

Graduation

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

Entrance Requirements

Entrance requirements for the programme are the general university entrance qualification or entrance qualification to a university of applied sciences. 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

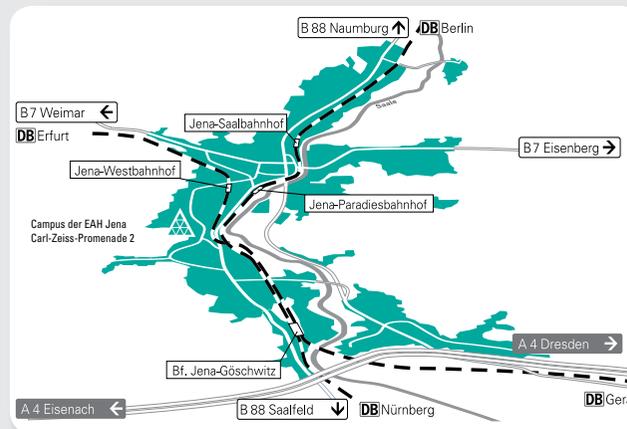
Apart from temporary cyclical fluctuations, today the demand for qualified engineers exceeds the supply of university graduates. Industrial associations predict a serious shortage of engineers. The career prospects for graduates are therefore extremely promising, also on the long run. This applies particularly to courses providing application oriented education aiming at specific professional needs.

After graduation there is the possibility of studying for a Master's degree. Relevant specialization courses are also available both at home and abroad at numerous universities. For example, the SciTec Faculty offers a Master's degree programme in Scientific Instrumentation.

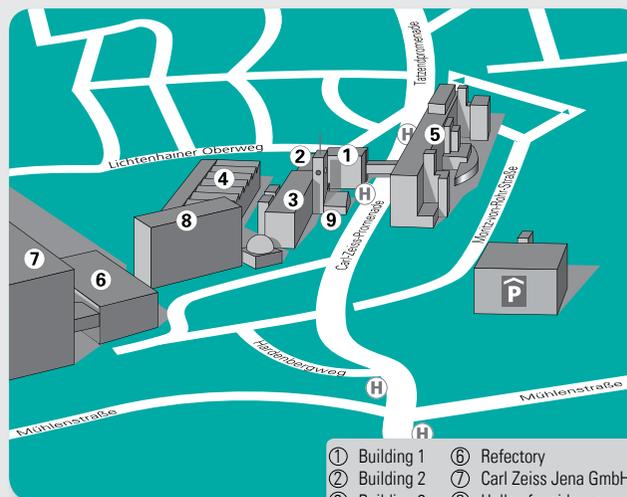


Application	www.eah-jena.de/bewerbung
Dean's office	Phone: +49(0)3641 205-400, Fax: +49(0)3641 205-401 Email: scitec@eah-jena.de
Course director/ Course consultant	Prof. Dr. Michael Rüb Phone: +49 (0)3641 205-879 Email: Michael.Rueb@eah-jena.de

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, S. Reuter, I. Rodigast, T. Klein

Physics Engineering

Bachelor's Degree Course

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



**B. Sc.
Physics Engineering**



Programme Contents and Objectives

Physics Engineering forms a link between physics and the engineering sciences. Its function is to translate the findings of research in physics into useful processes and products, making it one of the most important sources of technical innovation. The principal fields of work for physics engineers include micro technologies, thin-film technology, optics and laser technology, sensor technology, measurement and analytical techniques. Today all these technical-scientific areas are regarded as key technologies for future technical and economic development.

Physics Engineering was established 50 years ago. Since then it has gained a high reputation as an important education path for engineers. Approximately 4,000 prospective physics engineers are currently studying at more than 25 universities. However, this number is not sufficient to satisfy the future needs of industry and research institutions.

Graduates with suitable abilities may continue their education at the Ernst-Abbe-Hochschule University of Applied Sciences Jena by studying the consecutive Master's degree programme in Scientific Instrumentation. The Master's degree programme serves to deepen students' knowledge of the subject and qualifies for a doctorate program after completion of the programme.

Employment Opportunities

The Physics Engineering course prepares students for employment in industry, research institutes or engineering companies. Typical employment opportunities are in the fields of research and development or monitoring high-tech processes. However, there are also employment opportunities in quality control, in technical marketing or sales and distribution.

	Module 1	Module 2	Module 3	Module 4		Module 5	
1st Semester	Mathematics I	Physics I	Physical-Chemical Material Properties	Engineering Mechanics	Electrical Engineering	Computer Sciences	Technical English
2nd Semester	Mathematics II	Physics II	Basics of Engineering Design / CAD				
3rd Semester	Mathematics III	Physics Instrumentation	Vacuum Technique	Control Engineering	Electronics	Thermodynamics and Physical Chemistry	
4th Semester	Solid State Physics	Microsystem Engineering	Optics - Fundamentals and Applications	Production Engineering		Ionising Radiation	
(5th and 6th semesters)	Voluntary Year Abroad (30 weeks)						
5th (7th) Semester	Theoretical Physics	Physical Technologies / Microtechnology	Measurement and Signal Processing	Basics of Quality Management	Business Administration	Elective Module	
6th (8th) Semester	Soft Skills	Internship		Bachelor Thesis			Colloquium

Recommended Elective Module	Basics of Laser Technique	Microscopy	Introduction into FEM	3D CAD	Modern Production Engineering	English for Academic Purposes	Further Foreign Language
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Programme Overview

The programme has been designed to impart both the specific and the interdisciplinary skills required for a successful career. Along with science and engineering contents, so called soft key qualifications are included.

The speed of innovation in the high tech field constantly creates new demands on researchers and developers. Physics Engineers must therefore have a sound knowledge of physics and of mathematical methods which enables them to keep pace with new technical and scientific findings during their careers.

Physics and engineering form a large part of the curriculum, reflecting the interdisciplinary nature of Physics Engineering. Mathematics is an indispensable tool for understanding engineering sciences and physics. It therefore forms an important part of the first semesters. Up to date physical-technical methods and processes which play a key role in the high tech fields are taught in those parts of the programme, which are covering the physical technologies, microtechnology, microsystems technology and solid state physics.

The last semester comprises an integrated practical training in which students carry out an engineering assignment, taken from professional practice. Following the practical training the Bachelor thesis is started.

The Bachelor thesis and the practical training are usually carried out in research laboratories or in development departments of companies. The work is scientifically supervised by the relevant institution and our university.

