**Projects**
- Solar fuelling station for charging e-bikes
- Energy recovery for e-bikes
- Characterisation and simulation of solar modules
- Development of a transient tester for electronic systems in vehicles with electric motors
- EMC evaluation of systems operated by a frequency converter

**How to apply**
You can apply online at www.hs-ulm.de/EE_apply

Please then send your application to

Hochschule Ulm
Graduate School
Prittwitzstraße 10
89075 Ulm
Germany

**Further Information**
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**Research areas**
- Electric energy and transmission technology
- CIGS thin film solar cells: technology, characterisation and long-term stability
- Electromagnetic compatibility (EMC) in vehicles
- Automotive electronics
- eBike: energy recovery and solar power supply
Learning outcomes

Equipped with a Bachelor’s Degree in an engineering science like e.g. Electronic Engineering, Mechanical Engineering, or Production Engineering with focus on Energy Systems the student will gain a deeper technical knowledge in electric energy systems, regenerative energy generation, electric energy conversion (converter), and electric mobility.

Seminars, presentations, and research projects will provide the opportunity to acquire technical skills and competencies, e.g. in project planning, team management, and presentation techniques preparing the student specifically for a managing position in a company.

Qualification focus

- Modelling, characterisation, and development of electrochemical power sources
- Basic legal conditions for regenerative energy production
- Systems management of and load flow calculations for electricity networks, e.g. smart grids
- Web applications and database outlines for data collection and the management of smart grids
- Mode of operation and technology of solar cells; ability to plan solar plants
- Design and evaluation of power electronic conversion systems using current technologies
- Application of components and systems of the electric mobility

Course details

The content is based on latest findings and developments in local energy technology and its application in electric mobility. Individually adjustable to one’s competencies acquired in a Bachelor’s Degree Course, it will deepen the student’s expertise in the development of energy and electric mobility systems and help to refine the management competencies.

Module group | Modules
---|---
Basics | Power Electronics
Alternatively Applied Thermodynamics, Systems Theory
Technology (Energy conversion and storage) | Photovoltaics
Electrochemical Power Sources 1
Electrochemical Power Sources 2
One Alternative Module*
Applications | Electric Energy Networks
Electric Mobility
One Alternative Module*
Scientific work | Project
Master thesis and seminar

Qualification

Students who successfully complete the study programme will be awarded the academic degree

**Master of Engineering (M. Eng.)**

The degree is accredited and enables the graduate to apply for a doctorate.

Programme structure

The degree course is structured in modules. It is performed full time comprising three semesters with 43 contact hours per week. The course will add up to 90 ECTS including one research project in the first two semesters and the final thesis (Master Thesis).

Since all courses are assessed according to the European Credit Transfer System (ECTS), we may also accept credits from other universities.

Entry requirements

The requirements for the Master’s programme are a first degree with an exceptional classification, and a successful interview with a selection committee. Applicants should be fluent in written and spoken German and English.

The degree programme is offered in both the winter and the summer semester. You must submit your application by **July 1** for the winter semester and **January 1** for the summer semester.

In the case of interest in an informational meeting, please contact our Graduate School graduate-school@hs-ulm.de.