

# information sheet course of study

## Renewable Energies

### General Information

The University of Applied Sciences Amberg-Weiden will offer a new programme at the Faculty of Mechanical Engineering / Environmental Engineering in Amberg called „Renewable Energies“ starting winter semester 2008 / 2009. On one hand, this new offer will convey the necessary engineering knowledge and on the other there is the obligatory specialisation in the fields of environmental-oriented power engineering and interdisciplinary competences. This should have particular appeal to students who want to specialize on the comprehensive field of environmental-oriented power engineering from the very beginning. The programme focuses on energy-supply which is oriented towards environmental needs and protects the resources but is also efficient – a topic strongly discussed in public right now. Apart from purely technical and ecological aspects, there is also an emphasis of ethnic and economic implications of the technologies in use. Due to this there is in addition to the classical energy conversion processes a strong concentration on particularly carbon dioxide-neutral technologies such as the utilisation of solar, wind and bio energy. A special focus is set on methods of the efficient use of energy.

### Course of Study

The programme is 7 semesters in duration and consists of six theoretical and one practical semester which has to be completed during semester 5 and should be 22 weeks long. Plus, there is an obligatory twelve-week pre-study practical training which has to be finished either before the start of the study or during lecture-free time by the end of semester four. The programme is subdivided into **modules**. These are:

- Scientific and Engineering Basics I und II
- Environmental-oriented Power Engineering
- Specialisation
- Interdisciplinary Competences
- Practical Training

The **first phase** is for setting the basics in science and engineering. Lectures are:

- Mathematics
- Physics
- Basics in Biology und Chemistry
- Materials
- Technical Mechanics and Construction
- Electrical Engineering and Information Technology
- Thermodynamics and Fluid Mechanics

During the **other two phases** there is the transfer, specialisation and application of the acquired basics, a practical semester included. Lectures during these phases 2 and 3 are:

- *Scientific and Engineering Basics* (such as process engineering, heat transmission and reaction technology, bio technology, physical chemistry, control and feedback control systems, measuring and sensor technology, environmental chemistry, environmental analysis).
- *Environmental-oriented Power Engineering* (such as electrical power engineering, conversion of energy in power and work machines, combustion engine technology for renewable resources, efficient energy-utilisation, local energy systems, integrated energy concepts, thermal processes of waste management, basics in power engineering and power industry).
- *Specialisation Renewable Energies* (subject-related electives, such as bio gas technology, combustion technology for biomass, process simulation, wind energy, water energy, energy storage, hydrogen, geothermal energy, solar power plant, climate change, etc.).
- *Interdisciplinary Competences* (such as business and management, environmental law, business ethics and ethical business)

The **bachelor thesis** is then written during semester 7.

The programme ends with the awarding of **Bachelor of Engineering (B. Eng.)**.

### Student Advisory Service in Amberg

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