Application requirements

- a Bachelor's degree (or equivalent) in a technical or scientific field, whose curriculum covers the special educational prerequisites for the Master's programme in Scientific Instrumentation, e. g. Physics, physics engineering, precision engineering, mechatronics, electronic engineering, mechanical engineering, optics, photonics and comparable study programmes
- a good command of English, demonstrated either by a TOEFL or IELTS test (minimum levels: paper-based TOEFL 550 points, internet-based TOEFL 79 points, IELTS overall band score of 6.0; the test shall not date back more than two years)
- to be eligible for admission, 55 out of 110 possible points are required:
  - weighting of the final grade of the first academic degree (up to 45 points)
  - evaluation of the quality and fit of the completed Bachelor's degree (up to 50 points)
  - evaluation of the quality of special scientific achievements through research work in relevant field (up to 15 points)

Contact

Application	www.eah-jena.de/bewerbung
Dean's Office	phone: +49 (0) 36 41/2 05-400 email: scitec@eah-jena.de
Study Course Management	Prof. Dr.-Ing. Ronny Gerbach phone: +49 (0) 36 41/2 05-362 email: ronny.gerbach@eah-jena.de



Mehr Infos zum Studiengang:

At a glance

Admission:	Eligibility (check application requirements)
Application period:	December 1st - April 1st
Enrolment:	October 1st
Extent:	4 semesters, 120 ECTS
Degree:	Master of Science (M. Sc.)
Language:	English

Ernst-Abbe-Hochschule Jena
University of Applied Sciences

Carl-Zeiss-Promenade 2
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07703 Jena, Germany

Department of SciTec
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Status: 01/2025

www.eah-jena.de

EAH Jena

Department of SciTec

Scientific Instrumentation

Master's Degree Course



Titelfoto: Anna Schroll; Foto Innenteil: Sebastian Reuter

You have got the choice!

After a first academic degree in science or engineering, the English-taught Master's programme in Scientific Instrumentation offers the opportunity to further qualify in scientific instruments engineering, combining technical and interdisciplinary skills essential for your future career.

Degree programme

The Master's programme in Scientific Instrumentation is a two-year course taught entirely in English. The course is designed to provide professional as well as multidisciplinary competences which are required for a successful career. This includes knowledge in science and engineering as well as key qualifications.The first semester serves to harmonise different study programmes. The university offers compulsory modules on topics such as applied physics or engineering sciences.

For the second and third semester, you can select one of three offered specialisations "Design of Precision Instruments", "Materials and Processes" and "Applied Optics and Photonics" according to your bachelor's degree programme completed and to your interests.

During the fourth semester students work on their Master's thesis. The research work for the master's thesis can be done in a university, in a research institute or in industry. It is jointly supervised by the according institution and our university.



Distinctive features

- international all-English Master's degree programme
- interdisciplinary and modular curriculum
- state-of-the-art laboratories and equipment

Career opportunities

In the actual scenario of a growing shortage of highly qualified personnel in technical and scientific sectors, there are excellent career prospects for graduates of the Master's degree programme in Scientific Instrumentation both nationally and internationally.

The industries and research institutes in the region of Jena provide excellent employment opportunities for graduates in the particular specialisations which they have opted for. Many companies are engaged into the fields of metrology and sensors, optics, analytical techniques, micro engineering and medical engineering. The close contacts that the teaching staff possesses with the industrial firms and research institutes ensure that the training is practically oriented and is up-to-date with the course contents.

Looking at the current scenario for interns and graduates of the scientific engineering courses, the demand is exceeding the supply. The Master's degree in Scientific Instrumentation also qualifies its holder to pursue a PhD.

Curriculum

1st semester	Applied Mechanics and Mechanical Design	Materials for Scientific Instruments	Introduction Electronics and Microsystems Engineering	Introduction Optics	Introduction Laser Technologies	Introduction to Scientific Computing	German I or Non-technical module I
2nd semester	specialisation I				Soft Skills and Intercultural Training	Applied Computer Sciences	German II or Non-technical module II
3rd semester	specialisation II				Scientific Writing and Presentation	Quality Management	German III or Non-technical module III
4th semester	Master Thesis						Colloquium

2nd semester	specialisation „Design of Precision Instruments"	Advanced 3D-Design	Precision Instrumentation	Modelling and Simulation	for graduates in e.g. Precision Engineering, Mechanical Engineering, Mechatronics
3rd semester		Design of Instrumentation Devices	Advanced Manufacturing Technologies	Optimisation in Engineering	

2nd semester	specialisation „Materials and Processes"	Materials for Sensors and Electronics I	Advanced Material Characterisation	Processes for Micro- and Nanotechnology		for graduates in e.g. Microtechnology, Physics Engineering, Electrical Engineering
3rd semester		Materials for Sensors and Electronics II	Computational Material Sciences	Nanomaterials	System Integration and Packaging Technologies	

2nd semester	specialisation „Applied Optics and Photonics"	Optical Instruments	Microoptics	Applied Laser Technologies	Scientific Computing for Optics	for graduates in e.g. Optics, Photonics, Physics, Electrical Engineering
3rd semester		Optomechanical Systems Design		Optoelectronics and Quantum Technologies	Image Processing and Artificial Intelligence	