

Information Sheet

Course of Study

Energy Technology and Energy Efficiency

General Information

This degree programme is about the sustainable use of energy and the utilization of energy sources that are replenished as they are used, such as wind, water, the sun and sustainably grown crops. This type of energy is almost inexhaustible and far more efficient than fossil fuels, guaranteeing climate protection and the preservation of natural resources.

The programme provides the know-how required to develop and optimise environmentally friendly technologies for the generations of tomorrow. Given the importance of environmentally friendly technologies in virtually any field of industry, graduates enjoy excellent career prospects and a high employability rate.

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The programme takes **seven semesters** to complete and consists of six theoretical semesters and a practical one during semester 5 which should be 22 weeks in duration. In addition, students have to serve an obligatory twelve-week pre-study practical training either prior to the start of study or during lecture-free time by the end of the fourth semester. The curriculum provides a sound basis in **mathematics and natural sciences**, as well as a wide range of general **engineering skills**.

The programme is divided into **modules**, which in turn are combined into **module groups** according to the course content. The **first module group** provides students with the **mathematical and scientific fundamentals** and comprises the following modules:

- Mathematics
- Physics
- Basics of Chemistry and Biology
- Materials Science
- Technical Mechanics and Design
- Electrical Engineering and Information Technology

The **second group - fundamentals of science and engineering** - builds on the skills provided by the first module group and partly includes modules from the **field of energy technology and energy efficiency**, such as

- Thermodynamics and Fluid Mechanics
- Process Engineering
- Heat Transfer and Reaction Kinetics
- Biotechnology
- Physical Chemistry

- Department Amberg: Kaiser-Wilhelm-Ring 23, D-92224 Amberg, Phone: ++49 (0)9621 482-0, Fax: ++49 (0)9621 482-4991
- Department Weiden: Hetzenrichter Weg 15, D-92637 Weiden i. d. OPf., Phone: ++49 (0)961 382-0, Fax: ++49 (0)961 382-2991
- E-Mail: info@oth-aw.de / Internet: <http://www.oth-aw.de>

- Control Engineering
- Measurement and Sensor Technology
- Environmental Chemistry
- Environmental Analysis

The **third module group** - designed to lay the groundwork for the further course of study – includes **engineering related content**, such as

- Electrical Power Engineering
- Energy Conversion in Engines and Machines
- Combustion Engine Technology for Renewable Fuels
- Efficient Energy Utilisation
- Decentralised Energy Systems
- Energy Conversion Systems
- Fuel Cell Technology
- Integrated Energy Concepts
- Thermal Waste Treatment
- Basics of Energy Technology and Energy Management

Two additional groups of **interdisciplinary** modules allow sufficient flexibility for further specialisation in areas of individual interest.

Many lectures are complemented by practical projects and laboratory experience. Students benefit from the University's **state-of-the-art laboratories** and gain **hands-on experience** right from the start of study.

The 7th semester is intended for the completion of the final research paper (**Bachelor 's Thesis**) on a topic related to Energy Technology or Energy Efficiency.

The programme leads to a **Bachelor of Engineering degree (B. Eng.)**.

Prof. Dr.-Ing. Werner Prell

Phone: ++49 (0)9621/482-3329

international@oth-aw.de

www.oth-aw.de