



Facts and figures

Start: Winter and summer semesters
Duration: 4 semesters
Degree: Master of Science
Language: English
Admission restricted

Application and enrolment



Admission requirements

General admission requirements:
www.uol.de/stud/2en

Language skills:

English native speaker or level B2

Application

Application deadline: 15 July or 15 January

German university degree:

Online application
www.uol.de/studium/bewerben/master

EU or international applicants:

www.uol.de/en/application/international-students/master



In cooperation with

Contact

For questions about the subject/degree programme

Academic counselling for Engineering Physics
www.uol.de/en/subject-specific-student-advice

Student representatives for Physics

www.uol.de/en/student-bodies/student-council-of-physics
fsphysik@uol.de

For questions about your studies

Study and Career Counselling Service
www.uol.de/en/zskb

Basic questions about application and enrolment

Student InfoLine

Phone +49 441 798 - 2728
study@uol.de

Visitor address

Student Service Centre – SSC
 Haarentor campus, building A12
 26129 Oldenburg
www.uol.de/en/students/service-advice

Further information

Engineering Physics website

www.uol.de/en/ep

Degree programmes at the University of Oldenburg

www.uol.de/en/students/degree-programmes

Financing your studies

www.uol.de/en/students/fees/financing-your-studies

Optional period abroad

www.uol.de/en/going-abroad

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Carl von Ossietzky
**Universität
 Oldenburg**

Engineering Physics

Master's degree



Engineering Physics (M. Sc.)

The University of Oldenburg and the University of Applied Sciences Emden/Leer jointly offer the Engineering Physics programme, which bridges the gap between traditional physics and engineering. The Master's degree is suitable for students with an initial university degree in Physics or related disciplines.

The curriculum is strongly oriented toward classic Physics degree programmes. Students gain a comprehensive understanding in selected areas of physics as well as in applications of physics and engineering sciences.

Students are prepared for work in research and industry with introductions to modern technologies. During their research project, students gain valuable experience in a research institution or a company. This practical part of the programme gives students a good insight into future fields of work. Due to the close links of the degree programme with practical applications, many students write their thesis while working in technology companies or external research institutions. The degree programme has an international character, with around half of students coming from foreign countries.

Students from around the world work closely together in lectures, practice sessions and projects. The programme is taught in English.

Career opportunities

As a result of the programme's solid scientific and practical qualities, graduates are very well prepared for various areas:

- Technology-oriented industrial and research facilities
- Management roles
- Academic career (PhD)

Structure and contents

SUBJECT MODULES		90 CP
Compulsory modules / 36 CP		
Advanced Metrology / 6 CP		
Seminar Advanced Topics in Engineering Physics / 3 CP		
Theoretical Methods / 6 CP		
Tools and Skills in Engineering Sciences / 6 CP		
Advanced Research Project (Preparation Master Thesis) / 15 CP		
Elective modules / 54 CP		
Advanced Physics / 12 CP		
Engineering Sciences / 12 CP		
Specialisation / 18 CP		
Possible specialist fields: Biomedical Physics, Acoustics, Laser & Optics Renewable Energies		
Further modules from the elective area / 12 CP		
COMPULSORY		30 CP
Master's thesis module		
MASTER OF SCIENCE		120 CP

SEMESTER 1 / 2 / 3

SEM. 4

Biomedical Physics focuses on the application of physical principles in medical diagnostics (X-ray, ultrasound, NMR, biophotonics) and therapy (e.g. laser medicine, minimally invasive surgery, radiation therapy). Students who choose the relevant courses can attain the qualification of Medical Physicist from the German Society for Medical Physics (DGMP).

Acoustics focuses on the physical fundamentals of acoustics (electroacoustics, room acoustics, psychoacoustics), advanced methods of signal processing and machine learning as well as their applications in acoustic metrology and technical devices for speech and audio processing.

The specialisation option **Renewable Energies** teaches students the theoretical principles of conversion options for these forms of energy and the corresponding limitations. The programme also includes discussion of the functioning, limits to and applications of physical and technical concepts. This specialisation also offers the opportunity to gain the qualification European Wind Energy Master (www.ewem.uol.de) awarded jointly with the leading universities in the field of wind energy.

Language skills

English proficiency to B2 level is required.

Specialisations

The degree programme consists of the areas Physics, Engineering Sciences and specialist fields. Students complete their studies with a project in a research institution or a company.

The specialist fields available are Laser & Optics, Biomedical Physics, Acoustics and Renewable Energies:

The **Laser & Optics** option focuses on the fundamental physics of lasers as well as how lasers are used in optical communication technology, macro, micro and nano-materials processing, medical technology, optical metrology and the development of compact, powerful laser equipment.