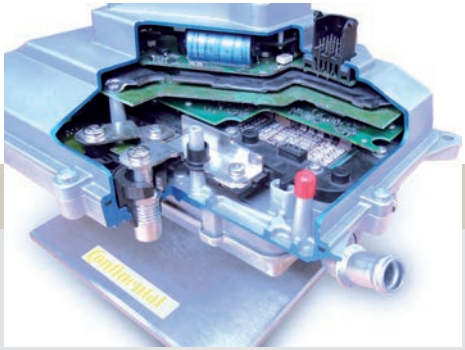
Projects

- 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



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

Application

Please send your application to the following address.

Hochschule Ulm
Graduate School
Prittwitzstraße 10
89075 Ulm
Germany

Further Information

Graduate School (GS)
Angelika Mende M. A.
Room A 205c
Tel. +49 731 50-28144
mende@hs-ulm.de

GS-Office
Sabine Farley
Room A 205d
Tel. +49 731 50-28026
Fax +49 731 50-28041

Dean
Prof. Dr.-Ing. Claus Kröger
Room A 205b
kroeger@hs-ulm.de

www.hs-ulm.de/EE

Titelbild: Daimler AG

Technik
Informatik & Medien
Hochschule Ulm
University of Applied Sciences

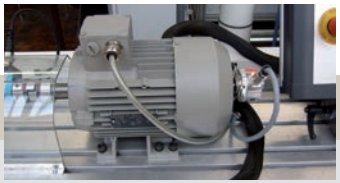
Electric Energy Systems and Electric Mobility

MASTER'S DEGREE PROGRAMME

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. Indidvidually 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 **Alternative modules** like Applied Thermodynamics, Systems Theory
Energy conversion and storage	Photovoltaics Electrochemical Power Scources 1 Electrochemical Power Scources 2 **Alternative modules** like Web technology and data management, Energy Economics, Renewable Energy .....
Applications	Electric Energy Networks Electric Mobility **Alternative modules** like Electromagnetic Compatibility, Sensors and Energy Harvesting Physical methods ....
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 ist 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 course begins in April (summer semester) and in October (winter semester). The application deadlines are the **1st January** and the **1st July** of each year.

For further information regarding the degree course please call +49 (0)731 50-28144 or e-mail to *graduate-school@hs-ulm.de*