

Computer-Aided Engineering (M. Eng.)

Departments at <i>FH</i> :	Electrical Engineering & Computer Engineering Mechanical Engineering
Departments at University:	Electrical Engineering & Information Technology Aerospace Engineering
Degree Awarded:	Master of Engineering
Form of Study:	integrated master's program
Language of Teaching:	German
Commencement of Study:	Spring trimester
Standard Period of Study:	18 months
Academic Counseling:	Department Chairs of Electrical Engineering & Computer Engineering and Electrical Engineering & Information Technology
Homepage:	http://www.unibw.de/mb http://www.unibw.de/etti

I) Program Description

Engineers who specialize in mechanical engineering, electrical engineering, computer engineering, information technology, and communication technology are often confronted with demands such as shortening development phases, saving of material, improving quality, and increasing competitiveness. Such demands can only be met with the help of computer-aided tools.

The aim of this master's program is to provide its students with the knowledge needed to solve problems in the areas of mechanical, computer, and electrical engineering by applying scientific methods and utilizing computer-aided tools. Thus modelling and simulation as well as design and construction of test stations play an important role in this program. In addition, students examine concrete examples taken from actual scenarios in the industry.

This practice-oriented master's program is designed to educate future leaders in the field of engineering, whether in the military or in civilian careers. Scientific knowledge in the field of engineering is therefore complemented with seminars on personality development and management methods and techniques in order to prepare students for leadership positions.

II) Prerequisites

One of the following is required in order to be admitted to this master's program: a bachelor's degree in Applied Computer & Communication Technology or Mechanical Engineering, or a comparable bachelor's degree (with an above-average GPA), comprising at least 210 ECTS points. The program mainly requires theoretical and practical knowledge in the fields of electrical and mechanical engineering. In addition, candidates should be interested in applying computer-based development tools to solve engineering problems.

III) Abilities & Tendencies

In principle, students in this program should be interested in interdisciplinary work and are expected to have a strong practice-oriented undergraduate education in electrical engineering, computer engineering, or mechanical engineering. Furthermore, students should be prepared to become acquainted with the other engineering branches as the need arises. In addition to the standards expected of all master's students with regard to approaching questions in a theoretical way, students in this program must be willing to take on independent, experimental assignments.

IV) Structure of the Program

The master's program is divided into three theory-oriented trimesters of three months each, a nine month period to complete a project study or research project, and a period following the third theory-oriented trimester dedicated to completion of the student's master's thesis. The first trimester provides students with a thorough, unified basis in higher mathematics and in computer-aided acquisition and analysis of measurement data. During this time students are also expected to attend non-theoretical courses in the framework of *studium plus*, a supplementary program that is interdisciplinary in nature. In the second and third trimester, students choose two areas of focus based on their own interests. The following areas of focus are currently offered:

- CAD/ CAM
- Computational Engineering
- Simulation and Experimentation Technology
- Electronic Design Automation
- Security Engineering
- Software Design

V) Careers

Graduates of this master's program are qualified to fill leadership positions in technical fields requiring interdisciplinary know-how. This is especially relevant to planning, specification, development, organization, setting up operations, and working with complex technical systems such as machines, computerized facilities, as well as automobiles, boats, and airplanes. Graduates are qualified for a variety of positions in companies that are active in fields such as mechanical engineering, the communication and IT industry, power supply, the automobile industry, or the aerospace industry. They are also prepared for careers in the military or as engineering consultants. In addition, thanks to their interdisciplinary education, graduates are able to work their way up to leadership positions very quickly.

VI) Further Information

For more information on study at the Universität der Bundeswehr München and the application process, please visit www.unibw.de/studienberatung .