



Energy and Environmental Engineering - Bachelor of Engineering -

YOUR PROFESSIONAL ENVIRONMENT

The mechanical engineering sector with the production of investment goods is one of the biggest industrial sectors of Germany, also when it comes to exports. Power Engineering has become one of the most important areas in this sector, with double-digit annual expansion rates. At the same time, more and more small and medium-sized enterprises (SME) need engineers with knowledge in the area of generation and distribution of power, as well as efficient use of energy resources.

Development and operation of state-of-the-art power facilities requires up-to-date knowledge of various disciplines such as electrical engineering, physics, computer science, business administration, legal issues, marketing and controlling. There is a great overlap of these disciplines, hence the studies and ensuing professional activity are characterised by a holistic approach (comprehensive range of knowledge). Engineers of Environmental and Power Engineering will work in an interdisciplinary manner on the following sectors:

- Project planning of entire plants
- Technical coordination of inter-disciplinary tasks (system integration)
- Design and development
- Environmental management systems
- Safety engineering and environmental protection
- Process optimisation and reduction of costs for energy

JOB PROSPECTS

Graduates of degree courses based on Mechanical Engineering with distinct knowledge in the environmental and power sectors are currently in high demand by industry.

With costs for energy on the rise and the shortage of resources increasing, many new tasks have emerged in the service sector as well, dealing with ecology, power generation from renewable energies, or plant simulation (software development).

The ongoing public discussion on climatic change will continue, and ensuing political objectives will continue to bring about double-digit growth rates for manufacturers of industrial equipment and facilities for

generation of renewable energies, creating more, attractive jobs in its wake.

Your graduation from our degree course Environmental and Power Engineering, based on Mechanical Engineering, will grant you excellent job prospects in any region of Germany or Europe!

YOUR PROFILE

An important prerequisite is your enthusiasm for technology, a good ability to visualise mechanical and thermal processes, and an interest in mathematics and physics. These areas in particular are suitable for women, too.

HOW THE STUDIES ARE ORGANISED

During the basic studies period (semesters 1 and 2) you will learn the foundations of science and technology. While these modules are very similar to the ones of Mechanical Engineering, you will already attend lectures in subjects related to Power Engineering (e.g. Technical Thermodynamics).

The advanced studies period (semesters 3 to 7) includes the work placement semester (semester 5). In semester 3 and 4 you will gain knowledge of advanced core subjects of Mechanical, Electrical and Power Engineering. In the two final semesters (6 and 7) you will choose electives with contents from energy and power engineering in order to deepen your specialist and practical knowledge on this field. Moreover, you will customise your studies by selecting specialisation modules and electives from a comprehensive catalogue. You may place your personal study focus on power supply management for companies, on environmental engineering or on renewable energies, to name but a few.

You will top off your studies with a Bachelor thesis which can be done either in a company or at the university and you will graduate with the academic award Bachelor of Engineering (B.Eng.).

PRACTICE-ORIENTED TRAINING IN COMPANIES

An important feature of studying at Kempten University of Applied Sciences is the close linkage of theory with practice. In addition to the work placement semester, you will be required to complete a so-called "Vorpraktikum", i.e. a six weeks work placement prior to studies. Possible fields of activity are general metal work, work at a machine tool, assembly, etc. If you have worked in a Technology or Engineering environment before, you may be exempt from doing the pre-study work placement.

LIST OF STUDY MODULES

Basic Studies (Semesters 1 and 2)

- Basics of Power Systems
- Mathematics for Engineers
- Computer Science for Engineers
- Physics and Chemistry
- Materials Science
- Introduction in Electrical Engineering
- Technical Mechanics and Strength of Materials
- Design and Machine Elements
- Technical Thermodynamics

Advanced Studies (Semesters 3 to 7)

- Electrical Engineering, Electrical Drives, Electronics
- Measurement, Control
- Mathematics and Simulation of Dynamic Systems with Applications
- Heat Transmission
- Technical Fluid Dynamic
- Manufacturing Processes
- Efficient Energy Systems and Transformation of Energy
- Power Industry and Power Distribution
- Power Machines and Work Machines
- English
- Projecting Power Facilities
- Interaction of Power Systems
- Editing Technical Documentation
- Complementary Lectures to Work Placement
- Alternative Specialisation Modules
 - Power Supply Management (Heat, Cold, Compressed Air) for Companies
 - Environmental Engineering and Renewable Energies
- Specialisation Modules and Electives:
 - Company Utility Engineering
 - Efficient Power Supply, Power Plant Engineering
 - Renewable Energies, New Technologies
 - Environmental Engineering and Process Engineering
 - Other individual specialisation modules
- Bachelor Thesis

FURTHER QUALIFICATION

Our University offers several Master programmes for your further qualification:

- "Technology Management" as a 5-semester part-time degree course of further education, in cooperation with Augsburg University of Applied Sciences
- Automation and Drive Engineering as a 3-semester consecutive Master (currently in project).

CONTACT

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IMPORTANT LINKS

(Information in English on our website)

www.hs-kempten.de > INTERNATIONAL > click English flag (in the top left-hand corner)

[Information for international exchange students](#)
(> INTERNATIONAL > EXCHANGE STUDENTS / INCOMING)

[Study programmes – short description in English](#)
(> INTERNATIONAL > DOWNLOADS > Study Programmes)

[Guests and Visitors at Kempten University](#)
(> INTERNATIONAL > GUESTS AND VISITORS)

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PLEASE NOTE that, although this description is written in English, the study course is taught in German.