

Information Sheet

Course of Study

Innovation Focused Engineering and Management (Master)

General Information

The consecutive master programme “Innovation Focused Engineering and Management” (IFEM) provides an interdisciplinary education by combining mechanical engineering and additional skills in management, law and patent research. Through the course, graduates acquire in-depth knowledge in their area of specialisation and a diverse range of problem-solving frameworks for identifying and resolving current environmental issues.

The program is designed to enable students to organise, moderate and manage technical projects and teams in a manner that encourages further development and innovation.

Course of study

The programme takes three semesters to complete and is divided into three stages. The **first stage of study** provides a sound basis in **scientific and technical aspects** of innovation. Modules involve

- Scientific Basics of Current Fields of Innovation
- Methods of Integrated Product Development

The technical modules are complemented by **legal and management subjects**, including

- Basics in Industrial Property Law
- Private Business Law
- Technology and Innovation Management
- Marketing for Innovative Products
- Strategic Management Concepts

as well as **additional qualifications** in

- Research Techniques
- Communicative Competence and Moderation Skills

The **second stage** (semester 2) allows for **further specialisation** in areas of individual interest. Students can choose between specialised areas in **Laser Technology** and **Simulation**.

Modules in **Laser Technology** include

- Laser Technology
- Innovative Production Systems and Processes
- Machine Tools
- Rapid Manufacturing
- Laser Technology Applications
- Laser Measurement Technology
- Laser Material Processing

The area of **Simulation** comprises the following modules:

- Robotics and Machine Tool Simulation
- Advanced Mechanics
- Dynamic Simulation of Flexible Multibody Systems
- Finite Element Method
- Fluid Dynamics Simulation
- Computational Fluid Dynamics
- Simulation of Polymer Processing
- Structural Durability and System Reliability
- Information Processing in Mechatronic Systems

The **third semester** is intended for individual research and for the completion of the final research paper (Master's Thesis).

The programme leads to a **Master of Engineering degree (M.Eng.)**.

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