

# Come closer to success

in an exciting study program  
at the Faculty of Technology.

## Contact



We will be happy to help you!

For general questions:  
Our student advisory service

Phone +49 4921 807-7575  
» [zsb@hs-empden-leer.de](mailto:zsb@hs-empden-leer.de)

For questions about the degree program:

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Program advisor  
Phone +49 4921 807-1498  
» [sandra.koch@hs-empden-leer.de](mailto:sandra.koch@hs-empden-leer.de)



Interested in this degree program?

More information is available at  
» [www.hs-empden-leer.de/en/sl/bep](http://www.hs-empden-leer.de/en/sl/bep)

or come and see us in Emden.  
Visit the university and the laboratories,  
and find out more in a personal meeting.



CLOSE TO SUCCESS.

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↳ Technology

## Engineering Physics

Bachelor of Engineering (B.Eng.)

## Careers and areas of employment

As a result of the program's well established scientific and practical aspects, graduates are very well qualified for all areas of technology-oriented industrial and research organizations, as well as for further study in the form of a master's degree (e.g., in Engineering Physics). Graduates also acquire practical experience from their project work, additionally qualifying them for employment in a management setting with skills such as teamwork and entrepreneurial thinking.

## The study course

The University of Applied Sciences Emden/Leer and the Carl von Ossietzky University of Oldenburg offer an international bachelor's program in Engineering Physics to fill the gap between traditional physics and engineering. Since 1998, students in this program have acquired comprehensive knowledge and understanding of mathematics and the natural sciences in combination with application-oriented engineering, including the skills needed to further develop modern technologies. In laboratory projects, teams work through real-world assignments. Many students complete their final project in a technology-oriented business or an external research institute.

More than half of the students in the international Engineering Physics Program come from abroad. Students from many continents work closely together in lectures, practice sessions, and projects. All mandatory classes are offered entirely in English. Electives of 30 credit points are taught in German or English. Admission to this English language program requires good English skills. Oldenburg should be chosen as the place of residence.

This bachelor's program in Engineering Physics is accredited by the accrediting agency ASIIN, and has been awarded the EUR-ACE® label. This ensures international recognition of the program.



Come closer » [www.hs-empden-leer.de/en](http://www.hs-empden-leer.de/en)

## Structure and content of your studies

In the first five semesters, you will lay your professional foundations in physics as well as engineering sciences. The physics and mathematics modules are based closely on traditional physics education. In the engineering subjects, you will learn to quickly translate your knowledge into solutions for problems in science and industry. Specialization takes place in the focus areas "Lasers and Optics", "Renewable Energies", "Biomedical Physics", or "Acoustics". During your eight-week internship in the practical module, you will apply the knowledge you have acquired. You will complete your studies with a nine-week bachelor's thesis, which you will write internally at the university, at external research institutes, or in an industrial company.

## The specializations

The focus areas **Biomedical Physics** and **Acoustics** concentrate on the application of physical principles in medical diagnostics (X-ray, ultrasound) and therapy (e.g. laser medicine, minimally invasive surgery, radiation therapy). Audiology is an important subfield in Oldenburg. In the field of **Acoustics**, you will study the physical principles of sound and vibrations, including psychoacoustic effects. This interdisciplinary education offers fields of work and opens up numerous career opportunities, for example, in basic research, in industry, or in hospitals.

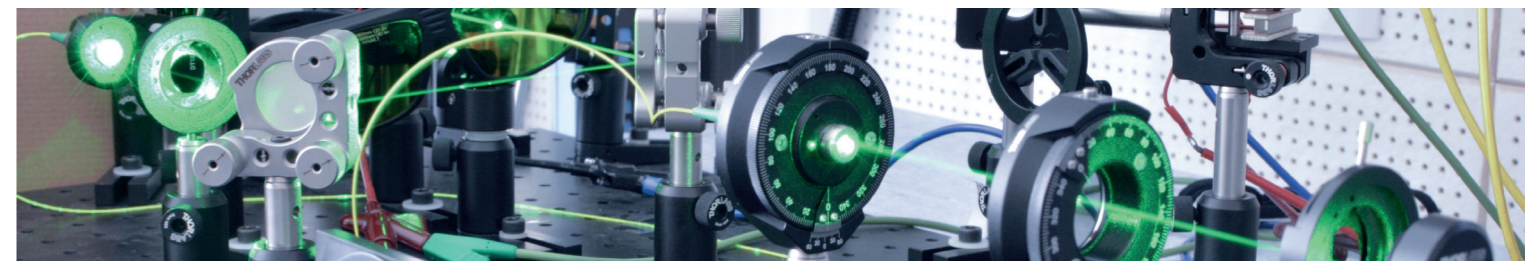
**Laser technology and optics** are key technologies of the 21<sup>st</sup> century. Fiber optic networks for data transmission, optical data carriers, and lithography for the production of microchips are just a few examples in the information and communications sector. Optical diagnostic and

measuring instruments are just as indispensable in medicine as they are in environmental technology. In production technology, lasers are a universal tool for cutting, welding, drilling, perforating, and marking.

The future regional, national, and global supply of primary energy will not be possible without a significant contribution of renewable energy: solar radiation and wind energy provide the largest theoretical contribution as well as the highest technically usable potential forms of renewable energy. Therefore, in the focus area **Renewable Energies**, the theoretical basics of the conversion possibilities of these forms of energy and the corresponding limitations are taught, and the mode of action, limitations, and possible applications for physical and technical concepts are discussed.

## Course of studies

|                            |  |
|----------------------------|--|
| <b>1st – 3rd semesters</b> | <b>Basic studies:</b> Natural science and engineering fundamentals   |
| <b>4th semester</b>        | <b>Engineering:</b> Thermodynamics and Statistics, Quantum Structure of Matter, Material Sciences, Metrology |
| <b>5th semester</b>        | <b>Specialization:</b> Renewable Energies, Laser & Optics, Biomedical Physics, Acoustics                     |
| <b>6th semester</b>        | <b>Bachelor of Engineering:</b> International practice module and bachelor's thesis                          |



## Degree

Upon successful completion of the program, you will be awarded a Bachelor of Engineering (B.Eng.) degree. This internationally recognized academic title is the prerequisite for entry into a master's degree program - and opens up a wide range of professional opportunities.

## Admission requirements

The entrance requirement is the general university entrance qualification, the subject-related higher education entrance qualification, the advanced technical college entrance qualification, the Z-examination or a qualified vocational previous education.

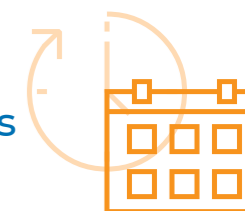
### Language proficiency

You can verify your language proficiency with the following language certificate (not older than two years):

↳ **German:** Common European Framework of Reference for Languages (CEFR) Level A2

↳ **English:** Common European Framework of Reference for Languages (CEFR) Level B2 or 8 points (grade 3.0) in upper secondary education

## Start of studies



Admission is only possible in the **winter semester**.



Information for first-semester students at  
» [www.uol.de/en/students/study-entry](http://www.uol.de/en/students/study-entry)

## Application

With German university entrance qualification:  
You apply online at the University of Oldenburg. Detailed information and the deadlines can be found on the internet:  
» [www.l.uol.de/epbaen](http://www.l.uol.de/epbaen)

With international university entrance qualification:  
You apply online via uni-assist:  
» [www.uni-assist.de/en](http://www.uni-assist.de/en)