

University Programme Master of Engineering Hydropower Management

Graz University of Technology

Master of Engineering (MEng) – Hydropower, 5 semester, part-time

Academic Hydropower Engineer, 4 semester, part-time

www.hydropower.tugraz.at



Hydropower is the energy of the future

Contents and Main Focusses

Hydropower is one of the most important energy sources: Qualified engineers are in demand at a national and international level. In this interdisciplinary programme for further education, TU Graz combines expertise from the fields of mechanical engineering, electrical engineering and civil engineering to provide education at the highest level. Environmental protection, sustainability and ecology are included in the programme, as are organisational and economic aspects.

The programme contains the following courses on ecological aspects and the 3 areas of Mechanical Engineering, Electrical Engineering and Civil Engineering:

Mechanical Engineering

- Basic hydraulic principles
- Mechanical engineering materials
- Machine dynamics
- Design details
- Pumped-storage plants

Civil Engineering

- Surge tank concept
- Dam structures, sealing systems
- Construction management
- Hydraulic steel structures

Electrical Engineering

- Basics of electrical machines
- Energy transport, circuit types
- Control technology for hydraulic machines

Interdisciplinary

- The energy industry
- Operational management, maintenance
- Small-scale hydropower plants
- Construction permit planning
- Potential and location analyses

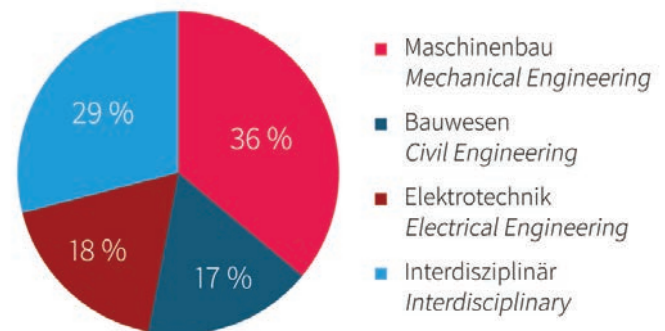
In the master's degree programme Master of Engineering (MEng) – Wasserkraft, you also write a master's thesis.

Structure of the Programme

The programme follows the Blended Learning approach:

- Online teaching – customised documents ensure fast and successful learning – you learn when and where you wish.
- Compulsory attendance events – one attendance event week per semester is scheduled: Experts impart complex factual knowledge. You work on projects with other participants, putting your knowledge into practice.
- Excursions – by means of practical examples on site e.g. in power plants, you get a realistic insight into the topics.

At the end of every course, you take an examination online.



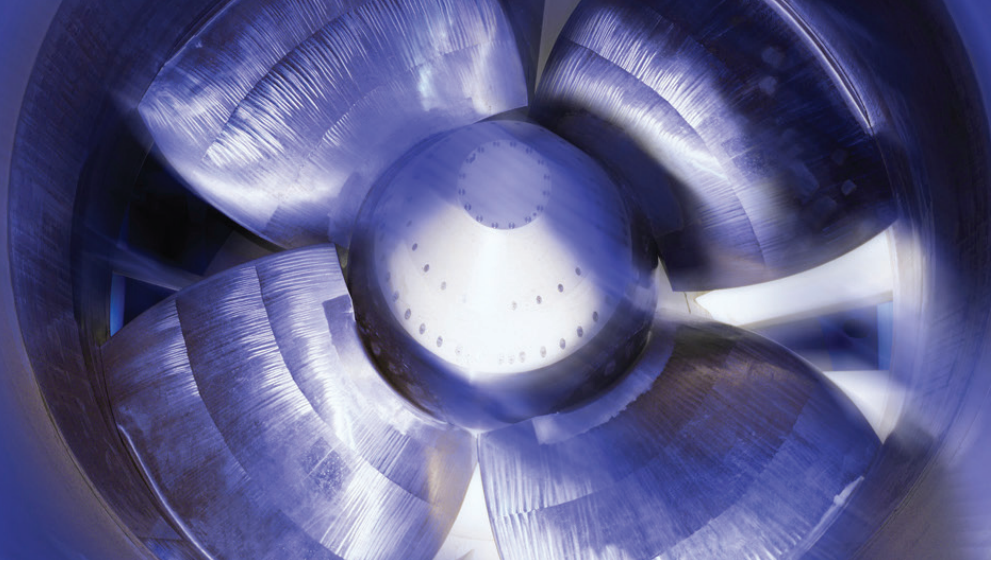
Attendance event at the laboratory of the Institute of Hydraulic Fluid Machinery at TU Graz.



© Fotostudio Furgler

Hydropower is the energy of the future and the hydropower industry is in need of qualified young professionals and lateral entrants.

Helmut Jaberg, programme director and head of the Institute of Hydraulic Fluid Machinery at TU Graz



Admission requirements

You graduate from this university programme after 5 semesters with the degree of Master of Engineering (MEng) – Hydropower. In this case, the following admission requirements apply:

- a completed relevant bachelor's degree programme (Mechanical Engineering, Electrical Engineering, Civil Engineering) from a university or a university of applied sciences
- or
- a completed technical diploma or master's degree programme from a university or a university of applied sciences
- or
- a completed Magister, diploma or master's degree programme in natural sciences or economic sciences from a university or a university of applied sciences plus at least 3 years' experience in the field of hydropower.

The programme management will decide whether the admission requirements have been met.

Dipl.-Ing., M.Sc.,
B.Sc.

Graduates of universities
or universities of applied
sciences with 3 years of
professional experience

**master of
hydropower
engineering**
5 semesters

Graduates of secondary
schools (of technology)
with at least 5 years of
professional experience

Foremen with at least
8 years of professional
experience

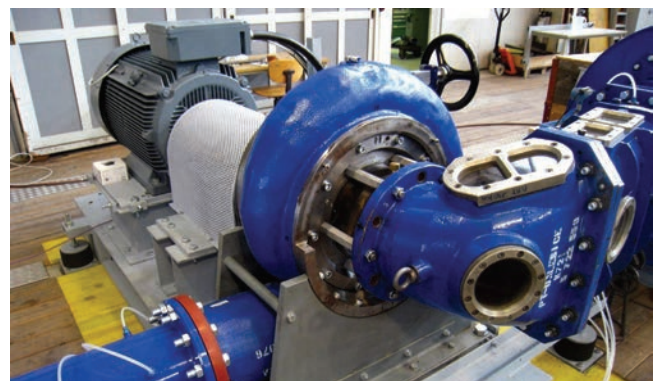
**academic
hydropower
engineer**
4 semesters

Career Options and Qualifications

- You are a competent contact partner in all fields of hydropower.
- You plan hydropower plants globally and can evaluate existing plants.
- You determine the need for refurbishment measures and carry out planning and application tasks.
- You can assess, minimise or even prevent the consequences for the environment and nature of the construction and operation of hydropower plants.
- Your possible future professional fields include positions in planning, consultancy and particularly management in national and international companies and for public authorities, in which your expertise in the field of hydropower is relevant.

Target Groups

This university programme for further education is targeted at people from the field of hydropower who wish to develop their competence technically and professionally.



I have been looking for a continuing education programme for a long time that offers exactly what Life Long Learning at TU Graz does. Attending a part-time programme that is perfectly tailored to my job 20 years after graduating from my basic study programme is a huge asset for me, both professionally and personally. Despite the additional burden of further education, I have not regretted my decision at any point.

*Thomas Gaal, Schweiz,
participant of the University Programme „Master of Engineering (MEng) – Hydropower“*

Final degrees and duration of study

- Master of Engineering (MEng) – Hydropower:
5 semester part-time
- or
- Academic Hydropower Engineer:
4 semester part-time

ECTS credit points

- Master of Engineering (MEng) – Hydropower: 120
- Academic Hydropower Engineer: 80

Language of instruction: English

Registration fees

- 5 semester: Euro 19.500,- (VAT free)
- 4 semester: Euro 17.500,- (VAT free)

This fee does not include travel, lodging or food expenses.

Structure of the programme

part-time
extra-occupational
distance-learning

one attendance week per semester

Dates and Deadlines

- Next start: October 2018
- End of application period: September 2018



Programme Director

Helmut Jaberg, Univ.-Prof., Dr., TU Graz

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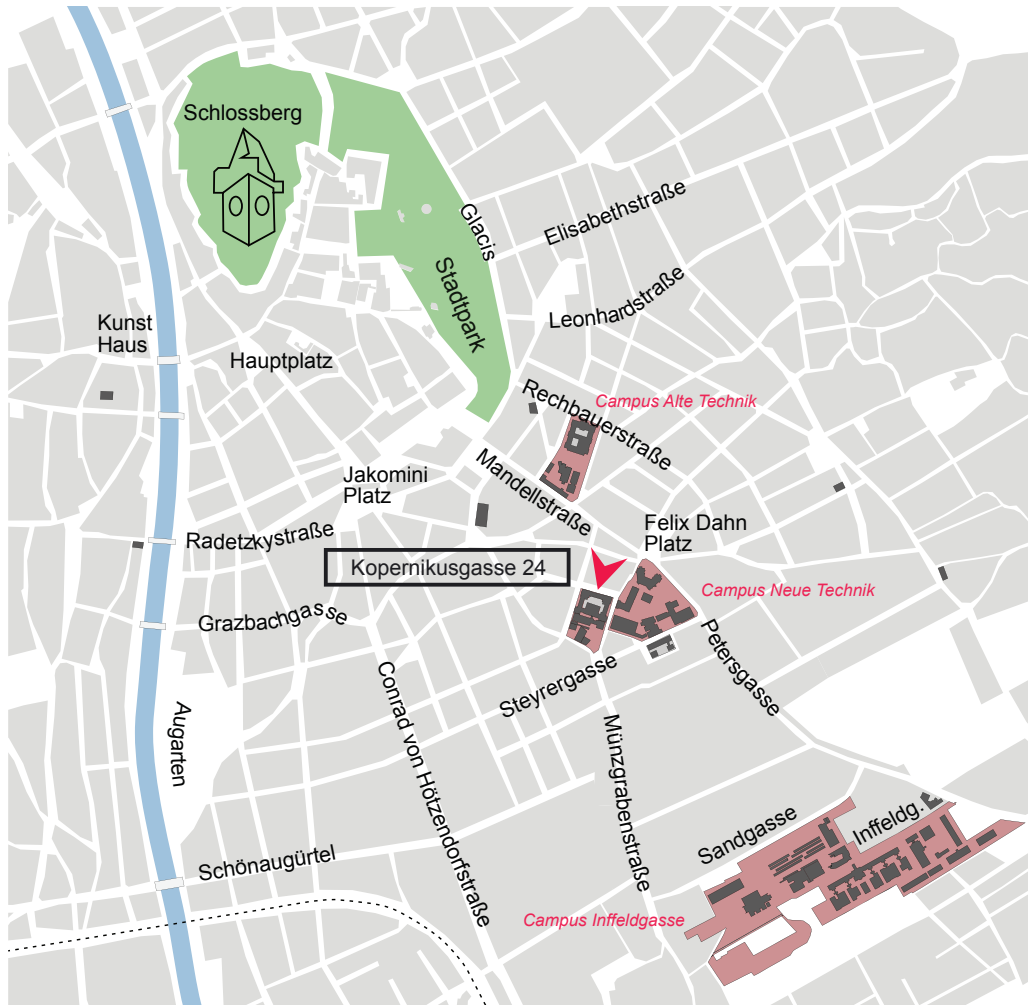
Helmut Benigni, Assoc. Prof., Dr., TU Graz
Thomas Beyer, Dipl.-Ing., Vattenfall
Siegfried Demel, Dr., former VHP
Alfred Hammer, Dr., TU Graz
Oliver Haupt, Dipl.-Ing., KfW
Wolfgang Kofler, Dipl.-Ing., TIWAG
Josef Mayrhuber, Dr., VHP
Peter Meusburger, Dr., VIW
Gerhart Penninger, Dr., VHP
Gerald Zenz, Univ.-Prof., Dr., TU Graz

Partners

Verbund Hydro Power
Tiroler Wasserkraft AG
Vorarlberger Illwerke AG
Vattenfall



Helmut Jaberg (programme Director) and participants and lecturers of the 2nd programme



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Travel by public transport

Station Hauptbahnhof/Annenstraße with tram line 3 or 6 until station Dietrichsteinplatz or Neue Technik (journey of 15 mins.)

Travel by car:

Park in the adjacent streets of Neue Technik (parking fees, max. 3h) or in the following car parks:

Kaiser-Josef-Garage, APCOA AG, Schlögelgasse 5.
 ASTORIA Garage, Dietrichsteinplatz 10