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Master of Science in Engineering Physics • University of Oldenburg • Oldenburg................................. 2
Master's degree

**Master of Science in Engineering Physics**

*University of Oldenburg • Oldenburg*

### Overview

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<th><strong>Degree</strong></th>
<th>Master of Science in Engineering Physics</th>
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</thead>
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<tr>
<td><strong>Course location</strong></td>
<td>Oldenburg</td>
</tr>
<tr>
<td><strong>In cooperation with</strong></td>
<td>University of Applied Sciences Emden/Leer</td>
</tr>
<tr>
<td><strong>Teaching language</strong></td>
<td>German, English</td>
</tr>
<tr>
<td><strong>Languages</strong></td>
<td>Courses are held in English and German and depend on a personal selection of lectures.</td>
</tr>
<tr>
<td><strong>Programme duration</strong></td>
<td>4 semesters</td>
</tr>
<tr>
<td><strong>Beginning</strong></td>
<td>Winter and summer semester</td>
</tr>
<tr>
<td><strong>More information on beginning of studies</strong></td>
<td>The lecture period will start either in early April or mid-October.</td>
</tr>
<tr>
<td><strong>Application deadline</strong></td>
<td>For the winter semester: The deadline is 30 September, but it is recommended that applicants submit their applications by 1 July. For the summer semester: The deadline is 31 March, but it is recommended that applicants submit their applications by 15 January.</td>
</tr>
<tr>
<td><strong>Tuition fees per semester in EUR</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Combined Master's degree / PhD programme</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Joint degree / double degree programme</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Description/content</strong></td>
<td>Biomedical Physics</td>
</tr>
</tbody>
</table>

Modern medicine employs a multitude of sophisticated, physically based techniques both in therapy and diagnostics. Providing at first a basic foundation in anatomy and physiology, the specialisation "Biomedical Physics" goes on to emphasise on modern methods in medical radiation applications such as radiotherapy, nuclear medicine or radiology, and basics of minimal invasive therapy including micromechanical and laser assisted methods as well as other imaging techniques such as ultrasound, Nuclear Magnetic Resonance, and optical tomography. Well-established medical engineering physics such as medical electronics, data and image acquisition and processing, radiation biophysics, laboratory diagnostics, and biomechanics are also covered. Combining engineering, scientific, and biomedical skills, the graduate is well equipped...
with urgently needed qualifications for medical research and development. Training in the field of medical radiation physics is performed in close cooperation with the Medical Centre for Radiotherapy and Nuclear Medicine at the Pius-Hospital Oldenburg.

**Acoustics**

The specialisation "Sound & Vibration" covers infrasound, audible sound, ultrasound and structure born sound, and mechanical vibrations. Topics address digital signal processing, basics of radiation and wave propagation, physical and technical properties of electro-acoustic transducers, numerical calculation of mechanical vibrations, acoustic properties of matter, and evaluation of the impact of sound and vibrations on humans. Subjective perception of sound, physics of the ear, sound design of products, sound environment of transportation means, and noise abatement are fields of research in Oldenburg.

**Laser & Optics**

In the specialisation "Laser & Optics" the focus of study is on physical basics of lasers as well as the applications in optical communication, material processing on macro-, micro-, and nano-scale, medical technology, optical measurements or development of compact lasers with high power.

**Renewable Energy**

Education in the field of Renewable Energy (RE) is strongly correlated with models of the future energy supply. Much of the research in RE is conducted in disciplines like physics and engineering. However, many of the research questions in RE require multi- or interdisciplinary approaches. RE research and education at the University of Oldenburg is focused on physical, technical, ICT, and economic issues of RE power generation and its system integration. Many research groups within the Institute of Physics are focussing on material research (photovoltaics, battery, nano-optics) and cooperating with theoretical and applied physics. Furthermore, there is a broad range of research in the field of wind energy physics: wind energy systems, turbulence, wind energy and statistics, and wind and solar energy meteorology.

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**Course Details**

**Course organisation**

Approx. one-third of the study time is arranged in fixed courses pertaining to advanced physics, theoretical physics and management. All other courses can be chosen according to the subject of specialisation. Personal initiative and individual work are encouraged through long-term projects in the laboratory.

The specialisation "Biomedical Physics" offers the great opportunity to obtain the "Fachanerkennung Medizinische Physik" from the "Deutsche Gesellschaft für Medizinische Physik (DGMP)". Within the specialisation Renewable Energies it is possibly to achieve a double degree in the Erasmus Mundus Master’s programme "European Wind Energy Master". Further information and application procedure can be find at [http://www.windenergymaster.eu](http://www.windenergymaster.eu).

The European Wind Energy Master consortium is composed of four universities, world leaders in wind energy and offshore wind energy research and education (Technical University of Denmark, Delft University of Technology, Norwegian University of Science and Technology, University of Oldenburg).

Engineering Physics is offered by the University Oldenburg and the University of Applied Science Emden/Leer. Several lectures and laboratory projects on laser technology are given in Emden. You will receive a "Semesterticket" when you enrol which allows you to use public transport free of charge.

Individual part-time studies are possible.

**Types of assessment**

A wide range of assessment types are used, e.g., written exam, oral exams, homework, reports, and presentations.
## Costs / Funding

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition fees per semester in EUR</td>
<td>None</td>
</tr>
<tr>
<td>Semester contribution</td>
<td>Approx. 400 EUR per semester</td>
</tr>
<tr>
<td>Costs of living</td>
<td>You should expect to spend about 720 EUR per month to cover personal expenses (accommodation, health insurance, food).</td>
</tr>
<tr>
<td>Funding opportunities within the university</td>
<td>No</td>
</tr>
</tbody>
</table>

## Requirements / Registration

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Details</th>
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<tbody>
<tr>
<td>Academic admission requirements</td>
<td>A first academic degree, Bachelor's degree (or equivalent) in a subject related to engineering physics is required.</td>
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<tr>
<td>Language requirements</td>
<td>Command of English:</td>
</tr>
<tr>
<td></td>
<td>- B2</td>
</tr>
<tr>
<td>Command of German</td>
<td>- B2</td>
</tr>
<tr>
<td>Application deadline</td>
<td>For the winter semester: The deadline is 30 September, but it is recommended that applicants submit their applications by 1 July. For the summer semester: The deadline is 31 March, but it is recommended that applicants submit</td>
</tr>
</tbody>
</table>
their applications by 15 January.

Submit application to  

https://qis04.uni-oldenburg.de/qisserver/rds?state=wimma&stg=z&imma=einl

Services

Possibility of finding part-time employment  
Students are permitted to work while pursuing their studies. If you are a student from a non-EU country, you are allowed to work 120 full or 240 half workdays per year.

Accommodation  
Furnished accommodation is available at a cost of 150 to 300 EUR per month (halls of residence or private).
If you want to come to Oldenburg from abroad, there is now less need to worry about accommodation or other organisational matters. The Studentenwerk Oldenburg offers international students a service package for 964 EUR, which includes accommodation for six months and other services that should help you get started. Furthermore, a counselling service is available to get you safely through your first weeks and months in Oldenburg.
For further information and an application form, please check:  

Specific specialist or non-specialist support for international students and doctoral candidates  
- Buddy programme
- Tutors
- Specialist counselling

Contact

University of Oldenburg  
School of Mathematics and Science  
Institute of Physics

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Carl-von-Ossietzky-Strasse 9-11  
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Tel. +49 4417983560  
engineering.physics@uni-oldenburg.de  
Course website: https://www.uni-oldenburg.de/physik/studiengaenge/ep/

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www.daad.de/sommerkurse

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