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Master's degree



Master's in Optical Sciences

Humboldt-Universität zu Berlin • Berlin

Overview

Degree	Master of Science
Teaching language	<ul style="list-style-type: none">English
Languages	Courses are held in English.
Full-time / part-time	<ul style="list-style-type: none">full-time
Programme duration	4 semesters
Beginning	Winter and summer semester
Application deadline	15 June for the following winter semester 15 January for the following summer semester
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	<p>The MSc in Optical Sciences programme is exclusively taught in English and prepares students for challenging careers in the optics and photonics industries or for the pursuit of a doctoral degree. This is facilitated through several temporally overlapping stages with increasing degrees of specialisation. Stage one features a broad in-depth education in state-of-the-art optics knowledge with a focus on coherent light-matter interaction. This is followed by stage two, during which students acquire specialised skills in an elective subject. These elective subjects represent the main research areas of the various research groups at both Humboldt-Universität zu Berlin (HU) and the cooperating non-university research institutes in the Science and Technology Park Berlin-Adlershof. Finally, during stage three, the students delve into their own independent research, which leads to the final six-month Master's thesis.</p>

Course Details

Course organisation

The MSc in Optical Sciences programme comprises the following modules (courses), which are sorted with regards to stages one to three:

Stage one: Optical Sciences (semesters one and two)

- Fundamentals of Optical Sciences (12 ECTS credit points)
- Advanced Optical Sciences (6 ECTS credit points)
- Optical Sciences Laboratory (6 ECTS credit points)
- Optical Sciences Seminar (6 ECTS credit points)

Stage two: Elective Subjects (semesters one and two)

- Nonlinear Photonics (three modules, 6 ECTS credit points each)
- Quantum Optics (three modules, 6 ECTS credit points each)
- Short-Wavelength Optics (three modules, 6 ECTS credit points each)
- Theoretical Optics (three modules, 6 ECTS credit points each)

Stage three: Independent Research (semesters three and four)

- Advanced Optical Sciences Laboratory (15 ECTS credit points)
- Introduction to Independent Scientific Research (15 ECTS credit points)
- Master's thesis (30 ECTS credit points)

In addition, two general electives (two modules, 5 ECTS credit points each) can be taken from the entire curriculum of the HU.

A Diploma supplement will be issued

Yes

International elements

- Specialist literature in other languages
- Language training provided
- Training in intercultural skills
- Content-related regional focus

Integrated internships

While internships are not mandatory, it is not unusual for a student of the Master's programme in Optical Sciences to complete an internship over the summer break. The Science and Technology Park Berlin-Adlershof (where the Institute of Physics of the HU is located) offers ample opportunities for internships.

Course-specific, integrated German language courses

No

Course-specific, integrated English language courses

No

Costs / Funding

Tuition fees per semester in EUR

None

Semester contribution

300 EUR per semester

Funding opportunities within the university

No

Requirements / Registration

Academic admission requirements

The successful admission to the MSc in Optical Science programme requires a Bachelor's degree in physics or a closely related field of science or engineering. In addition, profound knowledge of mathematics and physics must be demonstrated. Specific requirements are:

- Higher Mathematics (minimum 15 ECTS credit points)
- Quantum Theory / Quantum Physics (minimum 10 ECTS credit points)
- Electrodynamics/Optics (minimum 10 ECTS credit points)
- Physics Laboratory (5 ECTS credit points)

Language requirements

Applicants must provide proof of their English language proficiency equivalent to a B2 level.

Application deadline

15 June for the following winter semester
15 January for the following summer semester

Submit application to

<https://www.uni-assist.de/en/>

Services

Possibility of finding part-time employment

Master's students can obtain financial support by applying for university-wide advertised student assistantships. In addition, student assistantships exist at several non-university research institutes that are within walking distance of the university.

Accommodation

Accommodation is available through the Student Services Office or through the private market. Rent for a single room in a student residence is approx. 250 EUR per month. Private housing can be found on the Internet at: <http://www.studenten-wg.de> (look for WG Berlin).

Support for international students and doctoral candidates

- Welcome event
- Buddy programme
- Accompanying programme

Contact

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Institute of Physics

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🌐 Course website: <https://opticalsciences.physik.hu-berlin.de/>

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International Programmes in Germany - Database

www.daad.de/international-programmes

www.daad.de/sommerkurse

Editor

DAAD - Deutscher Akademischer Austauschdienst e.V.

German Academic Exchange Service

Section K23 – Information on Studying in Germany

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www.daad.de

GATE-Germany

Consortium for International Higher Education Marketing

www.gate-germany.de

Disclaimer

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