

These examination regulations have been worded carefully to be up to date; however, errors cannot be completely excluded. The official German text available at the Examinations Office is the version that is legally binding.

Note:

These examination regulations shall apply to students starting the Physics degree programme from the winter semester 2007/08 onwards. Students who are already enrolled in the Physics Diplom degree programme shall sit their examinations according to DPO – Physik (http://www.uni-erlangen.de/universitaet/organisation/recht/studiensatzungen/NAT1/PO_Physik.pdf).

**Examination Regulations for the Bachelor's and
Master's Degree Programme Physics
at the Faculty of Sciences of the
University of Erlangen-Nürnberg – BMPO/Physik –
Dated 07 September 2007**

amended by statutes of
29 September 2010
02 October 2013
17 October 2014

Based on Section 13 (1)(2), Section 43 (5)(2), Section 61 (2)(1) of the Bavarian Higher Education Act (Bayerisches Hochschulgesetz, BayHSchG), the University of Erlangen-Nürnberg enacts the following examination regulations:

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I: General Conditions

Section 1 Scope, Purpose of the Bachelor's and Master's Examination

(1) These examination regulations govern the examinations for the Bachelor's and Master's degree programmes in Physics at the Faculty of Sciences resulting in the degrees 'Bachelor of Science' and 'Master of Science'.

(2)¹The Bachelor of Science is a first university degree that qualifies the graduate for professional work. ²The Bachelor's examination is supposed to determine whether the students have acquired an overview of the basic knowledge of their subject and the necessary expertise for a subsequent Master's degree programme or an early transition to professional practice.

(3) ¹The Master of Science is a second university degree that qualifies graduates for further research as well as professional work. ²The Master's examination is supposed to determine whether the students are capable of working independently according to scientific methods and have acquired the necessary expertise for a subsequent doctoral degree programme or transition to professional practice.

Section 2 Degrees

(1) ¹Passing the examinations results in the following degrees, depending on the type of degree programme:

1. the degree of Bachelor of Science (abbreviation: BSc) for passing the Bachelor's examination
2. the degree of Master of Science (abbreviation: MSc) for passing the Master's examination

²Master's graduates of the integrated Bachelor's and Master's degree programme according to Sections 38 to 41 shall receive the addition '(honours)', abbreviated '(hon.)'.

(2) The degree may also be used with the addition '(FAU Erlangen-Nürnberg)'.

Section 3 Structure of the Bachelor's Degree Programme and the Examinations, Standard Duration of Studies

(1) ¹Students shall take a preliminary examination (Grundlagen- und Orientierungsprüfung, GOP) covering the foundations of the Bachelor's degree programme (Orientation phase) by the end of the second semester. ²The further Bachelor's degree programme (Bachelor's phase) shall comprise the examinations to be taken during the next four semesters, including the modules Bachelor's Thesis and Bachelor's Colloquium. ³The successful completion of the Bachelor's examination requires 180 ECTS credits.

(2) ¹The regular duration of the degree programme, which includes the examinations and work on the Bachelor's thesis, shall be six semesters. ²The content of the degree programme can be learned from the degree programme's module descriptions in the module catalogue.

Section 4 Structure of the Master's Degree Programme and the Examinations

(1) ¹The Master's degree programme builds on the contents of the Bachelor's programme; it is more research-orientated. ²The Master's degree programme has a duration of three semesters and six months for working on the Master's thesis. ³The first

two semesters make up the focus phase, which is based on the Bachelor's programme, and the following two semesters are the research phase. ⁴In the research phase, students shall carry out work on a research project that includes both further technical specialisation and the Master's thesis. ⁵Students need to achieve 120 ECTS credits to complete a Master's degree, including all required module examinations and the modules Master's Thesis and Master's Colloquium. ⁶If students choose the corresponding focus subjects according to **Appendix 6**, they shall be able to study the Master's degree programme with the specialisation 'Physics in Medicine'.

(2) ¹The regular duration of the Master's degree programme, which includes the examinations and work on the Master's thesis, shall be four semesters. ²Section 3 (2)(2) shall apply accordingly.

(3) ¹The teaching and examination language of the Master's degree programme Physics is English. ²Examinations for individual students or groups of students may be conducted in German upon request and with the agreement of the chairperson of the Examinations Committee.

Section 5 ECTS Credits

(1) ¹The degree programmes and examinations are organised based on the European Credit Transfer and Accumulation System (ECTS). ²30 ECTS credits are estimated per semester. ³One ECTS credit corresponds to 25 to 30 hours of work.

(2) ¹ECTS credits serve as a system to categorise, calculate and confirm the amount of work a student has invested. ²They are a quantitative indicator of a student's workload.

Section 6 Modularisation, Course Credit Certificates

(1) ¹The degree programme consists of modules for which students are awarded ECTS credits. ²One module is a chronologically connected and self-contained teaching and learning unit the contents of which can be tested in an examination.

(2) ¹The modules shall be completed with a module examination. ²This examination shall as a rule consist of one examination achievement or one course achievement. ³In exceptional cases, this examination can also consist of several parts (portfolio examination) or a combination of examination and course achievements (portfolio examination) if the subject warrants it. ⁴ECTS credits shall only be given for successful participation in modules that can be verified in an individual, separately identifiable performance in a module examination. ⁵Module examinations are conducted during the lecture period or following the last lecture/seminar of a module before the start of the next semester's lecture period.

(3) ¹Examination achievements and course achievements measure the student's success. ²They may be in writing, oral, electronic or in a different form, such as a graded presentation. ³Examination achievements and partial examinations are graded. ⁴Course achievements confirm whether students have successfully participated.

(4) ¹Enrolment in the relevant degree programme at the University of Erlangen-Nürnberg shall be a requirement for participation in module examinations (Paragraph 2 [1]). ²This shall not apply to resit examinations within the meaning of Section 30 (1)(5).

(5) ¹In addition to the module examination, voluntary interim examinations (e.g. tutorial achievements or course tests) may be offered during courses as a way of measuring the standard of performance. ²More detailed information, including the number, types and scope of these examinations, is given in the module catalogue. ³Interim examination achievements may improve the grade for a module examination or partial examination by a maximum of 0.7.

Section 7 Examination Deadlines, Failure to Observe Deadlines

(1) ¹Examinations shall be sat in such a timely manner as to allow Bachelor's students to obtain 30 ECTS credits in the preliminary examination (GOP) and 180 ECTS credits in the Bachelor's examination and to allow Master's students to obtain 120 ECTS credits by the end of the respective scheduled deadlines. ²Deadlines shall be the second semester of the degree programme for the preliminary examination (GOP) and the last semester of the respective standard duration for the Bachelor's or Master's examination. ³The deadline according to Sentence 2 may be exceeded by the following periods (extended deadline):

1. Preliminary examination (GOP) – by one semester
2. Bachelor's examination – by two semesters
3. Master's examination – by two semesters

⁴An examination shall be considered to have been sat and failed for good if the required number of ECTS credits was not obtained within the extended deadline according to Sentence 3, unless the reasons for this are beyond the student's control.

(2) The deadline set forth in Paragraph 1 shall be extended by claiming the periods of protection according to Sections 3, 4, 6 and 8 of the Maternity Protection Act (Mutterschutzgesetz – MuSchG) in the version published on 20 June 2002 (BGBl I S 2318 [German Federal Law Gazette I p. 2318]) as amended from time to time and according to the periods set forth in the Parental Allowance and Parental Leave Act (Bundeselterngeld- und Elternzeitgesetz – BEEG) of 5 December 2006 (BGBl I S. 2748 [German Federal Law Gazette I p. 2748]) as amended from time to time.

(3) ¹The reasons according to Paragraphs 1 and 2 shall be explained in writing and shown credibly to the Examinations Office without delay. ²If the reasons are acknowledged, the examination shall be sat at the soonest possible time; previous examination and course achievements shall be accredited. ³In cases where the student is unable to sit an examination due to illness, an official certificate from a medical examiner may be required.

Section 8 Examinations Committee

(1) ¹An Examinations Committee shall organise and carry out the examinations. ²The Examinations Committee shall have five members that are professors at the Department of Physics at the Faculty of Sciences; they shall be elected by the Faculty Council. ³The Faculty Council shall elect one of the members as the chairperson and shall elect the deputy representatives. ⁴The term of office of the members shall be three years. ⁵Re-election shall be permitted.

(2) The chairperson may transfer tasks within their responsibility to a member of the Examinations Committee.

(3) ¹The Examinations Committee shall be tasked with carrying out the examination procedures, especially the planning and organisation of the examinations. ²Its duties include ensuring that the provisions of these examination regulations are observed. ³With the exception of the examinations themselves and their evaluation, all deci-

sions shall be taken by the Examinations Committee. ⁴It shall send out the examination notifications in particular, after having verified the examination achievements and their legitimacy. ⁵It shall regularly report to the Faculty Council on the development of the examinations and the duration of studies and, where applicable, provide input on amendments to the examination regulations. ⁶The members of the Examinations Committee shall have the right to be present during the examinations.

(4) ¹The Examinations Committee shall have a quorum when all members are summoned observing a notice period of at least one week and the majority of members is present and eligible to vote. ²Decisions shall be taken with the majority of votes cast in meetings. ³Abstentions, ballot votes and delegation of votes shall not be permitted. ⁴In case of a tie of votes, the vote of the chairperson shall be decisive.

(5) ¹The chairperson shall call the meetings of the Examinations Committee. ²She or he shall be entitled to take decisions that cannot be delayed by herself or himself on the Examinations Committee's behalf. ³The Examinations Committee shall be informed of such cases without delay. ⁴Furthermore, unless these examination regulations state otherwise, the Examinations Committee shall have the right to revocably charge the chairperson with carrying out individual tasks.

(6) ¹Official notifications in matters pertaining to examinations that may result in the infringement upon a person's rights shall be made in writing; reasons shall be given and information on legal remedies available to the person shall be included. ²Students shall be given the opportunity to make a statement before negative decisions are finalised. ³The Examinations Committee shall have the right to rule that grade notifications may be sent out in electronic form to the individual students. ⁴The president shall issue the notification of objection; in questions of examination legislation following consultation with the Examinations Committee and after hearing the examiners.

Section 9 Examiners, Exclusion due to Personal Involvement, Obligation to Confidentiality

(1) ¹The Examinations Committee shall appoint the examiners. ²All persons eligible to administer examinations according to the Bavarian Higher Education Act (BayHSchG) and the Bavarian Higher Education Examiners Act (BayHSchPrüferV) as amended from time to time shall be eligible for appointment.

(2) A change of examiners shortly before the start of an examination shall be permissible on urgent grounds.

(3) ¹Persons who have completed the degree programme in question or an equivalent degree programme shall be eligible for appointment as observers. ²Observers shall be research associates (*wissenschaftliche Mitarbeiter*) as their primary occupation.

(4) Exclusion from the deliberation and voting process of the Examinations Committee as well as from the positions of examiner and observer due to personal involvement shall be governed by Section 41 (2) BayHSchG.

(5) The obligation to confidentiality of the Examinations Committee and other persons involved in matters pertaining to examinations shall be governed by Section 18 (3) BayHSchG.

Section 10 Announcement of Examination Type, Examination Dates and Examiners, Registration, and Withdrawal

(1) ¹The nature and scope of the examinations are shown in the module plan in **Appendices 2, 4 and 5**. ²The dates of the examinations and the examiners shall be announced by the Examinations Office at least two months before the examination and according to local practice.

(2) ¹The students shall register for the individual module examinations after the start of the lecture period. ²The registration dates and formalities shall be announced by the Examinations Committee according to local practice four weeks prior.

(3) ¹The periods set forth in Sections 7 and 30 notwithstanding, withdrawal from individual examinations shall be possible without adverse consequences. ²Students may withdraw from an examination before the beginning of the examination at the latest. ³Students shall not be required to state reasons for such a withdrawal. ⁴After this point in time, withdrawal shall only be possible if reasons beyond the student's control according to Section 7 (1)(4) and (3) are given. ⁵Such reasons shall be proven to the Examinations Office without delay. ⁶Withdrawal shall be effected by absence from the examination or, if the examination achievement has already been completed, by declaring the withdrawal to the examiner or the Examinations Office. ⁷An effective withdrawal shall result in the forfeiture of the registration for the examination.

Section 11 Admissions Committee for the Master's Degree Programme

(1) The evaluation of the qualification and admission requirements for the Master's degree programme shall be the responsibility of the Admissions Committee.

(2) ¹The Admissions Committee shall consist of three members of full-time research staff who are authorised examiners according to the Bavarian Higher Education Act (Bayerisches Hochschulgesetz) and the Higher Education Examiners Act (Hochschulprüferverordnung). ²At least two members including the chairperson shall be professors. ³The members and their respective alternative representatives shall be appointed by the Faculty Council of the Faculty of Sciences for a term of office of three years; re-election shall be permitted. ⁴Section 8 (4) and (5)(1) shall apply accordingly.

Section 12 Accreditation of Skills

(1) ¹Study periods, modules, course and examination achievements achieved in degree programmes at other public or state-approved universities in the Federal Republic of Germany, through successful participation in a distance course as part of a degree programme at a public or state-approved university in the Federal Republic of Germany, or in degree programmes at foreign universities shall be accredited according to these examination regulations unless there are significant differences in the skills acquired. ²The same shall apply to study periods, course and examination achievements achieved at a public or state-approved university in Bavaria in the course of other study programmes within the meaning of Section 56 (6)(1) and (2) BayHSchG, in special study programmes within the meaning of Section 47 (3)(1) BayHSchG, or at the Virtual University of Bavaria.

(2) ¹Skills acquired in the course of successfully completed vocational training, courses of secondary education or other specific courses within the meaning of Section 56 (6)(3) BayHSchG, or outside of higher education may be accredited if

they are equivalent to skills acquired through university studies. ²Skills acquired outside the university sector shall replace no more than half of the required skills of which students must provide proof.

(3) ¹The grades achieved in approved modules, examinations and coursework shall be transferred if they were awarded according to Section 20. ²If the grading system applied in the examinations sat at the university or equivalent institution of higher education and accredited by FAU Erlangen-Nürnberg is not identical to the grading system set forth in Section 20, the grades achieved at other universities shall usually be converted according to the following formula:

$$x = 1 + 3 \frac{(N_{\max} - N_d)}{(N_{\max} - N_{\min})} \text{ with}$$

x = converted grade

N^{\max} = best grade attainable

N_{\min} = lowest grade for passing

N_d = grade attained

³Only one decimal place is shown for the grades thus calculated. ⁴If this conversion is not possible or demonstrably inadequate, the Examinations Committee determines a system by which to calculate the grades.

(4) ¹The documents needed for this accreditation shall be submitted to the chairperson of the Examinations Committee. ²If the conditions set forth in Paragraphs 1 to 2 are met, the student shall have a legal claim to accreditation. ³The decision shall rest with the chairperson of the Examinations Committee after consultation with the department representative appointed by the department in question. ⁴The decision shall be issued in writing.

Section 13 Fraud, Breach of Regulations

(1) ¹An examination achievement shall be graded as 'nicht ausreichend' (unsatisfactory; 5.0) if the student withdraws from the examination after the withdrawal period (cf. Section 10 [3]) without good reasons. ²The reasons for withdrawal or tardiness shall be explained in writing and shown credibly to the Examinations Committee without delay. ³If the Examinations Committee accepts the reasons, a new date shall be set. ⁴In cases where the student is unable to sit an examination due to illness, an official certificate from a medical examiner may be required.

(2) ¹In case of an attempt to commit fraud or to influence the result of an examination through the use of unauthorised materials, the examination in question shall be graded as 'nicht ausreichend' (unsatisfactory; 5.0). ²Persons who disturb the orderly examination process may be excluded from continuing the examination by the authorised examiner or the supervising person; in this case the examination achievement in question shall be considered to be 'nicht ausreichend' (unsatisfactory; 5.0). ³Sentences 1 and 2 shall apply to course achievements accordingly.

(3) The decision on exclusion from further participation in the examination shall rest with the Examinations Committee.

Section 14 Revocation of Degrees

The revocation of degrees shall be governed by Section 69 BayHSchG.

Section 15 Faults in the Examination Process

(1) Should it turn out that the examination process was faulty in a manner that influenced the result of the examination, it shall be ordered upon a student's request that a certain student or all students shall resit the examination or parts of the same.

(2) Faults in the examination process shall be reported to the chairperson of the Examinations Committee or the examiner without delay.

(3) Six months after completion of the examination, resit examinations may no longer be ordered ex officio as stipulated in Paragraph 1.

Section 16 Compulsory Attendance

(1) ¹For lectures, which are marked accordingly in the respective module description, in which the qualification goal can only be achieved by regular attendance, compulsory attendance can be made a requirement for admission to the module examination or for obtaining the course achievement. ²If attendance of the individual student is required for all participants to obtain the subject-specific skills, if the individual student obtaining such skills depends on the attendance of the other participants, if subject-specific skills can only be obtained by being present at a particular place, or if participation is required for safety reasons, it is permissible to introduce an obligation to attend.

(2) ¹Regular attendance is defined as no more than 15% of the lectures of any given course have been missed. ²If between 15% and 30% of the lectures have been missed, the lecturer can offer the student the option to obtain a skills-orientated substitute achievement fulfilling the requirement of regular attendance. If no such substitute achievements are offered or the substitute achievements offered are not obtained by the student, attendance is not considered to have been regular. ³If more than 30% of all lectures have been missed, the course must be taken again. ⁴Any positions after the decimal point in the percentage of lectures missed shall be rounded for the benefit of the student.

(3) ¹Paragraph 2 notwithstanding, in the context of excursions and placements attendance is only considered to have been regular if all teaching units have been attended. ²Appropriate skills-orientated substitute achievements fulfilling the requirement of regular attendance shall be offered in the case of credibly shown periods of absence due to reasons beyond the student's control of up to and including 15% of all lectures. ³If more than 15% of all lectures have been missed, the course must be taken again. ⁴Any positions after the decimal point in the percentage of lectures missed shall be rounded for the benefit of the student.

(4) Attendance is checked in the individual lectures by means of an attendance list in which students must enter their name and signature, or in a comparable manner.

Section 17 Written Examination

(1) ¹In written examinations (see **Appendices 2, 4 and 5** for types and durations of written examinations) students are required to prove that they are capable of identifying a problem within a limited period, using the conventional methods employed in their field, and to find a solution to this problem. ²In exceptional cases (in particular due to stays abroad, illness or disproportionate strain on resources), the Examinations Committee may permit a change in the type of examination at the examiner's or

the examinee's request. ³All those involved shall be informed of the Examinations Committee's decision without delay.

(2) ¹Written examinations shall have a minimum duration of 60 and a maximum duration of 180 minutes. ²Details of the lengths of each examination are given in **Appendices 2, 4 and 5**. ³Written examinations shall generally be evaluated by an examiner. ⁴If a written examination is graded as 'nicht ausreichend' (unsatisfactory; 5.0), it shall be presented to a second examiner for evaluation. ⁵Section 20 (2)(4) and (2)(5) shall apply accordingly.

(3) ¹Written examinations may take the form of multiple-choice examinations (single or multiple choice), either in full or in part. ²Detailed information on the modules in which written examinations take the form of multiple choice questions are given in the module catalogue. ³It must be specified during the design of the examination questions which of the answers shall be accepted as correct. ⁴If the question does not allow multiple answers, multiple answers shall be inadmissible and disregarded. ⁵Before the evaluation of the examination results, at least two of the authors of the examination shall assess whether the examination questions allow for reliable examination results. ⁶Should they determine that individual examination questions are faulty, these shall not be taken into account in the evaluation of the examination result; the number of examination questions shall be considered to have been reduced. ⁷This reduction of the number of examination questions may not result in disadvantages for any of the examinees. ⁸No minus points may be awarded outside of individual examination questions.

4) ¹The examinations according to Paragraph 3 shall be considered to have been passed if

1. The examinee answered at least 50 percent of the examination questions correctly/achieved at least 50 percent of the attainable points, or
2. The examinee answered at least 40 percent of the examination questions correctly/achieved at least 40 percent of the attainable points and the number of correct answers is no more than 17 percent below the average number of correct answers for all examinees sitting the examination for the first time.

²If Sentence 1 (2) is applied, the Dean of Studies shall be notified.

(5) In case of written examinations that are not entirely composed of multiple choice questions, Paragraphs 3 and 4 shall only apply for this part.

(6) Section 20 (3) shall apply to grading.

Section 18 Oral Examination

(1) ¹In oral examinations students are required to prove that they grasp the context of their subject and can handle specific questions in this context. ²Oral examinations shall be conducted, unless otherwise stated, in the presence of an observer appointed by the examiner. ³They are individual examinations and shall last between 15 and 45 minutes. ⁴Details of the lengths of each examination are given in **Appendices 2, 4 and 5**. Section 17 (1)(2) and (1)(3) shall apply accordingly.

(2) ¹In oral examinations before several authorised examiners every examiner shall determine the grade according to Section 20 (1). ²Section 20 (2)(4) and (2)(5) shall apply accordingly.

(3) ¹Minutes shall be recorded for oral examinations; they shall include the following: time, date and duration of the examination; subjects and result of the examination; the names of the examiners, the observer and the student; and any special occurrences. ²The minutes shall be signed by the authorised examiner and the observer. ³It shall not be necessary to record the questions asked in the examination or the answers given. ⁴The minutes shall be kept in the examination records for a minimum of two years.

(4) ¹Students planning to undergo the same examination shall be permitted to be present as listeners during oral examinations within the bounds of feasibility with regard to the examination's location; listeners shall be excluded at the examinee's request. ²Oral examinations in the form of presentations may be declared as public in these examination regulations, its appendices or in the module catalogue; in this case listeners shall be permitted without restrictions. ³This permission shall in no case extend to the deliberation process and the announcement of the examination result.

Section 19 Electronic Examinations

¹Examinations may be administered in electronic form. ²Electronic examinations (e-examinations) are examinations which are administered and evaluated via computer-aided or digital media. ³The authenticity and integrity of the examination results shall be verified. ⁴Automatically calculated evaluations of examination achievements shall be verified by one examiner at the request of the examinee or two examiners in case of a failed examination.

Section 20 Evaluation of Examinations, Final Grade

(1) The evaluation of individual examinations shall be expressed by the examiners with the following ratings and grades:

Sehr gut (very good)	= (1.0 or 1.3)	an outstanding achievement
Gut (good)	= (1.7 or 2.0 or 2.3)	an achievement that exceeds the average requirements considerably
Befriedigend (satisfactory)	= (2.7 or 3.0 or 3.3)	an achievement that fulfils average requirements
Ausreichend (sufficient)	= (3.7 or 4.0)	an achievement that fulfils the requirements despite flaws
Nicht ausreichend (unsatisfactory)	= (4.3 or 4.7 or 5.0)	an achievement that no longer fulfils requirements due to considerable flaws

(2) ¹An examination (Section 6 [2]) shall have been passed if it has received at least the grade 'ausreichend' (sufficient). ²For ungraded examinations (Section 6 [3][4]) the rating shall be 'mit Erfolg teilgenommen' (successfully completed) or 'nicht mit Erfolg teilgenommen' (not successfully completed). ³Except where otherwise stipulated according to Para. 11, a module examination shall have been passed when all partial achievements have been passed. ⁴If an examination has several examiners or several partial achievements, the total grade shall be calculated from the arithmetic average of the individual grades. ⁵Two decimal places shall be shown in the calculation of the grade; further decimal places shall be omitted without being rounded.

(3) ¹Multiple choice examinations shall be evaluated as follows: ²Students who answer the required minimum of examination questions according to Section 17 (4)(1) correctly shall receive the grade

- 1.0 (sehr gut/very good) if at least 75 percent of the remaining questions were answered correctly,
2.0 (gut/good) if at least 50 percent but less than 75 percent of the remaining questions were answered correctly,
3.0 (befriedigend/satisfactory) if at least 25 percent but less than 50 percent of the remaining questions were answered correctly,
4.0 (ausreichend/sufficient) if no or less than 25 percent of the remaining questions were answered correctly.

³The grades can be increased or decreased by increments of 0.3 according to the percentage; the grade 0.7 shall not be awarded. ⁴Students who do not achieve the required minimum shall receive the grade 5.0. ⁵Sentence 3 notwithstanding, the grades 4.3 and 4.7 may be awarded in cases in which examinations according to Section 17 (5) partly take the form of a multiple choice examination.

(4) ¹The preliminary examination (GOP) shall have been passed if the required modules for the first two semesters stipulated in Section 32 have been passed.

(5) ¹The overall grade of the Bachelor's examination, the Master's examination and the modules shall be as follows:

at an average of up to 1.50 = sehr gut (very good)

at an average of over 1.50 and up to 2.50 = gut (good)

at an average of over 2.50 and up to 3.50 = befriedigend (satisfactory)

at an average between 3.50 and 4.00 = ausreichend (sufficient)

²Students who achieve an overall Bachelor's or Master's grade up to and including 1.20 shall receive the assessment 'mit Auszeichnung' (with distinction).

(6) ¹The module grades shall be calculated from the average of the individual grades achieved in the examinations within the meaning of Section 6 (2)(3). ²Two decimal places shall be shown in the calculation of the grade; further decimal places shall be omitted without being rounded. ³If there is only one graded examination in a module, this grade shall be the module grade. ⁴If no graded examination is conducted, the module shall be rated as 'erfolgreich teilgenommen' (successfully completed) or 'nicht erfolgreich teilgenommen' (not successfully completed).

(7) The preliminary examination (GOP) shall be ungraded.

(8) ¹The overall grade of the Bachelor's examination shall be calculated from all module grades achieved in the Bachelor's degree programme, the grade of the thesis and the Bachelor's colloquium, unless otherwise stated in **Appendix 1**; the individual grades shall be weighted according to their ECTS credits. ²Two decimal places shall be shown in the final grade; further decimal points shall be omitted without being rounded.

(9) ¹The overall grade of the Master's examination shall be calculated from all module grades achieved in the Master's degree programme, the grade of the thesis and the Master's colloquium, unless otherwise stated in Appendix 1; the individual grades shall be weighted according to their ECTS credits. ²Paragraph 8 (2) shall apply accordingly.

(10) ¹If more modules were completed successfully than necessary for passing the Bachelor's or Master's examination, only those grades that are necessary to fulfil the conditions stipulated in Sections 31 and 37 shall be used in the calculation of the final grade. ²If more than one combination of modules is possible, the combination which produces the better final grade shall be applied. ³Other combinations can be credited upon the student's request.

(11) ¹**Appendix 1** may stipulate that individual module examinations shall be given half or double weighting or a weighting of zero in the calculation of the grade.
²Compensatory measures for failed partial examinations

Section 21 Invalidity of Examinations

(1) If fraudulent methods were used during the examination and if this only becomes known after the certificate has been awarded, the Examinations Committee may correct the grade after the fact and declare the examination as having been failed in part or in full.

(2) If the requirements for admission to the examination were not fulfilled while no fraudulent acts were committed wilfully and if this fact only became known after the certificate has been awarded, these circumstances shall be considered remedied by the passing of the examination.

(3) Students shall be given the opportunity to make a statement before a decision is taken.

(4) ¹The incorrect certificate shall be withdrawn; a new certificate shall be issued if applicable. ²A decision according to Paragraph 1 and Paragraph 2 shall be excluded after a period of five years starting with the certificate's date of issue.

Section 22 Inspection of Examination Records

(1) After the completion of the individual examination procedures, students shall on request be entitled to inspect their written examination papers, the corresponding reviews by the examiners, and the examination minutes.

(2) ¹The request shall be submitted to the chairperson of the Examinations Committee within one month of the notification of grades. ²Students prevented from observing this deadline without any fault of their own shall be granted restitutio in integrum according to Section 32 of the Bavarian Administrative Procedures Act (BayVwVfG) as amended from time to time. ³The chairperson of the Examinations Committee shall determine the time and date of the inspection.

Section 23 Report, Diploma Supplement, Transcript of Records, Certificate

(1) Students who have successfully completed a degree programme shall receive a report, a transcript of records, a diploma supplement and a degree certificate, if possible within four weeks.

(2) ¹The report shall include the modules and module grades used in the calculation of the Bachelor's or Master's examination grade as well as the Bachelor's or Master's examination grade itself. ²The transcript of records lists all successfully completed modules; the report and the transcript of records may be combined into one document. ³The transcript of records and the diploma supplement shall be issued in English and German. ⁴Further details on the diploma supplement, in particular regarding its content, shall be determined by the Examinations Committee. ⁵Information not yet available to the Examinations Office must be submitted together with the required proof by the time of the degree programme's completion at the latest; otherwise this information may no longer be taken into consideration for the documents listed in Paragraph 1.

Section 24 Notification on Failed Examinations

Upon request and submission of the required certificates as well as the de-registration certificate, students who have failed the Bachelor's or Master's examination for good shall receive a written confirmation showing that the examination was failed, which grades were achieved in the individual module examinations and which examination achievements are still missing.

Section 25 Adjustments to Examination Arrangements

(1) ¹The examination procedure shall be adjusted to take into account the nature and extent of a student's disability. ²Students with a doctor's certificate showing credibly that they are either in part or fully incapable of sitting the examination in the intended manner due to long-term or permanent physical disabilities shall be entitled to have the permission of the chairperson of the Examinations Committee to offset this disadvantage by a corresponding extension of their working time or by the examination process being structured differently.

(2) Paragraph 1 shall apply to pregnant students if the student submits a medical certificate, at least four weeks before the examination date, confirming that she will be at least 30 weeks pregnant by the examination date.

(3) Decisions according to Paragraph 1 and 2 shall only be made upon written request by the chairperson of the Examinations Committee.

II: Special Provisions

Part I: Preliminary Examination (GOP) and Bachelor's Examination

1. General Provisions for the Bachelor's Degree Programme

Section 26 Admission Requirements for Examinations

(1) ¹Students enrolled in a Bachelor's degree programme shall be deemed as admitted to the Bachelor's examination and the module examinations of which the Bachelor's examination consists, unless admission is to be refused. ²If there are elective options for the modules to be completed for the Bachelor's examination, students shall only be admitted to the modules they choose by registering for the examination; the choice shall be binding and students may also choose several modules offered as an alternative. ³Admission shall be refused if:

1. Requirements stipulated in the special provisions are not met or certificates are not submitted at all or not in due time
2. The preliminary examination (GOP) has been failed for good
3. The Bachelor's examination, the Diplom intermediary examination or the Diplom examination in the degree programme Physics were failed for good
4. De-registration of the student resulting in the revocation of the student's right to sit the examination is effected.

(2) If admission to the degree programme's examinations is to be refused, the decision shall be taken without delay, furnished with reasons and information on legal remedies available and announced to the student.

Section 27 Preliminary Examination (Grundlagen- und Orientierungsprüfung, GOP)

(1) In the preliminary examination (GOP) (see Section 7 [1]) students are to prove that they

- can fulfil the requirements of an academic course of study in the chosen subject
- have acquired the methodological skills required to continue their studies successfully

(2) The preliminary examination (GOP) shall be evaluated according to Section 32.

Section 28 Bachelor's Phase

(1) ¹The Bachelor's phase shall serve as a phase for expansion and specialisation, conveying expertise that goes beyond the knowledge acquired in the orientation phase and that is necessary for early career entry. ²It consists of the module examinations of the Bachelor's phase, the Bachelor's examination and a Bachelor's colloquium. ³The Bachelor's examination shall have been passed if all required module examinations and the Bachelor's thesis module including the Bachelor's colloquium have been passed. ⁴The Bachelor's colloquium is an oral examination that consists of a presentation on the Bachelor's thesis that lasts approximately 30 minutes and that is usually public, followed by a discussion.

(2) ¹The fifth semester of the degree programme is intended as a window for a semester abroad. ²Achievements obtained abroad shall be accredited according to Section 12.

Section 29 Bachelor's Thesis

(1) ¹The Bachelor's thesis is supposed to show that the student is capable of dealing with a problem from their field independently according to scientific methods within a set period and presenting the results in an appropriate form. ²10 ECTS credits shall be awarded for the Bachelor's thesis.

(2) ¹Full-time lecturers for the Physics degree programme (supervisors) shall be entitled to assign Bachelor's theses. ²The Examinations Committee shall have the right to grant and regulate exceptions.

(3) ¹Students shall ensure that they are allocated a subject for their Bachelor's thesis within the periods set forth in Section 7, usually at the start of the lecture period of the sixth semester at the latest. ²The subject and the date of its allocation shall be confirmed by the supervisor and presented to the Examinations Committee. ³Should a student, despite a genuine effort to that end, not be allocated a subject, the chairperson of the Examinations Committee shall allocate a subject and a supervisor to the student upon request.

(4) ¹The time between the selection of a subject and the submission of the Bachelor's thesis (standard period for work on the thesis including maximal extension period) shall not exceed four months. ²The scope of the subject shall be such that the workload for the Bachelor's thesis and the preparation of the Bachelor's colloquium does not exceed a total 450 hours and students are able to complete the Bachelor's thesis within the standard period. ³The standard period for thesis work shall be three months and may be extended by a maximum of one month in justified, exceptional

cases. ⁴If a student submits a doctor's certificate proving that they are incapable of working on the thesis, the period for thesis work shall be held in abeyance. ⁵Upon the student's written request and with the supervisor's agreement, the chairperson of the Examinations Committee may interrupt the period for thesis work if other valid reasons beyond the student's control are given.

(5) The subject of the Bachelor's thesis may only be returned once and with good reason and the approval of the chairperson of the Examinations Committee within the first two weeks of the period for thesis work.

(6) ¹The Bachelor's thesis may be written in English on the student's request and with the supervisor's approval. ²The chairperson of the Examinations Committee shall decide whether to grant the student's request.

(7) One bound copy and one electronic copy each shall be submitted to the supervisor and the library of the Department of Physics ("Gruppenbibliothek Physik"); confirmations of these submissions and a copy of the title page shall be submitted to the Examinations Office.

(8) ¹The thesis shall be evaluated by two examiners within four weeks of submission. ²The person who allocated the subject shall generally be the first reviewer.

(9) ¹The thesis shall be accepted if it receives at least the grade 'ausreichend' (sufficient) from both reviewers. ²It shall be rejected if it receives the grade 'nicht ausreichend' (unsatisfactory) from both reviewers. ³If a reviewer grades the thesis as 'nicht ausreichend' (unsatisfactory) and the other reviewer grades it at least as 'ausreichend' (sufficient), the Examinations Committee shall effect a third review and grading by an examiner according to Section 9. ⁴If the third grade is also 'nicht ausreichend' (unsatisfactory), this shall be the grade the thesis receives; otherwise the grade shall be the lower of the two grades that are at least 'ausreichend' (sufficient).

(10) ¹If the thesis has been accepted according to Section 9 (1) and if the evaluations of the two reviewers are no more than two numerical grades apart, the grade of the thesis shall be the arithmetic average of the grades from the two reviewers; two decimal places shall be shown in the final thesis grade. ²If the grades of the two reviewers are three or more numerical grades apart, the chairperson of the Examinations Committee shall appoint a third reviewer; in this case the Examinations Committee shall determine the grade in consideration of the reviews it received and according to Section 20 (1), or as the average grade from the reviewers' grades; Sentence 1 shall apply accordingly.

(11) ¹If the thesis is rejected or if it is regarded as rejected, it may be repeated once; a second repetition or revision shall not be permitted. ²The student shall ensure that they receive a new subject for the repetition of the Bachelor's thesis within two months following the announcement of the rejection; otherwise the Bachelor's thesis shall be regarded as having been failed for good; Paragraph 3 (3) shall apply accordingly. ³Paragraphs 1 to 10 shall apply accordingly to the repetition.

(12) Provisions that deviate from Paragraphs 1–11 may be agreed upon within the framework of dual degree agreements or degree programme co-operations.

Section 30 Resit Examinations

(1) ¹With the exception of the modules of the preliminary examination (GOP), the Bachelor's thesis and colloquium, every failed module examination may be resat twice. ²The resit examination shall be limited to the failed examination or course achievement. ³The module examinations of the preliminary examination (GOP) may only be resat once. ⁴Resit examinations shall take place at the earliest possible date; the Department must offer such a date within six months. ⁵The resit period shall not be interrupted by de-registration or leave. ⁶Students who have failed an examination shall be deemed as having registered for the next resit examination. ⁷If a student misses the resit examination or the resit period is not observed, the examination shall be deemed to have been failed unless the Examinations Committee grants the student a respite due to special reasons beyond the student's control. ⁸The provisions regarding maternity protection and parental leave (Section 7 (2)) shall apply.

(2) ¹Voluntarily resitting a passed examination of the same module shall not be permitted. ²Alternative modules may be attended and completed instead of failed modules within the examination periods set forth in Section 7.

(3) Subject to the special provisions in Section 32, students may choose in which order they complete the modules.

2. Examination Matter in the Bachelor's Degree Programme

Section 31 Examination Matter and Degree Programme Structure

(1) ¹Students shall successfully complete modules from the **compulsory modules** of the Bachelor's degree programme worth a minimum of 140 ECTS credits to pass the Bachelor's examination. ²These modules are:

- (a) the modules *Experimentalphysik 1+2* and *Experimentalphysik 3+4*;
- (b) at least one of the modules *Experimentalphysik 5 and 6*;
- (c) *Grundpraktikum 1 and 2*;
- (d) the laboratories *Physikalisches Experimentieren 1 and 2*;
- (e) the module *Theoretische Physik 1* (Mechanik);
- (f) at least two of the three modules *Theoretische Physik 2–4* (Elektrodynamik, Quantenmechanik, Statistische Physik);
- (g) the module *Mathematik für Physiker 1*;
- (h) at least one of the modules *Mathematik für Physiker 2 and 3*;
- (i) *Kolloquium Theoretische Physik*;
- (j) *the Bachelor's thesis*;
- (k) *the Bachelor's colloquium*.

(2) ¹The **elective subjects** are divided into the **elective physics subjects** and the **elective non-physics subjects**. ²Students shall successfully complete modules from the elective subjects worth at least 25 ECTS credits.

(3) ¹In the **elective physics subjects**, students shall acquire specialised and interdisciplinary knowledge on topics of their choosing from the field of physics. ²Students shall successfully complete modules worth at least 10 ECTS credits, among them the module *Physikalisches Seminar*. ³The modules that are part of the elective physics subjects can be found in the module catalogue. ⁴The scope and ECTS credits of individual modules may deviate from the data given in **Appendix 2**, table 1.

(4) ¹Students shall successfully complete modules from the **elective non-physics subjects** worth at least 10 ECTS credits. ²In the orientation phase of the Bachelor's degree programme, students obtain basic knowledge in a physics-related subject

(*Nichtphysikalisches Wahlfach 1*). ³Currently Astronomy, Chemistry, Computer Science, and Physical Chemistry are permitted. ⁴In the Bachelor's phase, students may acquire specialised knowledge of the same or basic knowledge of another elective non-physics subject as long as these subjects are related to the subject of physics. ⁵This shall particularly apply to all subjects at the Faculty of Sciences, the Faculty of Engineering and the non-clinical subjects at the Faculty of Medicine; other cases shall be decided by the Examinations Committee.

(5) ¹In addition to the non-physics elective subjects, students shall complete modules that do not belong to the Physics degree programme worth at least 2.5 ECTS credits from the **Core Skills** area in the University's course catalogue. ²The Examinations Committee may accept courses as core skills that are not from the University's course catalogue upon written request; the request shall state reasons. ³Modules from the Core Skills area shall be ungraded.

(6) ¹The minimum of 167.5 ECTS credits required according to Paragraphs 1, 2 and 5 shall be complemented to the 180 ECTS credits necessary for completion of the Bachelor's degree through additional, freely chosen modules from the compulsory and elective subjects or from the Core Skills area (**free area**).

(7) See **Appendix 2** and **5** for the structure of the degree programme.

Section 32 Preliminary Examination (Grundlagen- und Orientierungsprüfung, GOP)

In order to successfully pass the preliminary examination (GOP), students must obtain a minimum of 30 ECTS credits from the modules listed for the first two subject semesters in **Appendix 2** by the end of the second semester, particularly from the modules:

(a) *Grundpraktikum 1*;

(b) at least one of the three modules *Theoretische Physik 1*, *Mathematik für Physiker 1* and *Mathematik für Physiker 2*.

Part II: Master's Examination

1. General Provisions for the Master's Degree Programme

Section 33 Qualification for a Master's Degree Programme

(1) ¹Students shall have completed a relevant degree with above-average success to qualify for the Master's degree programme. ²Certificates for the following may be submitted as proof of qualification:

1. A Bachelor's examination according to these examination regulations or
2. A German or non-German university degree that is equivalent to the qualification specified in point 1
and
3. A pass in the qualification assessment process according to **Appendix 3**.

(2) ¹Applicants are to belong to the best 50 percent of their class or shall have completed the degree programme in question with a final grade of at least 2.5 ('gut'; good). ²Degrees that were graded according to a different grading system are to have received at least a rating equivalent to the grade 'gut' (good).

(3) ¹Bachelor's degrees in physics and materials physics shall generally be considered equivalent. ²If there are significant differences which can be substituted, the Admissions Committee may grant admission under the condition that proof of further achievements worth up to a maximum of 20 ECTS credits and to be determined by the Admissions Committee be submitted within one year of taking up studies for a Master's degree.

(4) Section 26 shall apply accordingly.

Section 34 Master's Examination

(1) ¹The Master's examination shall consist of the required examinations and the Master's thesis. ²The Master's thesis shall be complemented with an oral examination (Master's colloquium). ³The Master's examination shall have been passed if all required module examinations, the Master's thesis module and the Master's colloquium module have been passed.

(2) ¹**Appendices 4 and 5** shall specify subjects, type and scope of the Master's examination. ²The provisions in **Appendix 6** shall additionally apply to students completing the Master's examination with the specialisation 'Physics in Medicine'. ³Modules that were the subject of a Bachelor's examination may not be included in the Master's examination. ⁴The Examinations Committee may grant exceptions.

Section 35 Research Phase and Master's Thesis

(1) ¹The Master's thesis is an examination paper that concludes the Master's degree. ²The Master's thesis is supposed to show that the student is capable of dealing with a problem from the field of physics independently, with scientific methods and within a set period. ³The Master's thesis may not to any significant degree be identical to a previously submitted Diplom, Bachelor's or Master's thesis, or dissertation. ⁴Students are awarded 25 ECTS credits for the Master's thesis. ⁵The work on the Master's thesis is preceded by three months of subject specialisation and three months of project planning that prepare the student on the subject of the thesis. ⁶Subject specialisation, project planning, Master's thesis and Master's colloquium together make up the year-long research phase.

(2) ¹Students shall ensure that they are allocated a project for the research phase in time to observe the deadlines set forth in Section 7. ²Should a student, despite a genuine effort to that end, not be allocated a subject, the chairperson of the Examinations Committee shall allocate a subject and a supervisor to the student upon request.

(3) ¹The supervisor shall be a university lecturer employed in the Physics degree programme at the University of Erlangen-Nürnberg as their main occupation. ²The Examinations Committee shall have the right to grant and regulate exceptions.

(4) ¹After successfully completing the subject specialisation and project planning stages, students shall be allocated a subject for their Master's thesis. ²The subject and the date of its allocation shall be confirmed by the supervisor and presented to the Examinations Committee. ³The time between the selection of a subject and the submission of the Master's thesis shall not exceed six months; the scope of the subject must be such that it can be dealt with within this period. ⁴The period for the Master's thesis may be extended by way of exception by a maximum of three months upon justified request. ⁵Section 29 (4)(4) and (4)(5) shall apply accordingly.

(5) ¹The subject may only be returned once and with good reason and with the approval of the chairperson of the Examinations Committee. ²Otherwise the Master's thesis shall be graded 'nicht ausreichend (unsatisfactory; 5.0) when the subject is returned; it shall be regarded as rejected.

(6) ¹The Master's thesis may be written in German on the student's request and with the supervisor's approval. ²The chairperson of the Examinations Committee shall decide whether to grant the student's request. ³The Master's thesis shall contain a summary of results at the end. ⁴The design of the title page shall follow the template provided by the Examinations Committee. ⁵The Master's thesis shall include a declaration by the student confirming that the thesis is an original work and that no other sources or materials than the ones listed were used. ⁶One bound copy and one electronic copy each shall be submitted to the supervisor and the library of the Department of Physics ("Gruppenbibliothek Physik"); confirmations of these submissions including the submission date and a copy of the title page shall be submitted to the Examinations Office. ⁷If the Master's thesis is not submitted in time, it shall be graded 'nicht ausreichend' (unsatisfactory; 5.0); it shall be regarded as rejected.

(7) Section 29 (8) and (11) shall apply accordingly.

(8) ¹If the Master's thesis is rejected or if it is regarded as rejected, it may be repeated once; a second repetition shall not be permitted. ²The student shall ensure that they receive a new subject for the repetition of the Master's thesis within two months following the announcement of the rejection; otherwise the Master's thesis shall be regarded as having been failed for good; Paragraph 2 (2) shall apply accordingly. ³Paragraphs 4–7 shall apply accordingly for the repetition of the Master's thesis; returning the subject shall not be permitted.

(9) Provisions that deviate from Paragraph 1–8 may be agreed upon within the framework of dual degree agreements or degree programme co-operations.

Section 36 Resit Examinations

For resit examinations Section 30 shall apply accordingly.

2. Examination Matter in the Master's Degree Programme

Section 37 Examination Matter and Degree Programme Structure

(1) ¹During the first two semesters ('focus phase') of the Master's degree programme, students shall acquire specialised knowledge in chosen areas of physics. ²In semesters 3 and 4 ('research phase'), students shall carry out a research project independently, process its results in the Master's thesis and present them in the Master's colloquium. ³The modules *Specialisation phase* and *Project planning and preparation* are intended to prepare students for the Master's thesis; their content reflects this.

(2) ¹Students shall successfully complete modules from the **compulsory modules** of the Master's degree programme worth a minimum of 90 ECTS credits to pass the Master's examination.

²These modules are:

- (a) at least one of the *Advanced experimental physics* modules
- (b) at least one of the *Advanced theoretical physics* modules

- (c) the modules *Advanced lab courses and projects 1 and 2*
- (d) the module *Specialisation phase*
- (e) the module *Project planning and preparation*
- (f) the module *Master's thesis*
- (g) the module *Master's colloquium*

(3) ¹The **elective subjects** are divided into the **elective physics subjects** and the **elective non-physics subjects**. ²Students shall successfully complete modules from the elective subjects worth at least 20 ECTS credits.

(4) ¹In the **elective physics subjects**, students acquire specialised and interdisciplinary knowledge in physical subjects of their choice; they shall successfully complete modules worth a minimum of 10 ECTS credits, among them one physics seminar (*Physikalisches Seminar*). ²The modules that are part of the elective physics subjects can be found in the module catalogue. ³The scope and ECTS credits of individual modules may deviate from the data given in **Appendix 4**, table 2.

(5) ¹In the **elective non-physics subjects**, students may acquire specialised knowledge in a physics-related subject of which they already have basic knowledge or basic knowledge in another physics-related subject. ²Section 31 (4)(4) and (4)(5) shall apply accordingly.

(6) ¹The minimum of 110 ECTS credits required according to Paragraphs 2 and 3 shall be complemented to the 120 ECTS credits necessary for completion of the Master's degree through additional, freely chosen modules from the compulsory and elective subjects (**free area**).

(7) See **Appendix 4** and **6** for the structure of the degree programme.

Part III: Integrated Bachelor's and Master's degree programme

Section 38 Purpose of the Integrated Bachelor's and Master's Degree Programme, Qualification

(1) ¹Together with the University of Regensburg, the University of Erlangen-Nürnberg offers special courses/lectures for an integrated, fast-track process (integrated degree programme) as part of the Bachelor's and Master's degree programme Physics; the purpose of this process is to lead especially talented, capable and dedicated students to a doctorate within approximately six years. ²This process usually begins after the second subject semester and includes an integrated doctoral programme. ³The participants shall be entitled to attend courses and lectures of the Master's degree programme from the fourth subject semester onwards. ⁴Corresponding achievements shall be counted towards the required achievements for the Master's degree programme after beginning this degree programme.

(2) ¹Participation in the integrated degree programme shall require special qualification that shall be confirmed by a Joint Admissions Committee. ²Students shall fulfil the following requirements:

1. Students shall not have progressed further than the fourth subject semester when they enter the programme.
2. The applicant shall submit proof of outstanding achievements in the Bachelor's degree programme Physics at the University of Erlangen-Nürnberg or at another university; outstanding achievements shall particularly be given if the average

grade is 'sehr gut' (1.5 or better) or if the applicant is among the top 10 percent of their year.

3. Students at the University of Erlangen-Nürnberg shall have completed the modules in **Appendix 5**, Table 3 within the first two subject semesters; students from other universities shall submit proof of equivalent achievements.

³If the applicant is admitted to the integrated degree programme, the appropriate ECTS credits shall be accredited to the Bachelor's examination in their entirety.

(3) ¹Applications for admission to the integrated degree programme shall be submitted by 15 August for the following winter semester and by 15 February for the coming summer semester (deadlines). ²The following documents shall be submitted with the application: a CV, full details of studies so far, and documents proving the applicant's outstanding achievements so far.

(4) ¹The Joint Admissions Committee shall carry out a preselection of applicants based on the submitted application documents. ²The selected applicants shall complete two interviews with two members of the Joint Admissions Committee. ³The final decision on admission to the integrated degree programme shall be taken by the Joint Admissions Committee based on the interviews and the submitted documents.

(5) ¹The Joint Admissions Committee for qualification for the fast-track degree programme shall include three professors each from the Department of Physics at the University of Erlangen-Nürnberg and the Faculty of Sciences II at the University of Regensburg. ²The members shall be appointed by the Faculty Council of the respective responsible faculty for a term of office of three years. ³Re-appointment shall be permitted. ⁴The Joint Admissions Committee shall elect a chairperson and a representative from the members of the committee.

(6) ¹An applicant's qualification for the integrated degree programme shall be determined in a unanimous verdict of 'geeignet' (qualified) or 'nicht geeignet' (not qualified) after the assessment of the submitted documents and the two interviews. ²If the verdict is 'nicht geeignet' (not qualified), a second application for admission to the fast-track procedure shall be excluded.

Section 39 Examination Matter in the Bachelor's Degree Programme

¹In the integrated degree programme, the modules *Experimentalphysik 3* and *Integrierter Kurs 1* and *2* shall be completed in the Bachelor's programme instead of the modules *Experimentalphysik 3+4*, *Experimentalphysik 5* and *Theoretische Physik 3* and *4*. ²The module *Physikalisches Experimentieren 2* shall be replaced with the module *Forschungsnaher Projektarbeit*. ³Of the elective physics subjects, the module *Physikalisches Seminar* shall be replaced with the module *Studententage*. ⁴The Bachelor's colloquium shall be omitted. ⁵See **Appendix 5**, Table 3 for the structure of the degree programme. ⁶Achievements may be completed either at the University of Erlangen-Nürnberg or at the University of Regensburg. ⁷The grade average from the integrated courses and the other achievements of every semester shall be 'sehr gut' (very good; at least 1.5). ⁸The Joint Admissions Committee may grant exemptions from this provision in exceptional cases. ⁹A credit certificate may only be used once.

Section 40 Examination Matter in the Master's Degree Programme

¹In the integrated degree programme, two *Forschungsorientierte Projektarbeit (Research-oriented project)* modules must be completed in the Master's programme; of altogether three such modules, at least one shall be from the field of experimental

physics and at least one shall be from the field of theoretical physics. ²Instead of the modules *Experimentalphysik-Vertiefung 1 (Advanced experimental physics 1)* and *Theorie-Vertiefung 1 (Advanced theoretical physics 1)*, the module *Integrierter Kurs 3 (Integrated course 3)* must be completed. ³See **Appendix 5**, Table 3 for the structure of the degree programme. ⁴Achievements may be completed either at the University of Erlangen-Nürnberg or at the University of Regensburg.

Section 41 Transfer to the Regular Bachelor's or Master's Degree Programme

¹If the achievements according to Sections 39 and 40 were completed successfully but the required grade average was not achieved, or if the student decides to discontinue the integrated degree programme for other reasons, they shall be entitled to transfer back to the regular Bachelor's degree programme Physics or the regular Master's degree programme if the Bachelor's examination was completed successfully. ²The following equivalences shall apply to the Bachelor's degree programme:

1. If the change occurs after the third subject semester, the module *Theoretische Physik 2: Elektrodynamik* shall be covered by the module *Theoretische Physik 2: Feldtheorie* and the module *Experimentalphysik 3* shall cover part 1 of the module *Experimentalphysik 3+4*.
2. If the change occurs after the fourth subject semester, part 2 of the module *Experimentalphysik 3+4* and the module *Theoretische Physik 3* shall be covered by the module *Integrierter Kurs 1* and the module *Physikalisches Seminar* shall be covered by the module *Studientage 1*.
3. If the change occurs after the fifth subject semester, the modules *Experimentalphysik 6* and *Kolloquium Theoretische Physik* shall be covered by the course *Integrierter Kurs 2*.
4. One *Forschungsnaher Projektarbeit* module from the field of experimental physics shall cover the *Physikalisches Experimentieren 2* module. Further *Forschungsnaher Projektarbeit* modules may be accredited as *Physikalisches Wahlfach* modules.

³The following equivalences shall apply to the Master's degree programme:

1. the module *Integrierter Kurs 3 (Integrated course 3)* is equivalent to one *Experimentalphysik-Vertiefung (Advanced experimental physics)* module and one *Theorie-Vertiefung (Advanced theoretical physics)* module
2. together one *Studientage (study workshop)* module and one *Physikalisches Wahlfach (Physics elective course) (PW)* module replace the module *Physikalisches Seminar (Physics seminar) (PS)*
3. otherwise the *Physikalisches Wahlfach (Physics elective course) (PW)* modules are accredited in full
4. one *Forschungsorientierte Projektarbeit (Research-oriented project)* module replaces one *Weiterführende Praktika und Projekte (Advanced lab courses and projects)* module

III: Transitional and Final Provisions

Section 42 Legal Validity

(1) ¹These examination regulations shall come into effect on 01 October 2007. ²They shall apply to students starting a degree programme from the winter semester 2007/08 onwards. ³At the same time as these examination regulations come into effect, the Diplom Examination Regulations for Students of Physics at Friedrich-Alexander-Universität Erlangen-Nürnberg (Diplomprüfungsordnung für Studenten der Physik an der Friedrich-Alexander-Universität Erlangen-Nürnberg) from 22 October

1981 (KMBI II 1982, p.157), last amended by statute from 20 August 2004, shall cease to be in force.

(2) ¹Students who were enrolled in the Diplom degree programme Physics when these examination regulations came into effect shall sit their examinations according to the Diplom examination regulations according to Paragraph 1 (3). ²Students shall complete the Diplom intermediary examination and the examinations of the basic study period by the end of the winter semester 2008/09; the Diplom examination may be sat until the end of the summer semester 2011. ³The Examinations Committee may grant exceptions in individual cases insofar as the application of this provision does not lead to an unintended case of hardship.

(3) ¹The amendments of 29 September 2010 shall come into effect on the day after their publication. ²They shall apply to students starting their studies from the winter semester 2010/2011 onwards. ³All students who started their studies in the winter semester 2009/2010 may choose whether they want to study under the new or the old examination regulations. ⁴Students must declare their choice to the Examinations Office by 10 November 2010. ⁵If no choice is declared, the study plan before the winter semester 2010/2011 shall apply. ⁶Modules and examinations according to the examination regulations before these amendments that have been replaced with these amendments but continue to be offered for current cohorts shall be offered for the last time in the summer semester 2012. ⁷The amendments under No. 2 shall come into effect after ministerial approval is given; however, the first cohort this amendment shall apply to shall be the one to complete their studies in the winter semester 2010/2011.

IV: Appendices

Appendix 1: Calculation of overall grades in the Bachelor's and Master's examinations according to Section 20

(1) In the calculation of final Bachelor's grades the module grades of the modules listed as part of the first two semesters in Table 1 (**Appendix 2**) are weighted with zero, the module grades of the modules *Bachelorarbeit* and *Bachelorkolloquium* are given twice the weighting of their ECTS credits, and all other module grades are given the single weighting of their ECTS credits.

(2) In the calculation of the overall grade of the Master's examination, the module grades of the module *Master's thesis* and *Master's colloquium* modules shall have the double weighting of their ECTS credits; all other module grades shall receive single weighting according to their ECTS credits.

(3) ¹Section 20 (2)(3) notwithstanding, a module with several partial examinations can be declared passed if the overall grade calculated from the grades of the partial examinations is at least 'ausreichend' (sufficient; 4.0). ²**Appendix 2** and the module catalogue shall govern this in more detail.

Appendix 2: Structure of the Bachelor's Degree Programme Physics

¹The Bachelor's degree programme in Physics generally comprises the modules listed in Table 1. ²Students shall successfully complete a selection of these according to Section 31. ³The elective and core skill modules may deviate in ECTS credits, SWS, allocation to semesters or allocation to physics or non-physics elective areas from table 1 below; the Examinations Committee may also admit ungraded modules for the elective subjects.

Table 1: Structure of the Bachelor's Degree Programme Physics

Module name	Abbreviation	ECTS credits	SWS ⁽¹⁾	Area ⁽²⁾	Examination ⁽³⁾	Weighting ⁽⁴⁾	Comments
1st semester							
Experimentalphysik 1+2, Teil 1: Mechanik ^(a)	EP-12		4L+2T	C			Part 2 in the 2nd semester
Rechenmethoden der Physik, Teil 1 ^(a)	RMP		1L+1T	C	U		Optional; part 2 in the 2nd semester
Grundpraktikum 1, Teil 1 ^(a)	GP-1		2P+1T	C	U		Part 2 in the 2nd semester
Mathematik 1 für Physikstudierende: Analysis und Lineare Algebra	MP-1	15	8L+4T	C	2W90	0	One of the two written examinations must be passed.
Nichtphysikalisches Wahlfach 1, Teil 1 ^(a)	NW-1		3L+1T ^(b)	E			Part 2 in the 2nd semester
2nd semester							
Experimentalphysik 1+2, Teil 2: Wärmelehre und Elektrodynamik	EP-12	15	4L+2T	C	W120	0	Part 1 in the 1st semester
Rechenmethoden der Physik, Teil 2	RMP	5	1L+1T	C	U		Optional; part 1 in the 1st semester
Grundpraktikum 1, Teil 2	GP-1	5	2P+1L	C	U		Part 1 in the 1st semester
Theoretische Physik 1: Mechanik	TP-1	10	4L+3T	C	W120	0	
Mathematik 2 für Physikstudierende	MP-2	7.5	4L+2T	C	W90	0	At least one of the modules MP-2 and MP-3 must be completed successfully.
Nichtphysikalisches Wahlfach 1, Teil 2	NW-1	10	6P ^(b)	E	S	0	Part 1 in the 1st semester
3rd semester							
Experimentalphysik 3+4, Teil 1: Optik und Quanteneffekte ^(a)	EP-34		4L+2T	C		1	Part 2 in the 4th semester
Grundpraktikum 2	GP-2	5	5P	C	U		
Theoretische Physik 2: Elektrodynamik	TP-2	10	4L+3T	C	W120	1	At least two of the modules TP-2 to TP-4 must be completed successfully.
Mathematik 3 für Physikstudierende	MP-3	10	5L+2T	C	W90	1	At least one of the modules MP-2 and MP-3 must be completed successfully.
Schlüsselqualifikationen	SQ	5	2L+1T	CS	U		At least 2.5 ECTS credits must be obtained in the core skills area.

4th semester							
Experimentalphysik 3+4: Teil 2: Atom- und Molekülphysik	EP-34	15	3L+2T	C	O30	1	Part 1 in the 3rd semester
Physikalisches Experimentieren 1: Elektronikpraktikum	PE-1	10	1L+5P	C	C	1	Portfolio examination: presentation of the evaluation of an experiment (50%) and final examination (50%)
Theoretische Physik 3: Quantenmechanik	TP-3	10	4L+3T	C	W120	1	At least two of the modules TP-2 to TP-4 must be completed successfully.
5th semester							
Experimentalphysik 5: Kern- und Teilchenphysik	EP-5	7.5	3L+2T	C	W90	1	At least one of the modules EP-5 and EP-6 must be completed successfully.
Experimentalphysik 6: Festkörperphysik	EP-6	7.5	3L+2T	C	W90	1	
Physikalisches Experimentieren 2	PE-2	7.5	1L+5P	C	C	1	Conduction of 7 experiments. Preparation/conduction and evaluation/report are assessed. The overall grade is based on the arithmetic average of the 14 individual grades.
Theoretische Physik 4: Statistische Physik	TP-4	10	4L+3T	C	W120	1	At least two of the modules TP-2 to TP-4 must be completed successfully.
Physikalisches Wahlfach	PW	5	2L+1T	E	S	1	
Nichtphysikalisches Wahlfach	NW	5	2L+1T	E	S	1	
Kolloquium Theoretische Physik ^(c)	TP-K	7.5	-	C	O45	1	
6th semester							
Physikalisches Wahlfach	PW	5	2L+1T	E	S	1	
Physikalisches Wahlfach	PW	5	2L+1T	E	S	1	
Physikalisches Seminar	PS	5	2S	E	P45	1	Presentation time includes discussion
Bachelor's thesis	BA-1	10	-	C	T	2	
Bachelor's colloquium	BA-2	5	-	C	P30	2	Presentation of the results of the Bachelor's thesis with subsequent discussion; the time stated is for the presentation not including the discussion.

- (1) SWS = semester hours per week, L = lecture, T = tutorial, P = laboratory/project, S = seminar
- (2) C = compulsory subjects, E = elective subjects, CS = core skills
- (3) Type and length of examination: W = written examination; O = oral examination; P = presentation; PE = portfolio examination; T = final thesis; U = ungraded course achievement; S = according to the subject offering the module (information available in the course and module catalogues). Numbers after abbreviations indicate the length of the examination in minutes; numbers before abbreviations indicate the number of examinations. The composition of portfolio examinations is described in the 'Note' column.
- (4) Weighting of the modules in the calculation of the Bachelor's final grade according to **Appendix 1**, Paragraph 1. Weighting 0 means that the module in question does not count towards the Bachelor's final grade.
 - (a) Modules without ECTS credits and examination types listed are completed in the following semester.
 - (b) For the module NW-1, the semester hours of the module *Physikalische Chemie* are listed.
 - (c) *Kolloquium Theoretische Physik* is usually held outside the lecture period.

Appendix 3: Qualification Assessment Process according to Section 33

(1) ¹The qualification assessment process shall be held as needed but at least once per semester. ²In the interest of facilitating a speedy continuation of studies, those who are about to complete their Bachelor's degree programme shall also be entitled to participate in this qualification assessment process.

(2) ¹Applications for admission to the qualification assessment process shall be submitted to the University (Student Records Office) by
15 July for the winter semester and
15 January for the summer semester

²The application shall contain:

1. University degree certificate (Section 33 [1]) or, in the case of Paragraph 1 (2) a transcript of records
2. In the case of Paragraph 1 (2), a confirmation that the applicant has been admitted to the examinations concluding the Bachelor's degree programme within the current examination period; for Bachelor's students according to these examination regulations, the registration for the Bachelor's thesis shall suffice
3. the application form;
4. CV in German or English and proof of English language proficiency on the CEFR (Common European Framework of Reference for Languages) level "B2 – Vantage or upper intermediate"; six years of English lessons at a German Gymnasium shall also suffice as proof; applicants whose native language is English need not submit any such proof ³An extended deadline for later submission of the documents described in Paragraph 2 (2) may be set.

(3) Applications not submitted in due form or time shall lead to exclusion from the qualification assessment process.

(4) ¹The qualification assessment process shall consist of a preselection and a selection interview with the admitted applicants. ²The Admissions Committee shall be entitled to task individual members with the preselection.

(5) ¹Particularly qualified applicants shall be admitted to the Master's degree programme based solely on the preselection. ²In particular, applicants shall be considered as particularly qualified if they have a degree according to Section 33 (1) with a grade of 2.5 ('gut/good) or better that is equivalent to the degree according to Section 33 (1)(1).

(6) ¹Applicants who cannot be admitted to the Master's degree programme in the course of the preselection and whose previous average grade is between 2.51 and 3.00 shall be invited to a selection interview; the remaining applicants shall not be admitted to the selection interview and shall receive a rejection notification including reasons. ²The selection interview shall demonstrate that the applicant possesses the required technical and methodological expertise and can be expected to carry out independent scientific work in a more research-oriented degree programme. ³The following criteria, weighted equally, shall be assessed in the selection interview:

- Sound knowledge of physical conservation laws, equations of motion and how to solve them, electromagnetic fields and their phenomena, and the mathematical foundations of physics
- Good knowledge of the physical properties of elementary particles, atomic nuclei, and atoms, as well as many-body systems and condensed matter including the fundamental experimental methods required to characterise them
- Knowledge of the foundations of and methods used in theoretical physics, in particular mechanics, classical field theory, quantum mechanics and statistical physics

⁴The selection interview shall have a duration of approximately 30 minutes. ⁵With the applicant's consent, the selection interview may also be carried out via video call.

⁶Applicants shall be notified of the date of the interview at least one week in advance.

⁷The selection interview shall be carried out by at least two professors from the Physics degree programme (Admission Panel) appointed by the Admissions Committee. ⁸The selection interview shall be rated as 'geeignet' (qualified) or 'nicht geeignet' (not qualified). ⁹If the applicant passes the selection interview, the Admissions Committee shall decide at the Admission Panel's recommendation whether admission shall be granted with conditions according to Section 33 (3)(3).

¹⁰Minutes of the selection interview shall be produced.

(7) Applicants not admitted to the Master's degree programme after the qualification assessment process shall receive a rejection notification including reasons and information on the legal remedies available; taking part in the qualification assessment process more than once shall be permitted.

(8) Applicants shall bear their own costs incurred as a result of taking part in the selection interview themselves.

Appendix 4: Structure of the Master's Degree Programme Physics

¹The Master's degree programme in Physics generally comprises the modules listed in Table 2. ²Students shall successfully complete a selection of these according to Section 37. ³Appendix 2 Sentence 3 shall apply accordingly. ⁴The degree programme is structured in such a way that it can be started in the summer semester or in the winter semester.

Table 2: Structure of the Master's Degree Programme Physics

Module name	Abbreviation	ECTS credits	SWS ⁽¹⁾	Area ⁽²⁾	Examination ⁽³⁾	Weighting ⁽⁴⁾	Comments
1st semester^(a)							
Advanced experimental physics 1	EV-1	10	4L+3T	C	W120	1	At least one of the modules EV-1 and EV-2 must be completed successfully.
Advanced lab courses and projects	WP-1	5	3P ^(a)	C	S	1	
Advanced theoretical physics 1	TV-1	10	4L+3T	C	W120	1	At least one of the modules TV-1 and TV-2 must be completed successfully.
Physics elective course	PW	5	2L+1T	E	S	1	At least 15 ECTS credits must be achieved in the modules PW and NW.
Physics elective course	PW	5	2L+1T	E	S	1	
Elective course (other than physics)	NW	5	2L+1T	E	S	1	At least 15 ECTS credits must be achieved in the modules PW and NW.
2nd semester							
Advanced experimental physics 2	EV-2	10	4L+3T	C	W120	1	At least one of the modules EV-1 and EV-2 must be completed successfully.
Advanced lab courses and projects 2	WP-2	5	3P ^(a)	C	S	1	
Advanced theoretical physics 2	TV-2	10	4L+3T	C	W120	1	At least one of the modules TV-1 and TV-2 must be completed successfully.
Physics elective course	PW	5	2L+1T	E	S	1	At least 15 ECTS credits must be achieved in the modules PW and NW.
Physics seminar	PS	5	2S	E	P45	1	Presentation time includes discussion
Elective course (other than physics)	NW	10	2L+1T	E	S	1	At least 15 ECTS credits must be achieved in the modules PW and NW.
3rd and 4th semester (research phase)							
Specialisation phase	FO-1	15	5P	C	U	0	Specialised study and literature research in intended subject of Master's thesis
Project planning and preparation	FO-2	15	5P	C	U	0	Work on assigned preparatory tasks
Master's thesis	FO-3	25		C	T	2	Work on scientific objective and thesis

Master's colloquium	FO-4	5		C	P45	2	Presentation of the results from the research phase with subsequent discussion; the time stated is for the presentation not including the discussion.
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- (1) SWS = semester hours per week, L = lecture, T = tutorial, P = laboratory/project, S = seminar
(2) C = compulsory subjects, E = elective physics or non-physics subject
(3) Type and length of examination: W = written examination; P = presentation; T = final thesis; U = ungraded course achievement; S = according to the subject offering the module (information available in the course and module catalogues). The numbers indicate the length of the examination in minutes.
(4) Weighting of the modules in the calculation of the Master's final grade according to Appendix 1, Paragraph 2. Weighting 0 means that the module in question does not count towards the Master's final grade.
The semester hours per week for the modules PW, NW and WP may vary. The value given is based on a typical average.

Appendix 5: Structure of the Integrated Degree Programme

¹The integrated degree programme generally comprises the modules listed in Table 3, which belong to the Bachelor's degree programme or to the Master's degree programme, respectively. ²Students must successfully complete the modules in the first two subject semesters in order to gain admission to the integrated degree programme (Section 38 [2][2][3]) ³Appendix 2 Sentence 3 shall apply accordingly.

Table 3: Structure of the Integrated Degree Programme

Module name	Abbreviation	ECTS credits (Bachelor's) ⁽¹⁾	ECTS credits (Master's) ⁽²⁾	SWS ⁽³⁾	Area ⁽⁴⁾	Examination ⁽⁵⁾	Weighting ⁽⁶⁾	Comments
1st semester								
Experimentalphysik 1+2, Teil 1: Mechanik ^(a)	EP-12			4L+2T	C			Part 2 in the 2nd semester
Rechenmethoden der Physik, Teil 1 ^(a)	RMP			1L+1T	C			Optional; part 2 in the 2nd semester
Grundpraktikum 1, Teil 1 ^(a)	GP-1			2P+1T	C			Part 2 in the 2nd semester
Mathematik 1 für Physikstudierende: Analysis und Lineare Algebra	MP-1	15		8L+4T	C	2W90	0	One of the two written examinations must be passed.
Nichtphysikalisches Wahlfach 1, Teil 1 ^(a)	NW-1			3L+1T ^(b)	E			Part 2 in the 2nd semester
2nd semester								
Experimentalphysik 1+2, Teil 2: Wärmelehre und Elektrodynamik	EP-12	15		4L+2T	C	W120	0	Part 1 in the 1st semester
Rechenmethoden der Physik, Teil 2	RMP	5		1L+1T	C	U		Optional; part 1 in the 1st semester
Grundpraktikum 1, Teil 2	GP-1	5		2P+1L	C	U		Part 1 in the 1st semester
Theoretische Physik 1: Mechanik	TP-1	10		4L+3T	C	W120	0	
Mathematik 2 für Physikstudierende	MP-2	7.5		4L+2T	C	W90	0	
Nichtphysikalisches Wahlfach 1, Teil 2	NW-1	10		6P ^(b)	E	S	0	Part 1 in the 1st semester
3rd semester								
Experimentalphysik 3: Optik und Quanteneffekte	EP-3	7.5		4L+2T	C	O30	1	
Grundpraktikum 2 (Projektpraktikum)	GP-2	5		6P	C	U		

Theoretische Physik 2: Feldtheorie	TPF-2	10		4L+3T	C	W120	1	
Mathematik 3 für Physikstudierende	MP-3	10		5L+2T	C	W90	1	
Forschungsorientierte Projektarbeit	FP	6		6P	C	R	1	Not on the same subject at the Bachelor's thesis
4th semester								
Integrierter Kurs 1: Quantentheorie, Quantenoptik und Atomphysik	IK-1	16		6L+5T	C	O45	1	
Forschungsorientierte Projektarbeit Research-oriented project	FP		6	6P	C	R	1	Not on the same subject at the Bachelor's thesis
Physikalisches Experimentieren 1 (Elektronikpraktikum)	PE-1	10		1L+5P	C	C	1	Portfolio examination: presentation of the evaluation of an experiment (50%) and final examination (50%)
Nichtphysikalisches Wahlfach Elective course (other than physics)	NW		5	2L+1T	E	S	1	
Schlüsselqualifikationen	SQ	4		2L+1T	CS	U		
Studientage 1	ST-1	3		2S	C	P45	1	Includes a presentation about the module FP or the Bachelor's thesis
5th semester								
Integrierter Kurs 2: Statistische Mechanik und Physik kondensierter Materie	IK-2	16		6L+5T	C	O45	1	
Forschungsorientierte Projektarbeit Research-oriented project	FP		6	6P	C	R	1	Not on the same subject at the Bachelor's thesis
Physikalisches Wahlfach	PW	5		2L+1T	E	S	1	
Physikalisches Wahlfach	PW	5		2L+1T	E	S	1	
Physikalisches Wahlfach (Master) Physics elective course (Master's)	PW		5	2L+1T	E	S	1	
Physikalisches Wahlfach (Master) Physics elective course (Master's)	PW		5	2L+1T	E	S	1	
Nichtphysikalisches Wahlfach	NW	5		2L+1T	E	S	1	
6th semester								
Integrierter Kurs 3: Quantenfeldtheorie und Teilchenphysik Integrated course 3: Quantum field theory and particle physics	IK-3		16	6L+5T	C	O45	1	
Physikalisches Wahlfach (Master) Physics elective course (Master's)	PW		5	2L+1T	E	S	1	
Physikalisches Wahlfach (Master) Physics elective course (Master's)	PW		5	2L+1T	E	S	1	

Nichtphysikalisches Wahlfach (Master) Elective course (other than physics, Master's)	NW		4	2L+1T	E	S	1	
Studententage 2 Study workshop 2	ST-2		3	2S	C	P45	1	Not on the same subject at the Master's thesis
Bachelor's thesis	BA	10			C	T	2	
from 7th semester (research phase)								
Fachliche Spezialisierung Specialisation phase	FO-1		15	5P	C	U	0	Specialised study and literature research in intended subject of Master's thesis
Projektplanung Project planning and preparation	FO-2		15	5P	C	U	0	Work on assigned preparatory tasks
Masterarbeit Master's thesis	FO-3		25		C	T	2	Work on scientific objective and thesis
Masterkolloquium Master's colloquium	FO-4		5		C	P45	2	Presentation of the results from the research phase with subsequent discussion; the time stated is for the presentation not including the discussion.

- (1) ECTS credits in the Bachelor's degree programme
- (2) ECTS credits in the Master's degree programme
- (3) SWS = semester hours per week, L = lecture, T = tutorial, P = laboratory/project, S = seminar
- (4) C = compulsory subjects, E = elective physics or non-physics subject, CS = Core Skills
- (5) Type and length of examination: W = written examination; O = oral examination; P = presentation; PE = portfolio examination; R = report; T = final thesis; U = ungraded course achievement; S = according to the subject offering the module (information available in the course and module catalogues). The numbers indicate the length of the examination in minutes. The composition of portfolio examinations is described in the 'Note' column.
- (6) Weighting modules receive in the calculation of the grade of the Bachelor's or Master's degree according to Appendix 1 (1) and (2). Weighting 0 means that the module in question does not count towards the Bachelor's or Master's final grade.
 - (a) Modules without ECTS credits and examination types listed are completed in the following semester.
 - (b) For the module NW-1, the semester hours of the module Physikalische Chemie are listed.

Appendix 6: Specialisation 'Physics in Medicine'

(1) ¹The Physics Master's degree programme may be studied with the specialisation 'Physics in Medicine'. ²This shall require selection of modules according to Paragraphs 2 and 3.

(2) ¹The modules of the first two subject semesters from the elective physics and non-physics subjects and the compulsory subjects shall be chosen as follows:

- a) ²For the elective physics subjects, the relevant modules from Physics in Medicine shall be chosen instead of the modules PW and PS. ³Suitable modules shall be shown as such in the module catalogue.
- b) ⁴The elective non-physics subject shall include modules with relevant connections to physics in medicine. This applies especially to the areas *Grundlagen der Medizin*, *Informatik in der Medizin* and *Werkstoffe in der Medizin*; the Examinations Committee shall decide whether choices from other areas are permissible.
- c) ⁶Students shall achieve a total of 20 ECTS credits from the 'Physics in Medicine' elective subjects.
- d) ⁷For the compulsory subjects, the modules WP-1 and WP-2 shall be replaced with *Physikalisches Experimentieren in der Medizin 1 (PEM-1)* and *Physikalisches Experimentieren in der Medizin 2 (PEM-2)*.

(3) The subject of the Master's thesis shall belong to the subject area 'Physics in Medicine'.

(4) Students who successfully complete the Master's degree programme according to Paragraphs 1 to 3 shall be issued a transcript of records and a Master's certificate with the addition 'Specialisation Physics in Medicine' upon request.

(5) ¹For students pursuing the specialisation Physics in Medicine and who give up this intention or who do not have the specialisation added according to Paragraph 4, all course and examination achievements completed as part of the specialisation shall be accredited in full. ²The modules *Physikalisches Experimentieren in der Medizin 1* and *2 (PEM-1, PEM-2)* in particular shall be accredited instead of the modules WP-1 and WP-2.