of Science in Geotechnical & Hydraulic Engineering

As of October 2015 the Master of Science (M.Sc.) program in Geotechnical & Hydraulic Engineering at the Graz University of Technology is offered entirely in English. The M.Sc. program covers a broad spectrum of teaching and research in Soil and Rock Mechanics, Hydraulic Engineering, and Engineering Geology. Primary focal points include: (1) design, monitoring and construction of foundations, retaining structures, natural and engineered slopes, tunnels, dams, and hydraulic structures; (2) quantification of soil, rock mass, and hydraulic parameters; (3) engineering behaviour of geotechnical materials; and (4) disaster management and natural hazards mitigation. As depicted below, the M.Sc. program provides for specialization in the areas of:

- Rock Mechanics & Tunnelling
- Soil Mechanics & Foundations
- Hydraulic Engineering & Water Resources

A total of 120 European Credit Transfer and Accumulation System (ECTS) units comprise the M.Sc. program. The academic degree granted is the Dipl.-Ing. (equivalent to the M.Sc.).



ROCK MECHANICS & TUNNELLING

The Institute of Rock Mechanics & Tunnelling (RMT) has an international reputation concerning underground design and construction, with specialization in rock mass characterization, the influence of geological conditions on ground behavior in underground construction, development of risk oriented design procedures, geotechnical monitoring and data interpretation techniques, and tunnel construction in poor ground with high overburden. Applied research activities are facilitated by state-of-the-art laboratory and computational facilities, and close cooperation with the engineering and construction industries ensures a smooth transition of research results into engineering practice.

Master of Science in Geotechnical & Hydraulic Engineering

The M.Sc. curriculum in RMT covers a broad range of topics in rock engineering and tunnelling, including numerical methods, tunnel safety and ventilation, laboratory testing procedures, grouting theory and practice, construction contracts for underground works, and geotechnical monitoring and data interpretation. The curriculum provides a strong foundation for professional work in the rock mechanics and tunnelling industries, while also providing the opportunity to develop targeted specialization through the selection of appropriate elective courses.



SOIL MECHANICS & FOUNDATION ENGINEERING

The Institute of Soil Mechanics and Foundation Engineering (SMFE) is recognized internationally for its practically oriented research concerning monitoring and support of slopes and landslides, soil improvement techniques, and numerical analysis in geotechnical engineering (including anisotropic and strain-softening constitutive models and unsaturated soil mechanics). Current research topics include response of soils improved with stone columns to earthquake loading, and experimental investigations regarding the behavior of lacustrine deposits. A fully equipped soil mechanics laboratory is available for performing experimental research and for fulfilling industrial requirements.

The M.Sc. curriculum in SMFE covers a variety of topics, including soil behavior, numerical analysis, plasticity theory, design of geotechnical structures and foundations, soil improvement techniques, excavation support, and measures for stabilizing slopes and landslides. Close collaboration with consultancies, contractors and public clients ensures that the research work is relevant to industry needs and that students are exposed to modern consulting practice.

Master of Science in Geotechnical & Hydraulic Engineering



HYDRAULIC ENGINEERING & WATER RESOURCES MANAGEMENT

The Institute of Hydraulic Engineering & Water Resources Management (HWR) is renowned for research and teaching concerning hydrological and hydraulic processes and methods, including: (1) management of water, debris and sediment within a drainage area; (2) applications of state-of-the-art numerical computational procedures and physical model tests in prototype investigations, including model validation and data analysis techniques (utilizing world-class hydraulic laboratory facilities); (3) risk analysis methods for floods and other natural hazards; (4) selection criteria for implementing sustainable risk mitigation measures; and (5) disaster management strategies and their associated logistical requirements.

The M.Sc. curriculum in HWR focuses on design and construction of hydraulic structures (e.g. embankment and concrete dams, retaining structures, weirs, intakes, spillways and stilling basins, hydraulic run-off computations), including their safety evaluation and maintenance requirements. The curriculum provides a strong foundation for professional work in the water resources and hydraulic engineering industries, while also providing for targeted specialization through the selection of elective courses.

