

# Master Study Optoelectronics and Photonics

## University of Paderborn

### Admission requirements

(1) Applicants may be enrolled in the master's program in optoelectronics and photonics only if they have acquired the following:

1. A certificate of university entrance (general or specific to a relevant subject) or, in accordance with a legal ordinance, a certificate of entrance to a university of applied sciences or a certificate of previous educational qualification recognized as equivalent by legal regulation or by the relevant state authority, or satisfaction of the requirements for qualification through professional training or the requirements of the regulations for admission for applicants from abroad (Bildungsausländerhochschulzugangsverordnung).

2. A degree qualification that meets the following requirements:

a) It must be an initial university degree with professional qualification with a normal study period of at least six semesters from Paderborn University or a state or state-recognized university or a state or state-recognized university of cooperative education. Degree qualifications from a foreign state or state-recognized university allow admission provided that the competence acquired does not differ significantly from a degree from Paderborn University as per clause 1. For foreign educational qualifications, the equivalence agreements of the Conference of Education Ministers and the Conference of University Rectors or corresponding statutory regulations shall be observed. Insofar as agreements and conventions of the Federal Republic of Germany with other states about equivalence in the university sector (equivalence agreements) work to the advantage of students of foreign countries notwithstanding clause 2, the regulations of the equivalence agreement shall take precedence. In the event of doubt about the existence or absence of significant differences, the Central Agency for Foreign Education (Zentralstelle für ausländisches Bildungswesen) shall also be consulted. The Examinations Board shall determine compliance with the requirements of clause 2.

b) The degree qualification must include the following competences or there must be no significant differences from them:

aa) Principles of physics: Command of the principles of physics in the areas of solid-state physics, semi-conductor physics and components, electrodynamics, wave optics and principles of spectroscopic procedures, and quantum theory, combined with the ability to create models and abstract mathematical formulations of physical phenomena.

bb) Practicals: Identifying and extracting significant physical interrelationships using experiments conducted by the applicant herself or himself, recording and critically evaluating the results of experiments.

cc) Higher mathematics: Command of the basic mathematical concepts and methods that are required to understand and solve problems in the master's degree in optoelectronics and photonics. This comprises advanced knowledge in the fields of linear algebra, analysis, Fourier series, differential equations, and vector analysis.

The Examinations Board shall determine compliance with these requirements. If requirements are missing, enrolment may take place on the condition that the requirements are made up by

appropriate study and passing of associated examinations before registration for the master's thesis. The Examinations Board shall decide on the type and extent of the study and examinations on the basis of the previous degree qualification. Assessments successfully completed outside the degree qualification may also be considered. The missing study which must be made up must not exceed 30 credit points. The study and examinations should be completed in the first semester of the master's degree program.

- c) The degree program must have been completed with an overall grade of at least 2.5 (or an equivalent final grade from abroad).
3. An adequate command of English, in accordance with the specifications of para. 2.
  4. For a foreign applicant who is not on an equal footing with German applicants as a result or on the basis of state treaties, demonstration of her or his capacity to study by means of the results of a Graduate Record Examination (GRE) Revised General Test. A minimum of 157 points in the "Quantitative Reasoning" section and a minimum of 4.5 points in the "Analytical Writing" section of the GRE Revised General Test are usually required. The Examinations Board may accept a lower points score, depending on the qualification, if the final grade of the qualification in accordance with no. 2 is very good. Applicants with a German university entrance qualification are exempt from demonstrating their ability to study.
- (2) Adequate command of the English language shall be demonstrated as follows:
- a. A bachelor's degree from an English-speaking country or on an English-language accredited domestic program or
  - b. Test of English as a Foreign Language (TOEFL) "internet-based" Test (iBT) with a result of at least 80 points or
  - c. TOEFL "paper-based" test (PBT) with a result of at least 550 points or
  - d. IELTS test with a result of at least 6.0 or
  - e. Cambridge Test – First Certificate in English (FCE) or
  - f. tests of an equivalent level or
  - g. appropriate previous qualification from school.
- (3) Enrollment shall be declined if
1. the admission requirements specified in paragraphs 1 and 2 have not been met,
  2. the candidate definitively failed to pass an examination required under the Examination Regulations in the relevant program at a university within the scope of the Basic Law or
  3. the candidate definitively failed to pass any other examination required under the Examination Regulations on a program at a university within the scope of the Basic Law if both the failed program is close in content to the master's program in materials science at Paderborn University and the examination that has been definitively failed has significant proximity in terms of content to an examination in a compulsory module on the master's degree program in optoelectronics and photonics at Paderborn University.