Please note that this document is a non-binding convenience translation. Only the German version of the document entitled "Prüfungs- und Studienordnung der Universität Heidelberg für den Masterstudiengang Physik" of 14 April 2011 [published in the President's bulletin (Mitteilungsblatt des Rektors) of 04 May 2011, p. 2015], and last amended on 10 April 2014 [President's bulletin (Mitteilungsblatt des Rektors) of 30 April 2014, p. 275] has legal validity.

HEIDELBERG UNIVERSITY EXAMINATION RULES AND REGULATIONS FOR THE MASTER'S DEGREE PROGRAMME IN PHYSICS

Date: 14 April 2011

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I. General information

§ 1 Purpose of the academic programme and examination

(1) The consecutive, research-oriented Master's degree programme in Physics conveys in-depth specialist knowledge and an understanding of the scientific methods employed in physics as well as in associated fields.

(2) The purpose of the Master's examination is to assess whether students have an overview of the interconnections between the individual disciplines, are able to apply academic methods and knowledge, and have acquired the specialist knowledge required to enter into a profession or a doctorate programme.

(3) Admission to the academic programme is subject to separate admissions regulations.

§ 2 Master's degree

Heidelberg University, represented by the Faculty of Physics and Astronomy, awards the academic degree of "Master of Science" (abbreviated: "M.Sc.") to candidates who have passed the Master's examination.

§ 3 Standard period of study, programme structure

(1) The standard period of study is four semesters, including the Master's examination.

(2) Examination prerequisites are graded with credit points in accordance with the European Credit Transfer System. One credit point corresponds to a workload of approx. 30 hours. Credits are only awarded for successfully completed modules. Successful completion of graded modules requires the grade "sufficient" (4.0) or higher.

(3) The first year of the Master's degree programme (consolidation phase) is intended for consolidation and specialist training in numerous areas in physics as well as in associated fields. The second year is designed as a research phase during which Master students independently acquire the skills associated with scientific work and research, and the ability to develop new complex issues. The degree programme's specialisation phase (worth a total of 60 CPs) includes a core area, structured as a compulsory elective, in which students must select modules worth a total of 16 CPs (see Attachment 1), a specialisation area with a compulsory seminar (6 CPs) as well as a specialisation module with between 18 and 22 CPs, and the electives according to Attachment 3 (which include the remaining CPs and provide students with the opportunity to choose additional physics modules, or modules from associated subject areas or from the range of courses offered in "Interdisciplinary Skills"). As a sub-module, the specialisation module (worth between 12 and 16 CPs) includes specialised physics courses in accordance with Attachment 2. The courses are generally related to just one area of specialisation in physics. All specialised knowledge and skills gained in the specialisation module are examined and graded in an

interdisciplinary oral final examination. Interdisciplinary examination preparation is also included in the specialisation module and is awarded a total of 6 CPs.

The research phase (worth a total of 60 CPs) consists of the compulsory modules "Scientific Specialisation" and "Methods and Project Planning" (worth 15 CPs each) and the Master's thesis (30 CPs). In order to successfully complete the Master's degree programme, students must complete the necessary modules in the core area, the area of specialisation, the elective and the research phase (in total 120 CPs).

(4) Lectures and courses in the degree programme are taught mainly in English. Some courses may also be offered in German.

(5) If the candidate does not fully complete the Master's examination within a period of three semesters after expiry of the standard period of study, he/she looses the entitlement to take the examination unless the student is not responsible for exceeding the deadline.

§ 4 Examinations board

(1) The examinations board organises examinations and tasks defined in these examination rules and regulations. The committee includes a head of the Physics Faculty, two lecturers of experimental and theoretical physics, a representative of the research assistants, and a representative of the student body; the student representative is only granted an advisory vote.

(2) The faculty appoints the chairperson, his/her deputy, the other members of the examinations board and their respective deputies. The chairperson and the deputy must be university professors and/or lecturers. The examinations board student representative is appointed by the faculty council based on a proposal from the departmental student committee.

(3) The members are generally appointed for three years; the student member is appointed for one year. Each term begins on 01 October. Members may be re-elected.

(4) The examinations board ensures that the examination rules and regulations are upheld. The committee reports to the faculty regarding changes to examinations, study periods and grading on a regular basis. This report is published in a suitable form.

(5) The chairperson manages everyday examinations board business, prepares and chairs meetings and, has the deciding vote in the event of a tied vote. The examinations board may confer further responsibilities to the chairperson.

(6) Examinations board members have the right to attend examinations.

(7) Members of the examinations board and their deputies are subject to official

secrecy. Members who are not civil servants are sworn to secrecy by the chairperson.

§ 5 Examiners and observers

(1) Following consultation with the examinations board, the chairperson appoints the examiners as well as the observers for all examination components. Examiners must be lecturers in the Master's degree programme in Physics. Each semester, the list of examiners is published by the examinations board.

(2) In general, university examinations which are not completed during the course of study may only be conducted by professors, lecturers, associate professors, or research associates who have been granted examination rights by the faculty due to longstanding teaching experience.

(3) In general, the lecturer for the respective lecture or course is responsible for examination components completed during the course of study.

(4) Observers must have passed the Master's examination or at least an equivalent final examination.

(5) According to Section 2, all Master's thesis examiners and reviewers must be full-time employees at Heidelberg University's Faculty of Physics and Astronomy. Examiners, in accordance with Section 1, to whom Sentence 1 does not apply can be appointed as examiners and reviewers if the second examiner or reviewer is appointed according to Sentence 1.

(6) For examiners and observers, § 4, Section 7 (official secrecy) shall apply accordingly.

§ 6 Recognition of study periods, course credits and examination results

(1) Completed examination prerequisites and results obtained at a domestic or foreign university or comparable institution are recognised provided that there is no significant difference in terms of acquired skills as defined by the module handbook.

(2) When recognising periods of study, as well as completed examination prerequisites and results obtained outside the Federal Republic of Germany, equivalency agreements and agreements between partner universities approved by the Conference of German Ministers of Education (Kultusministerkonferenz, KMK) and German Rectors' Conference (Hochschulrektorenkonferenz, HRK) must be taken into account.

(3) For study periods, examination prerequisites completed and results obtained at state-recognised distance learning institutions and other institutes of education, in particular universities of cooperative education (state or state-recognised),

Section 1 applies accordingly.

(4) If examination prerequisites and results are recognised, grades - insofar as grading systems are similar - must be transferred and included in the calculation of the overall grade in accordance with these examination rules and regulations. If grading systems are not comparable, examination prerequisites and results are graded as a "pass". This recognition can be indicated in the diploma. If more than 50 % of the examination components to be recognised are ungraded examination components completed during the course of study or examination components completed during the course of study using grading systems that are not comparable, the examinations board has to make the final decision.

(5) Relevant professional experience may be recognised.

(6) Qualifications not gained in university degree programmes are recognised according to § 32 of the Act on Higher Education of the Land of Baden-Württemberg (LHG) provided that they adequately replace skills as defined in the module handbook.

(7) Decisions are made by the examinations board in accordance with Sections 1 to 6.

§ 7 Unexcused absences, withdrawal, deception and breaches of regulations

(1) An examination is considered "failed" (5.0) if candidates fail to appear to the examination without a valid reason for their absence, or if they withdraw after the examination has started. The same applies if the candidate fails to complete a written examination within the allocated time, unless the candidate is not at fault for exceeding the deadline.

(2) Reasons for withdrawal or absence must be stated credibly and immediately to the examinations board in writing. If the candidate, or a child for whom the candidate is generally solely responsible, is ill, a medical certificate must be provided; in case of doubt, a medical certificate from a doctor, designated by the university, may be requested. If the reasons stated are accepted, a new examination date will be scheduled. In this case, examination results that are already available will be taken into account.

(3) When deciding whether the candidate is responsible for exceeding a registration or examination deadline the examinations board must respect the provisions stated in the legislation on maternity leave and the legal regulations concerning parental leave.

(4) If the candidate tries to influence the examination results by means of deception or by using unauthorised aids, the examination component in question will be graded as "failed" (5.0). If candidates disrupt the proper course of the examination, they may be excluded from further participation in the examination

by the examiner or examination supervisor. In this case, the examination will be graded as "failed" (5.0). In severe cases, the examinations board may exclude the candidate from all further examinations.

(5) The candidate may request a review of the decision by the examinations board in accordance with Section 4, Sentences 1 and 2 within a period of fourteen days. The candidate must be informed of negative decisions immediately and in writing, stating the reasons and providing information on the legal appeals procedure.

§ 8 Types of examination components

(1) The examination components are:
1. oral examination components completed during the course of study
2. written examination components completed during the course of study (electronically where applicable)
3. one compulsory seminar
4. the final oral examination in the specialisation module
5. the Master's thesis

(2) If candidates provide a medical certificate which credibly proves that they are not able to take examination components completely or partially in their intended form, due to long-term or permanent health problems, the examinations board may allow them to take an equivalent examination. The same applies for examination prerequisites.

§ 9 Oral examination components

(1) In oral examination components, candidates are required show that they are able to identify interconnections within the subject of the examination and relate specific problems to these interconnections.

(2) In general, oral examination components are conducted by one examiner and one qualified observer.

(3) An oral examination may last between 15 and 60 minutes.

(4) Candidates must be notified of the oral examination component results following each oral examination.

(5) Students who wish to take the final oral examination at a later examination date may be permitted to listen in on the same examination, if room is available. The audience may not attend assessment or announcement of the examination result. Listeners can be prohibited from attending upon the candidate's request or for other valid reasons.

§ 10 Written examination components

(1) In written examination components, candidates are required to prove that they are able to recognise problems relating to their subject and find solutions for them, using subject-specific methods with limited time and resources.

(2) A written examination may last between 45 and 180 minutes.

(3) If a written examination component is set as a term paper, it must also be written under examination conditions. The candidate must therefore assure that he/she is the author of the work and has used no sources or aids other than those indicated.

§ 11 Assessment of examination components

(1) Grades for the individual examination components are determined by the respective examiners. The following grades must be applied for assessment of examinations:

1 = very good	=	an outstanding performance;
2 = good	=	a performance which lies substantially above the average requirements;
3 = satisfactory	=	a performance which corresponds to average requirements;
4 = sufficient	=	a performance which, despite deficiencies, still meets the requirements;
5 = failed	=	a performance which does not meet the requirements due to considerable deficiencies.

For a more detailed assessment of examination results, interim grades may be applied by increasing or decreasing the individual grades by 0.3; the grades 0.7, 4.3, 4.7 and 5.3 may not be applied.

(2) In general, the assessment period for examination components should not exceed two weeks following completion of the module.

(3) Students receive a passing grade in an examination component if it has been graded as "sufficient" (4.0) or higher. A module is successfully completed when all individual sub-module examinations have been passed. The module grade is calculated as the mean of the individual sub-module assessments.

(4) When calculating final module grades and the overall examination grade, only the first decimal after the point is taken into account. The other decimals are dropped without rounding.

(5) If grades are awarded in accordance with the European Credit Transfer System

ECTS, the international assessment standard specified in Attachment 4 is applied.

(6) Individual modules may not require a grade; in these cases students can merely "pass" or "fail" the module. In these cases, the result is not included in the calculation of the overall grade. The modules in question are identified accordingly in the module handbook.

§ 12 Retaking examination components

(1) If examination components are not passed or considered not passed, they may be retaken once.

(2) A second retake is only possible due to severe reasons and by request to the examinations board. A second retake is not possible for the module Master's thesis.

(3) Retaking an examination that received a "pass" grade is not permitted.

(4) If an examination component has been failed, it must be retaken at the next possible examination date; in the case of compulsory modules, the examination must be retaken within a period of one year. If candidates miss this deadline, they may not retake the examination component, unless they are not responsible for exceeding the deadline. Credit points obtained in failed compulsory elective and elective modules can be replaced by credit points obtained in other relevant modules. It is not possible to replace the module Master's thesis or the two research phase compulsory modules "Scientific Specialisation" and "Methods and Project Planning". If the oral Master's examination is failed or is considered not to have been passed, the chairperson of the examinations board will issue a written notice and provide information on whether and if so, when the examination may be retaken. The oral Master's examination should be retaken within a period of one to three months after the initial failed examination.

The examination is conducted by two authorised examiners. The topic may be changed upon the candidate's request.

II. Master's examination

§ 13 Scope, nature and organisation of the Master's examination

(1) The Master's examination consists of:

1. examination components completed during the course of study in the modules, in accordance with Attachments 1 to 3
2. the successfully completed compulsory seminar
3. the final oral examination in the specialisation module
4. the Master's thesis

(2) Examinations, as referred to in Section 1, No. 1, are taken orally or in writing as an integrated part of the lecture or course. The lecturer responsible for a lecture or course determines the nature and duration of the examination components in accordance with Section 1, No. 1 and announces this information at the latest at the beginning of the lecture or course.

(3) Module examinations may consist of several sub-module examinations.

§ 14 Admission requirements and procedure

(1) Admission to the individual examination components is only authorised for students who:

1. are enrolled in the Master's degree programme Physics at Heidelberg University,
2. have not lost their entitlement to take the final examinations in Physics, in other degree programmes with comparable content, or in the teaching degree programme Physics.

(2) In accordance with Attachment 2, admission to the final oral examination in the specialisation module requires the successful participation in lectures and courses in the area of specialisation, totaling between 12 and 16 CPs. The examination application must be made in writing and addressed to the chairperson of the examinations board.

(3) The following documents must be included in the application for admission to the final oral examination in the specialisation module:

1. evidence of fulfillment of the admission requirements in accordance with Section 1, No. 1 and 2 as well as Section 2;
2. a declaration stating that the candidate has not lost his/her entitlement to take the final examinations in the Master's degree programme in Physics, in other degree programmes with comparable content, or in the teaching degree programme Physics.
3. a list of all selected sub-modules that constitute the specialisation module and that are subject to an interdisciplinary examination procedure.

(4) In order to register for the compulsory modules "Scientific Specialisation" and "Methods and Project Planning", the student must have fulfilled examination prerequisites worth at least 48 CPs. This includes successful completion of two core area modules, a successfully completed compulsory seminar, a successfully completed oral final examination in the specialisation module as well successfully completed modules in the electives with an adequate number of credits. In order to be able to register for the Master's thesis, the candidate must have successfully completed the compulsory modules "Scientific Specialisation" and "Methods and Project Planning".

(5) The chairperson of the examinations board decides whether the candidate is

approved for the final oral examination in the specialisation module, the compulsory modules "Scientific Specialisation" and "Methods and Project Planning" as well as the Master's thesis.

(6) The application for presentation of the Master's degree must be made in writing and addressed to the chairperson of the examinations board. The application must include:

1. evidence of examination prerequisites worth a total of 60 credit points according to the catalogue of compulsory elective and elective modules from the core, specialisation and elective areas in the degree programme in Physics (Attachments 1 to 3) as well as of the successfully completed compulsory modules "Scientific Specialisation" and “Methods and Project Planning” and of the successfully completed Master’s thesis:
2. a declaration stating whether the candidate has previously failed a Master's examination or a final Diploma examination in either Physics or in degree programmes with comparable content, or has failed the Physics Teacher Education Examination in the teaching degree programme Physics, or is currently participating in an examination procedure in one of the aforementioned degree programmes;
3. a declaration stating that the candidate has not lost his/her entitlement to take the final examinations in the Master's degree programme in Physics.

(7) The chairperson of the examinations board makes the decision on the application. Rejections must be presented in writing, stating the reasons and providing information on the appeals procedure.

(8) If candidates are unable to provide such evidence, the examinations board may accept other proof.

(9) The application may only be denied if:

1. conditions are not fulfilled in accordance with Section 1, or
2. documents are not compete, or
3. the candidate has failed the final attempt at the Master's examination, or the final Diploma examination in either Physics or in degree programmes with comparable content, or has failed the Physics Teacher Education Examination for prospective higher secondary teachers (wiss. Prüfung für Lehramt Gymnasium), or
4. the candidate has lost his/her entitlement to take examinations in a degree programme according to No. 3 due to other reasons, or
5. the candidate is currently participating in an examination procedure in the Diploma degree programme in Physics or the teaching degree programme in Physics.

§ 15 Master’s thesis

(1) The Master’s thesis is an examination component that completes the academic programme. The purpose of the Master’s thesis is for candidates to show that

they are able to work independently on a problem from the subject field of the degree programme in Physics within a given period of time and in accordance with the principles of scientific work.

(2) The Master's thesis may be assigned and supervised by any authorised examiner in accordance with § 5, Section 2.

(3) Prior the the Master's thesis, the candidate must complete the two compulsory modules "Scientific Specialisation" and "Methods and Project Planning" under the guidance of the authorised examiner (supervisor), in accordance with (2), who is also the supervisor of the Master's thesis. The Dean can, upon application, assign the candidate a designated supervisor. Both preparatory courses are intended, on the one hand, to help the student become familiar with the topic of the proposed Master's thesis (module "Scientific Specialisation") and, on the other hand, to impart necessary technical and methodological skills such as project planning (module "Methods and Project Planning"). However, this does not constitute a legal entitlement to a certain topic.

(4) The compulsory modules "Scientific Specialisation" and "Methods and Project Planning" both generally last for three months. The module "Scientific Specialisation" is an ungraded module. The module "Methods and Project Planning" is graded by the supervisor. Once the module "Scientific Specialisation" has been successfully completed, candidates have the right to register for the module "Methods and Project Planning" and start working on their Master's thesis with their chosen supervisor, or with a different supervisor (candidates are not required to provide a reason for choosing a different supervisor).

(5) The candidate must start working on the Master's thesis no later than two weeks after successful completion of the compulsory modules "Scientific Specialisation" and "Methods and Project Planning", or submit an application for allocation of a Master's thesis topic to the chairperson of the examinations board.

(6) If the candidate misses this deadline, the final academic thesis is graded as "failed" (5.0), unless the candidate is not responsible for exceeding the deadline.

(7) The topic of the Master's thesis will be determined by the thesis supervisor in agreement with the candidate. Upon application, the Dean will ensure that the candidate receives a topic for the Master's thesis. The candidate must be allowed sufficient time to propose own topics. However, this does not constitute a legal entitlement to a certain topic. The chairperson of the examinations board assigns the thesis topic; the date of assignment must be recorded.

(8) 30 credit points are allocated for the Master's thesis. The deadline for submission of the thesis is 6 months after topic assignment. In exceptional cases and only upon joint application by the candidate and the supervisor, the examinations board may extend this deadline by one month. If the deadline is exceeded, the Master's thesis will be graded as "failed" (5.0), unless the

candidate is not responsible for exceeding the deadline.

(9) The topic, task and scope of the Master's thesis must be limited in such a way that the candidate is able to complete the thesis within the given period.

(10) The thesis should contain a German and an English summary.

(11) The Master's thesis may be written in German or English.

§ 16 Submission and assessment of the Master's thesis

(1) Three copies of the Master's thesis must be submitted to the examinations board in time; the submission date must be recorded.

(2) When submitting the Master's thesis, the candidate must assure in writing that he/she is the author of the work and has used no sources or aids other than those indicated.

(3) The Master's thesis is assessed by two examiners according to § 5 Section 5; one of the examiners must also be the thesis supervisor. The other examiner is a member of the Faculty of Physics and Astronomy and is appointed by the examinations board in accordance with § 5 Section 5. Examiners must be professors at the Faculty of Physics and Astronomy. The candidate is allowed to make a proposal that does, however, not constitute a legal entitlement. The evaluation period should not exceed a period of four weeks.

(4) The Master's thesis is passed if it is graded as "sufficient" (4.0) or higher by both examiners. The grade is calculated as the mean of both assessments; § 11, Section 5 applies accordingly. If the grades differ by more than one grade level, the examinations board determines the Master's thesis grade upon consultation with both examiners. In such cases, a third examiner may be consulted.

(5) If the Master's thesis is graded as "failed" (5.0), it may be retaken with a new topic. Retaking the thesis with the previous topic is not permitted.

(6) The Master's thesis may be presented to third parties if the candidate provides written consent.

§ 17 Passing the examination and overall grade

(1) The Master's examination is passed if the specialisation phase modules, as defined in §3, Section 3, which are worth a total of 60 CPs have been successfully completed, the final oral examination has been passed, the compulsory modules "Scientific Specialisation" and "Methods and Project Planning" have been passed, and the Master's thesis is graded as "sufficient" (4.0) or higher.

(2) § 11 applies for assessment of all examination components and the overall grade.

(3) The Master's examination overall grade is calculated by weighting the grades of both core modules, the specialisation module, the compulsory seminar, the module "Methods and Project Planning" and the Master's thesis according to their credit points.

§ 18 Master's diploma

(1) After the Master's examination has been passed, a diploma (in German and English) will be issued within four weeks that indicates all individual modules with their respective grades and credit points, as well as the overall grade. The diploma must be signed by the chairperson of the examinations board and is dated with the day of the last examination component.

(2) A Diploma Supplement is included, which contains additional information about the course content and periods of studies.

(3) In addition, a transcript of records will be issued at the end of each semester, listing all module examinations students have passed, including the corresponding credits and grades.

§ 19 Master's certificate

(1) A Master's certificate is issued with the diploma, or in the context of a degree ceremony, bearing the same date as the diploma. It certifies the conferment of the academic degree. The Master's certificate as well as the Master's diploma are issued in both English and German.

(2) The Master's certificate is signed by the Dean and the chairperson of the examinations board, and bears the faculty seal.

(3) If the candidate fails the Master's examination, a certificate will be issued on request, and on presentation of relevant proof, listing passed examination components and corresponding grades as well as missing examination components. It is signed by the chairperson of the examinations board and includes a note that the Master's examination was failed. The same applies for the Master's examination if failed on the final attempt.

III. Final provisions

§ 20 Invalidity of examinations

(1) If a candidate cheats in an examination and is only discovered after the diploma has been issued, the examinations board may correct the examination results

affected by the deception accordingly, and may declare the examination partially or completely failed.

(2) If the requirements for admission to the examination were not fulfilled without any intent to deceive on the candidate's part, and is only discovered after the diploma has been issued, the passed examination is considered a compensation for this shortcoming. If the candidate intentionally gained admission to the examination through deceit, the examinations board must make the final decision.

(3) Before the decision is made, candidates will be given the opportunity to provide an explanation.

(4) Fraudulent examination diplomas will be confiscated and a new diploma will be issued if necessary. The Master's certificate will be confiscated along with the fraudulent examination diploma if the examination was graded as "failed" due to deception. In accordance with Section 1 and Section 2, Sentence 2, a decision may not be made more than five years after the date on the examination diploma.

§ 21 Access to examination documents

The candidate may request access to written examination documents, examiner reviews and the examination minutes within a period of one year after completion of the examination procedure. The chairperson of the examinations board decides when and where access will be granted.

§ 22 Coming into force and transitional provisions

(1) These examination rules and regulations will come into force on the first day of the month following publication in the President's bulletin (Mitteilungsblatt des Rektors). At the same time, Heidelberg University examination and degree programme rules and regulations for the Master's degree programme in Physics of 25 July 2008 (President's bulletin of 8 August 2008, p.631) will expire.

(2) Students who are already enrolled in the Master's degree programme in Physics at Heidelberg University while these examination rules and regulations come into force may apply for application of the former regulations. This extension is only valid for a period of two years.

Attachment 1: Overview of the Master's degree programme

Modules	Code	CP
Specialisation phase		
Core area (compulsory elective) The core area consists of theoretical and experimental physics that are designated as follows: (1) Theoretical Core Module (2) Experimental Core Module The core modules are defined in detail in the module handbook. Two of these core modules must be successfully completed; the student may choose which and how many theoretical and to take. Permitted combinations are: MKTPx and MKEPy, MKTPx and MKTPy, MKEPx and MKEPy	 MKTPx MKEPy	 8 8
Total number of points in the core area		16
Specialisation in Physics (compulsory electives) Compulsory seminar in an area of specialisation Specialisation module (see Attachment 2)	 MVSem MVMod	 6 18…22
Total number of points in specialisation in Physics		24..28
Electives Elective modules in physics or an associated subject Modules from the range of courses in "Interdisciplinary Skills"	 Attachment 3	 16…20
Total number of points in the electives		16..20
Total number of points in the specialisation phase		60
Research phase		
Compulsory module “Scientific Specialisation” Compulsory module "Methods and Project Planning" Master’s thesis	MFS* MFP* MFA	15 15 30
Total number of points research phase		60
Credit points Master		120

*) These modules can also include further courses worth approx. 8 CPs (only possible in agreement with the supervisor).

Attachment 2: Specialisation module (compulsory electives)

In the specialisation module (MVMod), students select specialised courses from the range of courses offered in the specialisation area of the Faculty of Physics and Astronomy as sub-modules (worth between 12 and 16 CPs). It is also possible to include a core module (see Attachment 1) that was not previously included in the core area in accordance with §3, Section 3, as a sub-module in the specialisation module. In general, all sub-modules should be related to only one area of specialisation. All sub-modules must be passed individually. The module handbook defines the course certificate. The specialisation module is graded as a whole with the help of an interdisciplinary oral examination. Specialisation in the chosen area as well as interdisciplinary preparation for the final examination are allocated an additional 6 CPs; therefore the specialisation module, as assessed through the final examination, is worth between 18 and 22 CPs.

The courses in specialisation in Physics are not always offered in a fixed cycle. The respective range of special lectures and seminars is listed in the current Master's module handbook for Physics as well as in the applicable course catalogue. The model syllabi presented in the module handbook are intended for orientation when planning the specialisation module. Using these syllabi can help make the selection of courses more coherent. The following table lists specialisation areas in which the faculty regularly offers Master's courses as well as their respective codes.

Modules	Code
Astronomy and Astrophysics	MVAstrox
Atomic, Molecular and Optical Physics	MVAMOx
Biophysics	MVBiox
Condensed Matter Physics	MVCMPx
Environmental Physics	MVEnvx
Medical Physics	MVMPx
Particle Physics	MVHEx
Theoretical Physics	MVTheox

Attachment 3: Electives

For completion of the electives modules, students can choose courses from Physics, associated subjects of other faculties or from the range of courses in "Interdisciplinary Skills". The modules chosen for the electives must supplement the specialisation area until a total of 60 CPs has been achieved; depending on the choice of specialisation module, the student must therefore supplement with between 16 and 20 CPs. In Physics, the student can choose modules from the core area (see Attachment 1) and the specialisation areas (table in Attachment 2).

Electives can be chosen from associated subject areas of other faculties. The following areas are permissible:

Biology

Chemistry
Earth sciences
Computer science
Physics of imaging
Mathematics
Philosophy
Physiology
Economics

Selecting a block of classes from these areas enables students to acquire knowledge in a subject associated with physics, a prerequisite for successful scientific interdisciplinary work in areas associated with physics or an area of application in physics. The relevant departments offer coordinated modules for these combinations, normally a series of connected sub-modules extending over a period of two semesters.

Other electives may only be chosen in exceptional and justifiable cases and require the consent of the examinations board; the applicant must submit an informal application to this end.

In addition, students may choose courses from the range of subjects in "Interdisciplinary Skills" to complete their electives modules. Students in the Master's degree are advised to collect approx. 6 CPs in this area. The range of courses is indicated in each current Master module handbook. Furthermore, students may choose courses designated for the Bachelor's degree programme in Physics provided modules with a similar content were not previously completed during the Bachelor's degree.

The model syllabi in the module handbook for the Master's degree programme in Physics lists suggestions for organisation of the electives.

Attachment 4: Grading in accordance with ECTS

ECTS grades are awarded for successfully completed examination components and are assigned as follows:

A	the top 10 %
B	the following 25 %
C	the following 30 %
D	the following 25 %
E	the following 10 %

Data may be collected from one examination date, or one or several academic years. The basis of the data is disclosed with the ECTS grade. For degree grades, the ECTS grade must be included. For individual modules, the ECTS grade can be stated, when possible and necessary.

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