E-Mobility and Green Energy

Bachelor
By completely switching to electric vehicles, the power consumption of cars could be lowered by 75 percent. This energy demand could be entirely met by wind energy. (VDE study)

We live in an era of change. Climate, demographics, energy, consumption, mobility - everything is subject to fundamental changes. Urgently needed are new technological leaps and innovations as well as the challenges of environmental protection and climate change. The turnaround in energy policy leads us away from fossil fuels and nuclear energy towards clean electricity from renewable energies such as wind, water and the sun. Here, engineers are needed who can shape this change.

The new E-Mobility-Lab at Ravensburg-Weingarten University will be inaugurated in 2019.

Intelligently Mobile =

Electromobility

Bringing Together Environment and Technology

People's need to be mobile is elementary and unabated. As an engineer of electromobility, it is your task to technically implement the idea of environmentally friendly energy consumption and new concepts; new ones are therefore needed!

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Green, intelligent and efficient

In Germany, an available electrical power from green energies of up to 203 gigawatts is projected for the year 2030. Also on an international level, renewable energies are on the rise and energy supply has become unthinkable without them.

Unfortunately, green electricity is not produced continuously so that the utilities struggle with excess capacities during times of sunshine and abundant wind and supply shortfall during windless nights. Also, the optimization of the power grids is gaining in importance. Energy storage devices and the right management of the future mix of renewable and conventional energy will play a decisive role in reliable energy supply.

As a future engineer of electromobility with specialization in green energies, you will develop ideas on how to design and use intelligent and efficient renewable energy systems able to ensure an environmentally friendly and reliable energy supply. We need students who have this courage for change.

Course of the Studies

As a university of applied sciences, our focus is on practice. Laboratories and an electric vehicle are available for experiments and research projects.

During the basic study period (first three semesters), students will learn the basic principles of electrical and automotive engineering. After that, in the main study period (three semesters), they will opt for one of the two areas of concentration, i.e. electromobility or green energies and deepen their knowledge by choosing suitable electives.

The fifth semester is a practical semester. The students will work in a regional company on current projects. Students graduate from this study program after seven semesters with the internationally recognized Bachelor of Engineering (B.Eng) degree.

In the summer semester, the study program has an international orientation. This means that for students starting in the summer, the lectures of the first four semesters are held in English, whereas in the sixth and seventh semesters, the medium of instruction is German. For students beginning in the winter semester, all courses are taught in German.
### Course of the Studies

| Fundamentals | • Mathematics  
| • Programming  
| • Physics  
| • English  

| + Digital Circuit Technology | • Digital Technology  
| • Microcontroller  
| • Digital Signal Processing  
| • Embedded Systems  

| + Electrical Engineering | • Analysis of Electric Networks  
| • Electrodynamics  
| • Circuit Analysis in the Time and Frequency Domains  
| • Circuit Design  

| + Control Engineering | • Control Engineering  

| + Automotive Engineering | • Electric Powertrains  
| • Hybrids in cars  
| • Machinery Design  
| • Automotive Engineering  

| + Green Energies | • Energy Storage  
| • Photovoltaics  
| • Green Energies  

| + Electromobility | • Traffic Telematics  
| • Automotive Electronics Controls  

= Electromobility and Green Energies

### At a glance: E-Mobility and Green Energy

#### Degree
Bachelor of Engineering (B.Eng.)

#### Duration of study
7 semesters, including 1 practical semester

#### Start of course
- winter semester (German) or summer semester (English)

#### Application deadline:
- July, 15th for winter semester (national)
- November, 15th for summer semester (international)

#### Prerequisites
Entrance qualification for universities of applied sciences, subject-related or general university entrance qualification

#### Pre-study internship
is required for German students (8 weeks). International students do not have to bring a pre-study internship. The practical semester will be extended by 6 weeks instead.

#### Postgraduate Master’s studies
Electrical Engineering, Mechatronics, Electromobility

#### Online application
www.hs-weingarten.de

#### Head of Program
Professor Dr. Andreas Siggelkow
Email: siggelkow@hs-weingarten.de