

Graduation

The internationally recognized academic degree of Bachelor of Engineering (B. Eng.) will be conferred by the Ernst-Abbe-Hochschule University of Applied Sciences Jena on students who have successfully completed the programme.

Entrance Requirements

The entrance requirements for the course are a general university entrance qualification or higher education entrance qualification. A pre-study industrial placement is not required. Programme language is German. International students who apply for the full-time course have to pass the language exams DSH 2 or DSH 3 or Test DAF with 4 or 5 points in all portions. More information about entrance requirements can be found on the following site: www.eah-jena.de

Professional Perspectives

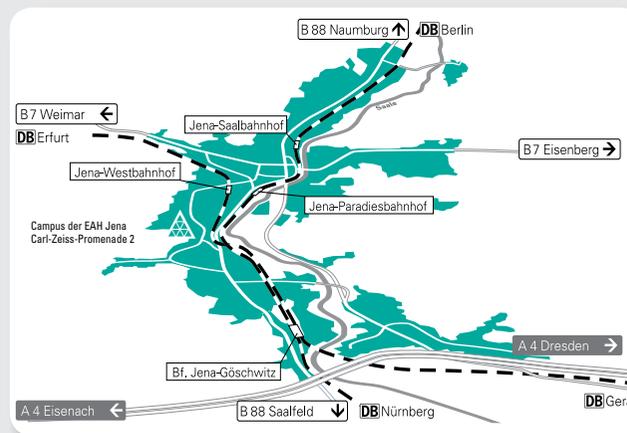
Thanks to their sound training focusing on mechanics, electronics, optics and computer sciences, our graduates are in great demand both at home and abroad with companies manufacturing precision engineering products and with companies in sectors that are not at first glance associated with the manufacture of precision engineering products (the automotive industry, aerospace engineering and research institutes).

Graduates with suitably extensive knowledge can in most cases choose from a range of offers from industry or can find employment directly with the company where they write their Bachelor thesis. Salaries and promotion prospects are excellent. In view of the small numbers of students enrolling for courses in the classical engineering courses in recent years, a Bachelor's degree course in technical disciplines, especially in precision engineering, can also be recommended over the long term to students leaving secondary education who are interested in the applied sciences.

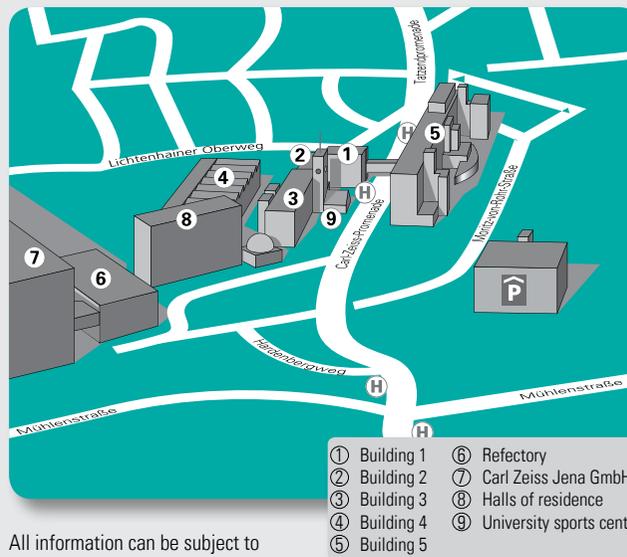
Following successful completion of the Bachelor's course, graduates are able to go on and take consecutive Master's courses at the SciTec Faculty at the Ernst Abbe University of Applied Sciences. Appropriate specialisation courses are also offered by many other universities both home and abroad (such as the University of Technology Ilmenau).

Application	www.eah-jena.de/bewerbung
Dean's office	Phone: +49 (0)3641 205-400 Fax: +49 (0)3641 205-401 Email: scitec@eah-jena.de
Course director/ Course consultant	Prof. Dr. Dieter Wartenberger Phone: +49 (0)3641 205-427 Email: Dieter.Wartenberger@eah-jena.de

Road and rail links



Campus map



As of: August 2017

- ① Building 1
- ② Building 2
- ③ Building 3
- ④ Building 4
- ⑤ Building 5
- ⑥ Refectory
- ⑦ Carl Zeiss Jena GmbH
- ⑧ Halls of residence
- ⑨ University sports centre

All information can be subject to additional change. No legally binding claims can be inferred from this informational flyer.

Foundation for the Accreditation of Study Programmes in Germany
Accreditation Council
Successfully accredited by ACQUIN



Ernst-Abbe-Hochschule Jena
University of Applied Sciences

Carl-Zeiss-Promenade 2, Postfach 10 03 14, 07703 Jena, Germany



Photos: EAH Jena, S. Reuter, I. Rodigast

Precision Engineering

Bachelor's Degree Course

INNOVATION FOR QUALITY OF LIFE.
Health, Precision, Sustainability & Networking

B. Eng. Precision Engineering

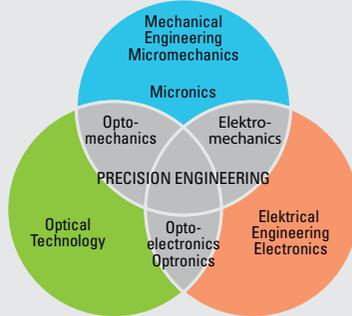
Course Contents and Objectives

Precision engineering is a modern engineering science in which the technical disciplines of **mechanics/micromechanics, electrical engineering/electronics, optics/micro optics** and **information technology/computer sciences** are combined with the aim of developing innovative products. The increasing range of functions and complexity of precision engineering devices is made possible in most cases only by the interplay of the individual disciplines, making this a special feature of precision engineering.

The precision engineering programme is a state of the art, multifaceted, interesting and practical oriented covering ground-breaking technical areas and guaranteeing students excellent employment prospects in a wide range of fields.

The precision engineering programme covers individual subjects from the field of mechanical engineering and is supplemented by additional innovative fields of knowledge such as:

- ▶ Precision mechanics
- ▶ Application of mechatronic and microsystem components
- ▶ Electronics
- ▶ Technical optics.



Examples of the application of precision engineering include:

metrological devices such as interferometers, theodolites, microscopy, devices for manufacturing microelectronic and microtechnical components such as waver-steppers and high-performance lenses, medical devices, the automotive industry, aerospace engineering, environmental engineering, consumer technology e.g. large-screen TV projectors and flat screens.

The development of these areas of application would be impossible without precision engineering. The devices found in laboratories and



	Module 1	Module 2	Module 3	Module 4		Module 5	
1st Semester	Mathematics I	Physics I	Materials Science and Testing	Engineering Mechanics (I)	Project I	Electrical Engineering	Computer Sciences
2nd Semester	Mathematics II	Physics II	Basics of Engineering Design/ CAD	Engineering Mechanics (II)			
3rd Semester	Machine Elements	Basics of Measurement Technology	Control and Automation Engineering	Introduction to FEM	Basics of Quality Management	Electronics	Technical English
4th Semester	Optics - Fundamentals and Applications	Electrical Drives	Basics of Gear Engineering	Production Engineering I	Precision Instrumentation		
(5th and 6th semester)	Voluntary Year Abroad (30 weeks)						
5th (7th) Semester	Construction of Instruments	Transmission and Control Engineering	Production Engineering II	Modern Production Engineering	Micro-system Engineering	Business Administration	Elective Module
6th (8th) Semester	Soft Skills	Internship		Bachelor Thesis			Colloquium

Recommended elective modules	3D-CAD / SPM	CAD / CAM	CAM Prototyping	Industrial Measurement	Precision Micro Drives	Basics of Optical Technologies	Microscopy	English for Academic Purposes	Further Foreign Language	Micro-computer Techniques
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industrial companies which measure and manipulate objects or data with ever greater precision have all been manufactured and designed by precision engineers. Many medical examinations and treatments would be impossible without devices and instruments made by precision engineers. Microelectronics is both the subject and the tool of precision engineering. Precision engineers working in collaboration with other specialists develop devices for manufacturing microelectronic components. Microelectronic technologies, on the other hand, have been used for a fairly long time for developing and manufacturing microsystems which combine mechanical, optical and electronic functions in ever smaller components.

Employment Opportunities

The fields of work for graduates from the Precision Engineering course include **manufacturing of precision equipment, the optical industry, optoelectronics, medical engineering, the automotive industry, aerospace engineering, environmental engineering and entertainment electronics.**

International recognition of the Bachelor's degree means graduates have excellent opportunities to carve out successful careers for themselves in Germany and abroad. Fields of work for precision engineers in industry, at engineering consultants and at research facilities/institutes include research and development, production, assembly and automation, quality assurance, sales and service.

Course Overview

Considerable importance is placed during the programme both on imparting basic scientific, mathematical and technical principles and on developing engineering skills. Bachelors of Engineering graduates in precision engineering are specialists who have learnt the value of interdisciplinary collaboration from the start of their training. Reflecting the interdisciplinary bias of the programme, students are given a sound basic grounding both in mathematics, physics, electrical engineering and engineering design and are also taught the latest findings in high-tech areas, as well as the ability to keep the knowledge they have acquired up to date and to familiarize themselves quickly with relevant new technological directions. The compulsory optional modules contain teaching units from the field of development/ design or manufacturing engineering.

The last semester includes an integrated practical module in which students carry out under guidance an engineering assignment drawn from professional practice. The Bachelor thesis is written following on from the practical training period. The Bachelor thesis and the practical module are carried out in research laboratories or development departments of companies. The work is scientifically supervised by the relevant institute and the university.