

**Unofficial Translation**  
**Excerpt from the**  
**Examination Regulations for the Degree Program**  
**Master of Science (M.Sc.)**

**Applied Physics**

**§ 1 Program profile**

- (1) The Master in Applied Physics degree program is research-oriented and consecutive.
- (2) The Master in Applied Physics degree program offers an advanced interdisciplinary program of study in physics at the interface between physics concepts and modern technologies based on them. On the basis of in-depth study of the principles of modern physics, the program teaches key methods of physics research, such as measurement techniques, data analysis methods, and numerical simulation techniques. In close cooperation with institutes at and outside of the university, especially Freiburg's Fraunhofer institutes, the degree program gives students the opportunity to specialize in one or more areas of applied physics, such as optical technologies, biological systems, energy conversion, or interactive and adaptive materials. Graduates of the master's program are qualified both for work in science and research at interdisciplinary research institutions and for positions in the technology industry.

**§ 2 Program entry and program scope**

- (1) Students may enter the Master in Applied Physics degree program at the start of the winter semester and the summer semester.
- (2) The Master in Applied Physics degree program comprises coursework equivalent to 120 ECTS credits.

**§ 3 Language**

Courses and examinations in the Master in Applied Physics degree program are generally held in English. Some of the elective courses and the associated examinations may be also be held entirely or partially in German.

**§ 4 Curriculum**

(1) Students of the Master in Applied Physics degree program must complete the modules listed in the following table according to the provisions specified in Paragraphs (2) through (7). All available courses in the individual modules are listed and described in the current module handbook.

<b>Module</b>	<b>Type</b>	<b>SWS</b>	<b>ECTS credits</b>	<b>P/WP</b>	<b>Semester</b>	<b>Form of assessment</b>
Advanced Experimental Physics	V + Ü	4 + 2	9	WP	1 or 2	PL: written or oral
Advanced Theoretical Physics	V + Ü	4 + 2	9	WP	1 or 2	PL: written or oral
Applied Physics	variable	variable	18	WP	1 or 2	PL: written or oral
Elective Subjects	variable	variable	10	WP	1 or 2	SL
Term Paper	S	2	6	WP	1 or 2	PL: written and oral
Master Laboratory Applied Physics	V + Ü + S	10	8	P	1 or 2	PL: written and oral
Research Traineeship	Pr		30	P	3	SL
Master Thesis			30	P	4	PL: master's thesis SL: presentation

Abbreviations in table:

Type = type of course; SWS = planned number of contact hours; P = required module; WP = elective module; Semester = recommended program semester; Pr = internship; S = seminar; Ü = exercise; V = lecture; PL = exam; SL = coursework

(2) In the elective module Advanced Experimental Physics, students must complete one advanced lecture course of their choice from the relevant list in the current module handbook.

(3) In the elective module Advanced Theoretical Physics, students must complete one advanced lecture course of their choice from the relevant list in the current module handbook.

(4) In the elective module Applied Physics, students must complete courses from the relevant list in the current module handbook pertaining especially to fields of application such as optical technologies, biological systems, energy conversion, and interactive and adaptive materials. Students may not complete more courses than are necessary to achieve the required 18 ECTS credits. The module examination covers courses completed by the student worth a total of at least 9 ECTS credits.

(5) In the elective module Elective Subjects, worth a total of 10 ECTS credits, students may complete appropriate courses or modules from the curriculum of the Master in Applied Physics degree program or from other master's programs. Courses from other degree programs must be approved by the Departmental Examination Committee.

(6) In the elective module Term Paper, students must take a seminar of their choice on a current area of research. The assessment consists of a written documentation and an oral presentation.

(7) The research internship in the module Research Traineeship is worth 30 ECTS credits and has a duration of six months. It may be completed at the Institute of Physics, a suitable external research institution, or a suitable industrial company. Students may not take the module Research Traineeship until they have successfully completed the course-based assessments of at least three of the four modules Advanced Experimental Physics, Advanced Theoretical Physics, Applied Physics, and Term Paper and successfully completed the module Master Laboratory Applied Physics.

## **§ 5 Coursework**

Each module may include coursework which the student must complete in order to be admitted to the relevant module examination. Examples of such coursework are regular course participation, exams, reports, presentations, one-on-one discussions, or the completion of exercise sheets. The type and scope of coursework are defined in the current module handbook and are announced to the students at the beginning of each course in the particular module.

## **§ 6 Course-based assessments**

(1) Modules in which students are not assessed exclusively on the basis of their coursework conclude with a module examination. As a rule, course-based assessments take the form of supervised written exams or oral exams (exam interviews). The type and scope of course-based assessments are defined in the current module handbook and are announced to the students at the beginning of each course in the particular module.

(2) Written examinations have a duration of at least 60 and no more than 180 minutes. Oral examinations have a maximum duration of 60 minutes.

## **§ 7 Repeating course-based assessments**

(1) Course-based assessments that have been graded "not adequate" (5.0) or considered failed may be repeated once. In addition, a failed assessment may be repeated a second time in a maximum of two of the three modules Advanced Experimental Physics, Advanced Theoretical Physics, and Applied Physics.

(2) The second retake should be held at the next possible examination session after the first retake. § 24 Paragraphs (3) and (4) of these examination regulations apply accordingly.

(3) Students are not permitted to retake successfully completed course-based assessments for the purpose of achieving a better grade.

## § 8 Admission to prepare the master's thesis

Admission to prepare the master's thesis is open only to students who are matriculated in the Master in Applied Physics degree program and have successfully completed the module Research Traineeship. Students who were admitted to the Master in Applied Physics degree program on the condition that they fulfill a certain requirement must also provide evidence that they have fulfilled that requirement.

## § 9 Master's thesis

- (1) The master's thesis must be written within a period of six months and is worth a total of 28 ECTS credits.
- (2) The master's thesis must be written in English or German and must include a summary in the other language.
- (3) The master's thesis must be submitted to the Examination Office in three bound hardcopies and an additional digital copy in a standard file format on a common data storage system.
- (4) At least one of the two evaluators of the master's thesis must be a full-time professor at the Institute of Physics of the Faculty of Mathematics and Physics.
- (5) The master's thesis is complemented by a presentation of the master's thesis in a colloquium with a duration of at least 45 minutes. The colloquium must be held no earlier than two weeks before and no later than four weeks after the due date of the master's thesis. The supervisor of the master's thesis must be present at the colloquium. The student receives 2 ECTS credits for preparing and holding the colloquium.

## § 10 Determination of the overall grade

- (1) The module grades are weighted as follows to determine the student's overall grade:

<b>Module</b>	<b>Percentage of overall grade</b>
Advanced Experimental Physics	11 percent
Advanced Theoretical Physics	11 percent
Applied Physics	11 percent
Term Paper	7 percent
Master Laboratory Applied Physics	10 percent
Master Thesis	50 percent

- (2) The distinction "with honors" is awarded to students whose master's thesis is awarded the grade 1.0 by both evaluators and whose average grade on the modules Advanced Experimental Physics, Advanced Theoretical Physics, Applied Physics, Term Paper, and Master Laboratory Applied Physics, all weighted according to their proportion of the other half of the grade, is better than 1.3.