



Energy Engineering - Master of Engineering -

WHY CHOOSE THIS COURSE?

You graduated from a Bachelor's or German Diplom degree course in the areas Energy Engineering, Mechanical Engineering or Production Engineering and seek to enhance your academic profile by gaining a higher academic degree.

This Master's degree course in Energy Engineering will increase your expert knowledge with up-to-date teaching methods such as computer simulation in energy and automotive drive technology and methods for system analysis. This will provide you with optimal qualification for complex and innovative tasks related to energy systems and technologies.

Our degree course offers broad-based study contents: conventional renewable and innovative technologies and systems will be dealt with. Related topics, such as automotive drives will be part of the curriculum, too. After graduation you may find work in various sectors of the industry.

Numerous training modules in the university's laboratories will enhance your practical knowledge. You will encounter and use state-of-the-art technology.

You are seeking a project management or leadership position, or any activity in research and development and wish to gain enhanced qualification.

Flexibility: our postgraduate, consecutive course of studies can be completed either in 3 semesters full-time or 6 semesters part-time.

The "Master of Engineering" degree awarded will formally enable you to apply for a doctoral or Ph.D.-programme in Germany or abroad. It also enables to enter the so-called "higher civil service" in state-owned institutions in Germany.

YOUR JOB PROSPECTS

Energy Engineers will find work in mechanical and plant engineering, in energy and processing technology, in power supply companies, in the automotive and automotive parts industry, in companies or public institutions with high energy consumption, or in independent engineering firms. Many new jobs have been created by Germany's turnaround in energy policy.

WHAT WILL YOU BE DOING AFTER GRADUATION?

- Planning and projecting of industrial plants
- Industrial research and development
- Entry in an academic career
- Technical coordination of interdisciplinary tasks, system integration
- Process optimisation, e.g. developing methods to reduce energy costs
- Introduction of energy and environmental management systems in your company
- Counselling, distribution, services, etc.

STUDY CONTENT

Deepening of basic knowledge:

Advanced basics, e.g. thermo fluid dynamics, energy storage by electro-chemical means

In-depth studies of methodical knowledge:

Advanced methods, particularly software application, such as computational fluid dynamics (CFD), analysis and simulation of complex systems, e. g. power plants and energy-efficient automotive drives, software for gathering and processing measurements

In-depth studies technologies:

Analysis and detailed and comprehensive understanding of energy components and systems, based on fundamental technology modules of the undergraduate studies, e.g. renewable energies, cogeneration, energy storage systems, refrigeration technology, automotive drives, power plant technology

Interdisciplinary basics:

Additional competences, e.g. project management and methods of economic efficiency calculation:

Start of studies is possible in both, winter and summer semester.

COURSE OUTLINE

Semester 1

- Fundamentals of Vehicle Drives & Components
- Thermo Fluid Dynamics and Flow Simulation
- Cogeneration
- In-Depth Studies and Application of Renewable Energies
- Renewable Energies: e.g. Wind Power Systems
- Elective: e. g. Refrigeration Engineering, Photovoltaics

Semester 2

- Conventional and Alternative Drive Concepts
- High-Temperature Materials, Batteries and Fuel Cells
- Energy Storage Systems and Intelligent Energy Systems
- Power Plant Technology: Components
- Power Plant Technology: Power Plants
- In-Depth Studies Methodical Competences: e. g. Electrical Metrology

Semester 3

- In-Depth Studies of Business Administration
- Project and Organisational Management
- Master Thesis

ADMISSION

Admission requirement is a first degree in Energy, Mechanical, Production, Process or Aeronautics Engineering, or a similar degree course in which a minimum of 210 ECTS-credits were earned. Applicants who have successfully graduated from a first-level technology degree course not mentioned above, e.g. in Electrical Engineering, Industrial Engineering or Food and Packaging Technology are required to prove a minimum of 10 ECTS-credits in thermodynamics or fluid mechanics. If these 10 ECTS-credits are missing, admission can be granted on the condition that they will be completed before registration of the Master's thesis.

Applicants from Bachelor's courses of 180 ECTS-credits (or 140 credit hours) without compulsory work placements, as is often the case with applicants from German research universities, must in addition prove engineering work of 20 weeks.

The number of study places is limited. Selection will be made on the basis of the application's correctness in terms of form and deadline as well as the average grade of the first-level studies.

CONTACT

Course coordinator

Prof Dr-Ing. Matthias Finkenrath
[matthias.finkenrath\(at\)hs-kempten.de](mailto:matthias.finkenrath(at)hs-kempten.de)

International Relations Coordinators

Prof Dr Ing Thomas Garber
[thomas.garber\(at\)hs-kempten.de](mailto:thomas.garber(at)hs-kempten.de)
Phone +49 831 2523-221

International Office

Tel: +49 831 2523-340 or -117
E-mail: [international\(at\)hs-kempten.de](mailto:international(at)hs-kempten.de)

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)

KEMPTEN UNIVERSITY OF APPLIED SCIENCES

Bahnhofstraße 61
87435 KEMPTEN (Allgäu)
GERMANY
Tel: +49 831 2523-0
Fax: +49 831 2523-104
[post\(at\)hs-kempten.de](mailto:post(at)hs-kempten.de)

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