

# Information Sheet

## Course of Study

# Medical Engineering

### General Information

In the summer semester of 2010, the OTH Technical University of Applied Sciences Amberg-Weiden introduced a dedicated Bachelor programme in Medical Engineering. The Medical Engineering curriculum covers the essential domains and competencies for research and development, testing, manufacturing, as well as service and maintenance of medical components, devices and systems.

Students acquire required clinical and medical expertise in combination with practically orientated applied knowledge in science and engineering fields. Special attention is given to such topics as regulatory affairs and quality management in research and development, as well as production of medical products and devices.

The bachelor programme provides students with the skills and abilities required to work in both national and international companies in the medical engineering industry. Typical positions and jobs include for example:

- Research and development, testing, service and maintenance of medical systems and devices, e.g. instruments/devices for surgery, for imaging procedures (e.g. x-ray and magnetic resonance), in vitro diagnostics, medical record systems and medical imaging processes.
- Product management, consulting, sales.
- Maintenance of diagnostic and therapy systems.
- Quality management and regulatory affairs
- Planning, deployment and procurement of medical devices integrating medical and technical aspects

### The Programme

The programme duration is seven semesters with a modular curriculum of six classroom semesters and one internship semester. Successful completion of this programme leads to the academic degree of **Bachelor of Engineering (B. Eng.)**

The programme is structured into five different module groups:

- Sciences
  - Mathematics
  - Applied Statistics and Design of Experiments
  - Radiation Physics
  - Biophysics
  - Optics and Laser Technology
- Precision Engineering
  - Technical Mechanics
  - Vibration Mechanics
  - Development and Design
  - Computer Aided Engineering
  - Handling and Packaging Technologies
  - Biomechanics and Ergonomics
- Electrical Engineering
  - Electronical Engineering and Electronics
  - Software Engineering
  - Computer Architecture und Networks
  - Signal Processing
  - Database Systems and Clinical Workflow
- Medical Engineering
  - Functional Anatomy
  - Physiology
  - Radiology and Nuclear Medicine
  - Medical Material Science
  - Diagnostic Systems
  - Therapeutic Systems
  - Medical Product Development
  - Medical Imaging
  - Medical Manufacturing Processes
  - Quality Management and Regulatory Affairs
  - Medical Certification Processes
- Integrative Disciplines
  - Service and Maintenance Management
  - Trends in Healthcare and Healthcare Economics
  - Hospital Management
  - Cost and Performance Accounting
  - Medical English

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