

**Study and Examination Regulations  
for the Photonics degree programme  
(Master of Engineering - M.Eng.)  
Full-time and part-time study**

Based on Sections 20 (2), 23 (2), 81 (2) No. 1 of the Brandenburg Higher Education Act (BbgHG) of April 9, 2024 (GVBl.I/24, No. 12), last amended on June 21, 2024 (GVBl.I/24, No. 30) in conjunction with Section 14 (3) of the Basic Regulations of the Technical University of Applied Sciences Wildau in the version published on August 21, 2019 (Official Announcements of the Technical University of Applied Sciences Wildau 45/2019), last amended with effect from August 22, 2022 (Official Communications of the Technical University of Applied Sciences Wildau 29/2022) and the provisions of the Framework Regulations of the Technical University of Applied Sciences Wildau in the version published on July 4, 2019 (Official Communications of the Technical University of Applied Sciences Wildau 42/2019), last amended on May 29, 2024 (Official Announcements of the Technical University of Applied Sciences Wildau 12/2024), the Faculty Board of the Faculty of Engineering and Natural Sciences at the Technical University of Applied Sciences Wildau, by resolution of November 10, 2025, issues the following Study and Examination Regulations for the master's programme in Photonics, approved by the President of the Technical University of Applied Sciences Wildau by letter dated December 8, 2025:

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## § Qualification objectives of the degree programme

- (1) The master's programme provides in-depth knowledge and skills in photonics and related fields in an integrated form. Photonics is a field of technology that aims to use light for a variety of different areas in science and technology, with the term referring in particular to the use of the quantum nature of light in the form of photons. Photonics is an interdisciplinary technology based on optical technologies, laser technology, microsystems technology, and related fields. It finds applications in technology fields such as information and communication technology, measurement and sensor technology, the aerospace industry, the automotive industry, mechanical and equipment engineering, medical technology, and the life sciences.
- (2) The degree programme is a continuation of the bachelor's degree programme in "Physical Technologies/Energy Systems" at the Technical University of Applied Sciences in Wildau. It has an application-oriented profile. It enables graduates to carry out application-oriented research work and to perform tasks in technical or research-oriented management positions in an integrative and responsible manner.
- (3) Graduates are able to confidently identify complex problems in the aforementioned areas of responsibility, analyze them using scientific methods, and solve them in a targeted and effective manner. They are capable of taking on management tasks independently.

## § 2 General course of study

The general course of study is governed by the General Regulations of the Technical University of Applied Sciences Wildau in their currently valid version. The General Regulations can be accessed under Official Announcements on the website of the Technical University of Applied Sciences Wildau.

## § 3 Cooperation within the degree programme

The degree programme is run jointly with Brandenburg University of Applied Sciences, with students enrolled at Brandenburg University of Applied Sciences in Wildau. Students have access to the resources of both universities.

## **§ 4**

### **Type and form of study**

- (1) The degree programme is conducted as a face-to-face programme.
- (2) The degree programme is offered in the following study types
  - full-time study and
  - part-time.
- (3) The language of instruction and examination is English.

## **§ 5**

### **Standard period of study and enrolment**

- (1) The standard period of study for the programme is four semesters for full-time study and eight semesters for part-time study. The ratio between the standard period of study for part-time study and the standard period of study for full-time study is therefore  $k = 8/4 = 2.00$ .
- (2) Enrolment takes place annually for the winter semester, although enrolment in a higher semester is also possible for the summer semester.
- (3) The distribution of study modules over the standard period of study is regulated in the applicable study plan for the respective type of study (full-time/part-time study) in the appendix.
- (4) The timelines specified in §§ 7 to 9 for the full-time study programme vary for the part-time study programme depending on the date of entry into the programme in accordance with the study plan for the part-time study programme. This applies accordingly when switching from part-time to full-time study.

## **§ 6**

### **Admission requirements and admission criteria**

- (1) The admission requirement is a first professionally qualifying university degree comprising at least 180 credit points (CP) in accordance with the European Credit Transfer System (ECTS), which must demonstrate a subject-related orientation. The above admission requirement is deemed to be fulfilled for the accredited degree programmes in Physical Technologies/Energy Systems, Biosystems Engineering/Bioinformatics, Industrial Engineering and Automation Technology at the Technical University of Applied Sciences Wildau, Optometry/Optical Device Technology at the Technical University of Applied Sciences Brandenburg, and Laser Science and Photonics at the Berlin University of Applied Sciences.

Graduates of degree programmes with a different focus must provide evidence of course content that is comparable to degree programmes in related fields. This evidence is provided if modules in an adequate form and scope with at least 25 CP have been

successfully completed in the following subject areas, whereby these CP must be composed of at least three of the following subject areas:

- Mathematics,
- Physics,
- Optics,
- Electrical engineering,
- Computer science.

In cases of doubt, the Degree Programme Director will decide on admission.

- (2) If the degree programme is subject to admission restrictions, the regulations of the Technical University of Applied Sciences Wildau for the selection of students in degree programmes with admission restrictions, as amended, shall be taken into account.
- (3) In accordance with the regulations of the Technical University of Applied Sciences Wildau for the selection of students in restricted-admission degree programmes, a letter of motivation is required as an additional admission criterion, in which the applicant explains his or her motivation for or identification with the chosen degree programme in at least two and at most three pages. The letter of motivation must be submitted with the other application documents by the deadline.
- (4) To be admitted to this degree programme, applicants must provide proof of their English language skills, § 10 (5) sentence 2 BbgHG.

The admission requirement is proof of English language skills at a level of at least C1 of the Common European Framework of Reference for Languages (CEFR). Recognized certificates can be found in the currently valid version of the guidelines for proof of English language skills for enrolment at the Technical University of Applied Sciences Wildau.

## **§ 7**

### **Specific course of study**

- (1) The degree programme has a modular structure. The programme consists of modules for which credit points (CP) are awarded in accordance with the European Credit Transfer System (ECTS). A total of 120 CP are awarded for successful completion of the programme.
- (2) The full-time study programme is structured as follows:
  - Semesters one to three of the full-time programme each comprise 15 weeks of teaching followed by a two-week examination period.
  - The fourth semester is devoted to writing the thesis and the subsequent colloquium in the form of an oral examination.
- (3) The part-time programme is structured as follows:
  - Semesters one to seven of the part-time program each comprise 15 weeks of teaching and a subsequent two-week examination period.
  - The eighth semester is devoted to writing the thesis and the subsequent colloquium in the form of an oral examination.
- (4) The appendix to these Study and Examination Regulations contains the study plans for full-time and part-time study.

- (5) The study plans for full-time and part-time studies specify the modules that must be completed in order to successfully complete the programme. The study plans contain the semester assignment, module type, examination type, teaching method, weekly hours per semester, and CP for each module.
- (6) In the second and third semesters of full-time study, two elective modules must be taken per semester, one module at the Technical University of Applied Sciences Wildau and one module at the Technical University of Applied Sciences Brandenburg. The corresponding module examinations must be taken in accordance with the regulations of the Technical University of Applied Sciences Wildau or the Technical University of Applied Sciences Brandenburg.
- The Faculty Board decides on a list of permissible elective modules that students can choose from (elective catalogue). The elective catalogue for the elective modules must be approved by the Faculty Board at the end of the summer semester of the previous year for the elective modules of the second semester and at the end of the winter semester of the previous year for the elective modules of the third semester. If the Faculty Board fails to reach a decision, the existing, previously approved elective catalogue shall continue to apply.
- Each elective module is assigned a module name, semester, weekly hours per semester, CP, type of examination, and minimum and maximum number of participants in the elective catalogue.
- (7) Students must notify the Degree Programme Director of the elective modules they wish to take at least four weeks before the end of the previous semester's course period. Students are required to cooperate in this process. When making their selection, students indicate their preferences with regard to the permitted elective modules. Assignment to the modules is based on these preferences and internal university resources. The number of participants for individual elective modules may be specified by the Dean if this is necessary for their proper implementation.
- Students whose first choice is an elective module to which they cannot be assigned for the reasons stated above will be assigned to another elective module. Where possible, the students' other preferences will be taken into account.
- The deadlines specified in Section 20 (6) of the General Regulations also apply in the case of non-selection. In this case, the examination date specified in Section 20 (6) sentence 1 of the General Regulations is the last day of the semester in which the elective module is scheduled in the Study and Examination Regulations.
- (8) If students take an eligible elective module from another degree programme, the course and examination times of the selected elective module of the other degree programme shall apply.
- (9) By decision of the Examinations Board, in consultation with the Degree Programme Director, the order specified in the curriculum or the type of course or examination may be changed in individual cases for compelling reasons for the academic year.
- (10) Students have the opportunity to complete a semester abroad. The International Office must be involved in advance by the students in the planning and implementation of the corresponding semester abroad. At the latest during the lecture period of the previous semester, before the start of the semester abroad, a learning agreement must be confirmed in writing by the Degree Programme Director at the initiative of the student.

The modules specified in the learning agreement must meet the qualification objectives of the degree programme in terms of content and level.

- (11) Each module included in the curriculum is described in the module handbook. The module handbook is published on the programme's website. The module descriptions form the basis for the implementation of the modules; the lecturer designs the teaching on this basis.
- (12) Written examinations consisting of tasks worth more than 50% of the achievable points according to the multiple-choice procedure are not permitted.
- (13) If a repeat examination takes place together with students from subsequent years, the form and structure of the repeat examination may be adapted to those of the subsequent years.

## **§ 8**

### **Practical phases**

Not applicable.

## **§ 9**

### **Final thesis**

- (1) A thesis must be completed in the final semester according to the study plan. The thesis must be applied for online using the thesis system at the Examination Board of the department.
- (2) In the event that a student is unable to find a supervisor for their thesis within a reasonable period of time despite sufficient effort, the Examination Board will appoint a substitute supervisor upon request. In the application to the Examination Board, the student must list which members of the university they have already approached for supervision.
- (3) The thesis is worth 29 CP, which is equivalent to 22 weeks of work.
- (4) Before writing a thesis abroad, the student must involve the International Office.

## **§ 10**

### **Final examination**

- (1) In order to successfully complete the programme, students must pass all module examinations required in the curriculum, successfully complete their thesis, and pass the thesis colloquium.
- (2) The colloquium on the final thesis must be held immediately after the two reviews of the written thesis are available. Section 27 (8) of the General Regulations of the Technical University of Applied Sciences Wildau remains unaffected. The colloquium at the Technical University of Applied Sciences Wildau is held before an examination committee consisting of the two reviewers of the written thesis. The Examination Board decides on

any deviations upon request. The students to be examined must be informed of this immediately. The colloquium, including preparation, comprises one CP and is assessed on a differentiated basis.

- (3) The colloquium on the thesis is open to the university public. If the thesis is subject to a restriction notice, the Examination Board may restrict public participation in the examination.
- (4) The first reviewer chairs the examination committee and is responsible for organizing the examination.
- (5) The colloquium is usually held as individual examinations. If the thesis has been produced as a group project, the colloquium on the thesis may also be conducted as a group examination with up to two students. The contribution of each individual must be distinct and individually assessable.
- (6) Minutes shall be taken of the colloquium. They shall be kept by the chair of the examination committee and signed by the members of the examination committee. The examination result shall be announced to the candidate immediately after the examination and communicated to the Admission and Examinations Office.

## **§ 11**

### **Double degree agreement**

There is an agreement with the University of Rome Tor Vergata on a double degree in Materials Engineering. If the second and, optionally, the fourth semester of the programme are successfully completed at the University of Rome Tor Vergata, the Master of Science (M.Sc.) in Materials Engineering degree can be obtained as a double degree together with the Master of Engineering (M.Eng.) in Photonics from the Technical University of Applied Sciences Wildau. Further details are regulated by the respective double degree agreement.

## **§ 12**

### **Academic degree**

Upon successful completion of the programme, the academic degree "Master of Engineering" (M.Eng.) is awarded.

## **§ 13**

### **Entry into force**

These Study and Examination Regulations shall enter into force on the day after their publication in the official announcements of the Technical University of Applied Sciences Wildau and shall apply for the first time to students enrolling in the winter semester 2026/27.

Wildau, December 8, 2025

signed Prof. Dr. rer. nat. Ulrike Tippe  
President  
of the Technical University of Applied Sciences Wildau

**Appendix:**

- Full-time/part-time study plans

## Full-time study plan

### Masterstudiengang Photonics, M.Eng.

Studientyp Vollzeit

gültig ab WS 2026/27

Module	V	Ü	L	P	S	ges. SWS	WiSe			SoSe			WiSe			SoSe		
							1. Sem.			2. Sem.			3. Sem.			4. Sem.		
							SWS	PA	CP	SWS	PA	CP	SWS	PA	CP	SWS	PA	CP
<b>Mathematisch-naturwissenschaftliche Grundlagen</b>																		
Structure of Matter	4	0	0	0	0	4	4	FMP	4									
Mathematical Methods	3	1	0	0	0	4	4	FMP	5									
Theoretical Principles of Photonics I	4	0	0	0	0	4	4	FMP	4									
Theoretical Principles of Photonics II	3	1	0	0	0	4							4	KMP	5			
<b>Ingenieurwissenschaftliche Grundlagen</b>																		
Measuring Techniques and Instrumentation	2	0	2	0	0	4	4	KMP	5									
Micro-Technologies	4	0	2	0	0	6	6	KMP	7									
Technical Optics I	3	0	1	0	0	4	4	KMP	5									
Laser Technologies	3	0	1	0	0	4				4	KMP	5						
Optical Measuring and Analysis Techniques	4	0	2	0	0	6				6	KMP	7						
<b>Fachspezifische Vertiefungen</b>																		
Technical Optics II	8	0	0	0	0	8				8	FMP	8						
Laser Materials Processing	3	0	2	0	0	5							5	KMP	6			
Applied Photonics	5	0	1	0	0	6							6	FMP	6			
<b>Profilbildung</b>																		
Compulsory Elective Module I	2	0	0	0	0	2				2	FMP	2						
Compulsory Elective Module II	1	0	1	0	0	2				2	SMP	3						
Research and Development Project I	0	0	0	4	0	4				4	SMP	5						
Compulsory Elective Module III	1	0	1	0	0	2							2	SMP	2			
Compulsory Elective Module IV	1	0	1	0	0	2							2	SMP	2			
Research and Development Project II	0	0	0	4	0	4							4	SMP	5			
<b>Fachübergreifende Inhalte</b>																		
Management	4	0	0	0	0	4							4	SMP	4			
<b>Summe der Semesterwochenstunden</b>	<b>55</b>	<b>2</b>	<b>14</b>	<b>8</b>	<b>0</b>	<b>79</b>	<b>26</b>			<b>26</b>			<b>27</b>			<b>0</b>		
<b>Summe Credits Lehre</b>						<b>90</b>			<b>30</b>			<b>30</b>			<b>30</b>			<b>0</b>
<b>Credits für Masterarbeit</b>						<b>29</b>												<b>29</b>
<b>Credits für Kolloquium</b>						<b>1</b>												<b>1</b>
<b>Summe Credits</b>						<b>120</b>			<b>30</b>			<b>30</b>			<b>30</b>			<b>30</b>

V Vorlesung  
 Ü Übung  
 L Labor  
 P Projekt  
 S Seminar

WiSe Wintersemester  
 SoSe Sommersemester  
 SWS Semesterwochenstunden  
 PA Prüfungsart  
 CP Creditpoints

FMP Feste Modulprüfung  
 SMP Studienbegleitende Modulprüfung  
 KMP Kombinierte Prüfungsleistung

## Part-time study plan

### Masterstudiengang Photonics, M.Eng.

Studententyp Teilzeit

gültig ab WS 2026/27

Module	V	Ü	L	P	S	ges. SWS	WiSe			SoSe			WiSe			SoSe			WiSe			SoSe			WiSe			SoSe		
							1. Sem.	2. Sem.	3. Sem.	4. Sem.	5. Sem.	6. Sem.	7. Sem.	8. Sem.	SWS	PA	CP	SWS	PA	CP	SWS	PA	CP	SWS	PA	CP	SWS	PA	CP	SWS
<b>Mathematisch-naturwissenschaftliche Grundlagen</b>																														
Structure of Matter	4	0	0	0	0	4	4	FMP	4																					
Mathematical Methods	3	1	0	0	0	4	4	FMP	5																					
Theoretical Principles of Photonics I	4	0	0	0	0	4						4	FMP	4																
Theoretical Principles of Photonics II	3	1	0	0	0	4											4	KMP	5											
<b>Ingenieurwissenschaftliche Grundlagen</b>																														
Measuring Techniques an Instrumentation	2	0	2	0	0	4	4	KMP	5																					
Mirco-Technologies	4	0	2	0	0	6						6	KMP	7																
Technical Optics I	3	0	1	0	0	4						4	KMP	5																
Laser Technologies	3	0	1	0	0	4				4	KMP	5																		
Optical Measuring and Analysis Techniques	4	0	2	0	0	6									6	KMP	7													
<b>Fachspezifische Vertiefungen</b>																														
Technical Optics II	8	0	0	0	0	8						8	FMP	8																
Laser Materials Processing	3	0	2	0	0	5									5	KMP	6													
Applied Photonics	5	0	1	0	0	6																	6	FMP	6					
<b>Profilbildung</b>																														
Compulsory Elective Module I	2	0	0	0	0	2				2	FMP	2																		
Compulsory Elective Module II	1	0	1	0	0	2				2	SMP	3																		
Research and Development Project I	0	0	0	4	0	4				4	SMP	5																		
Compulsory Elective Module III	1	0	1	0	0	2									2	SMP	2													
Compulsory Elective Module IV	1	0	1	0	0	2									2	SMP	2													
Research and Development Project II	0	0	0	4	0	4																4	SMP	5						
<b>Fachübergreifende Inhalte</b>																														
Management	4	0	0	0	0	4																	4	SMP	4					
<b>Summe der Semesterwochenstunden</b>	<b>55</b>	<b>2</b>	<b>14</b>	<b>8</b>	<b>0</b>	<b>79</b>	<b>12</b>			<b>12</b>			<b>14</b>			<b>14</b>			<b>13</b>			<b>0</b>		<b>14</b>			<b>0</b>			
<b>Summe Credits Lehre</b>						<b>90</b>					<b>14</b>		<b>15</b>			<b>16</b>			<b>15</b>			<b>15</b>		<b>0</b>		<b>15</b>		<b>0</b>		
<b>Credits für Masterarbeit</b>						<b>29</b>																						<b>29</b>		
<b>Credits für Kolloquium</b>						<b>1</b>																						<b>1</b>		
<b>Summe Credits</b>						<b>120</b>					<b>14</b>		<b>15</b>			<b>16</b>			<b>15</b>			<b>15</b>		<b>0</b>		<b>15</b>		<b>30</b>		

V Vorlesung  
 Ü Übung  
 L Labor  
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 S Seminar

WiSe Wintersemester  
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FMP Feste Modulprüfung  
 SMP Studienbegleitende Modulprüfung  
 KMP Kombinierte Prüfungsleistung