

ELECTRICAL ENGINEERING

MASTER'S DEGREE PROGRAMME, FULL-TIME 

Powering the World!

New technologies such as electric cars or renewable and ecological power supply systems require fundamental research in electrical (energy) engineering. DC grids (used in batteries, hydrogen systems, or to distribute and transport electrical energy), and power electronics are the latest technologies aiming to provide a green and environmentally-friendly energy supply. Introducing SMART technology into our power supply reduces costs as well as increasing reliability and accessibility for the end-consumer. This programme will educate the experts needed to make electrical energy supply sustainable and future-proof. They will be pioneering the future!

Career Profile

This international Master's degree programme meets the demand of the electrical engineering industry which offers products, systems and services in the field of electrical energy engineering and whose companies deal with the development, production, operation and maintenance of electrical products and systems. Graduates are able to work on technically complex and interdisciplinary assignments. Possible careers could be for example related to products or systems responsible for high voltage installations for energy distribution or as a project manager for (further) developing electrical energy engineering products.

Focus of Studies

- » Electromagnetic Fields in Multiphysics Systems
- » Power Electronics, Control & Measurement Engineering
- » High Voltage Engineering
- » Digitalization of Electric Grids
- » Energy Markets & Energy Law, Financing
- » International Management and Development

International Environment

Electrical Engineering is taught exclusively in English. Being able to not only communicate, but work in English automatically gives our students an advantage in an internationally competitive industry. Additionally, we take pride in our international atmosphere, with staff and students representing over 40 different nationalities.

Essential Information

Degree:

Master of Science in Engineering (MSc)

Duration: 4 Semesters (120 ECTS)

Annual Intake: 15 Students

Admission Requirements:

Completed Bachelor's degree (180 ECTS or equivalent) in Electrical Engineering, interest in intercultural team work, English skills at least at B2 level

Application:

Deadlines: Non-EU Citizens May 30th;
EU-Citizens June 30th

www.fh-ooe.at/application

Admission Procedure:

Online application, personal/Online interviews with pre-selected candidates

Internship:

Minimum 10 weeks in Austria or abroad

Language of instruction:

English

Tuition fees:

EU/EEA citizens: 363.36 EUR per semester (plus Austrian Student Union fee).

Citizens from non-EU/EEA countries: 726.72 EUR per semester (plus Austrian Student Union fee).

Curriculum

1 st Semester		
Course Name	semester hours / week	ECTS
Numerical Mathematics and Higher Calculus	3	5
Numerical Mathematics and Higher Calculus (Skills Practice)	2	4
IT Systems for Electrical Power Engineering	2	3
Digital Systems and Digital Systems Engineering	2	3
Measurement Engineering and Sensor Systems II	2	4
Measurement Engineering and Sensor Systems II (Lab)	2	4
Ecology for Engineers	2	3
Basics of Scientific Work	1	2
Cross-Cultural Negotiations	2	2
Total	18	30

2 nd Semester		
Course Name	semester hours / week	ECTS
Statistics	3	4
Electromagnetic Field Theory in Multiphysics Systems	2	4
Electromagnetic Field Theory in Multiphysics Systems (Skills Practice)	2	3
Electromagnetic Field Theory in Multiphysics Systems (Lab)	1	2
Power Electronics II	2	3
Power Electronics II (Skills Practice)	1	2
Power Electronics II (Lab)	2	2
Control Engineering II	2	3
Control Engineering II (Skills Practice)	1	2
Control Engineering II (Lab)	2	3
Design of Printed Circuit Boards (Skills Practice)	1	2
Total	19	30

3 rd Semester		
Course Name	semester hours / week	ECTS
Energy Markets and Energy Law	2	2
International Project Development and Management	2	2
High Voltage Engineering II	3	4
High Voltage Engineering II (Skills Practice)	1	2
High Voltage Engineering II (Lab)	2	3
EMC and EMI Aspects	2	3
EMC and EMI Aspects (Lab)	1	2
Project	0,5	10
Intercultural Leadership and Management	2	2
Total	15,5	30

4 th Semester		
Course Name	semester hours / week	ECTS
Financing	2	2
Master's Seminar	1	2
Master's Thesis	0	24
Master's Exam	0	2
Total:	3	30
Total of all semesters (SH/W)		120

Praxis and Research

Students spend over 50% of class time in labs and skill practice classes, preparing them for hands-on application of their acquired theoretical knowledge. Additionally a strong cooperation with local industry enables our students to obtain real-world experience during their project work and internship. In Semester 3, students begin to focus on their specialty in their project work and continue to increase their competency while working on their Master thesis in Semester 4.

Students are also invited to join in R&D activities at the University. Electrical storage systems, PV systems, e-mobility, power electronics, high voltage and high current engineering, switching devices and lightning protection are a few examples of the areas of principle interest. Our modern high voltage and high current lab provides an optimal research environment, equipped with excellent diagnostic tools, including high speed cameras and plasma spectroscopy.

Did You Know that ...

... electric energy engineers have a strong background in Physics with optimal skills to understand complex mechatronic systems such as electric cars, electrical equipment for energy transport and distribution as well as renewable energy systems? Our graduates are in high-demand!

The University of Applied Sciences Upper Austria in Wels has well-equipped labs, experienced professors, professional technicians, and effective administration. Graduates like myself also get to work as Energy Engineers due to the program's focus on High Voltage Engineering, Renewable Energy and Energy Storage Systems. The goal is to shape a better and more sustainable future in terms of Energy production and distribution.

Neha Ghanbahadur, BSc, Graduate Student

Contact

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