

**Examination Regulations (*Prüfungsordnung*)
of the Faculty of Physics and Astronomy
for the Master of Sciences (M.S.) Degree Program in Photonics
18th May, 2009**

According to § 3 section 1 together with § 34 section 3 sentence 1 of the Thuringian Higher Education Act (*Thüringer Hochschulgesetzes, ThürHG*) from 21st December 2006 (GVBl. page 601), last changed via article 15 of the act from 20th March 2009 (GVBl. page 238), the Friedrich-Schiller-Universität Jena issues the following rules of examination. These regulations were decided by the Council of the Faculty of Physics and Astronomy (*Fakultätsrat*) on 10th July 2008 and agreed to by the Senate of the Friedrich-Schiller-Universität Jena on 16th December 2008.

The Rector approved these regulations on 18th May 2009.

I General Terms	1
§ 1 Goals of the Examination.....	1
§ 2 Academic Degree	2
§ 3 Period of Study	2
§ 4 Outline of the Program of Study.....	2
§ 5 Study Plan and Module Catalogue.....	3
§ 6 Assessment of Study Hours, Workload and Examinations.....	3
§ 7 Examination Committee (<i>Prüfungsausschuss</i>).....	3
§ 8 Module Coordinators, Examiners and Observers.....	4
§ 9 Forms of Examination.....	4
§ 10 Grading Scale.....	5
§ 11 Retaking Examinations	6
§ 12 Absence, Withdrawal, Fraud, Breach of Regulations	7
§ 13 Cases of Hardship	7
II Master's Examination	8
§ 14 Manner and Scope of the Master's Examination.....	8
§ 15 Additional Modules	8
§ 16 Examination Dates and Times	8
§ 17 Admission to the Master's Examination	9
§ 18 Admission Procedure.....	9
§ 19 Module Examinations	10
§ 20 Internships.....	10
§ 21 Master's Thesis	11
§ 22 Passing Grades on the Master's Examination, Comprehensive Grade	12
§ 23 Master's Transcript, Diploma Supplement, Master's Certificate	12
III Final Provisions	13
§ 24 Invalidity of Examinations	13
§ 25 Viewing of Examination Files	13
§ 26 Opposition Proceedings.....	13
§ 27 Equal Opportunity Clause	13
§ 28 Coming Into Effect, Interim Regulations.....	14

I General Terms

§ 1

Goals of the Examination

Successful completion of the master's examination in photonics is required to earn the second career qualifying degree in the study of optics and optical technology. In order to pass, students

must show fundamental knowledge of optics and the physical principles behind optical phenomena, as well as specialized knowledge in their chosen areas of focus; and the ability to independently work with challenging methods in optical research and technology. They must additionally show their ability to work efficiently and independently in the foremost fronts of optical research, technology and business; to critically evaluate scientific results; and to think and act responsibly and comprehensively in an interdisciplinary area.

§ 2 Academic Degree

Following a successfully completed master's examination, the Friedrich-Schiller-Universität Jena grants the examinee the degree of Master of Science (M.Sc.).

§ 3 Period of Study

(1) The regular period of study is two years, in which a total of 120 credit points (CP, *Leistungspunkte, LP*) will be earned, with 60 CP per year. One credit point is awarded for 30 hours of academic work in the form of the student's presence in courses and work outside of course time, according to the European Credit Transfer and Accumulation System (ECTS). The total academic workload for study and examinations may not be more than 1800 hours, including the free periods.

(2) Courses and study plans are arranged so that all required courses as well as the master's thesis can be completed within the usual period of study.

(3) The following times will not be counted as part of the usual study period according to section 1, if a justified application for leave has been approved:

- Maternity leave and permitted parental leave,
- Military service (*Wehr- und Ersatzdienst*),
- Periods during which the ability of the student to study is impaired by a medically evidenced, lengthy, severe illness attested to by a doctor,
- An international stay required for the student's project or academic study,
- Periods of service as an elected member in legally prescribed bodies or statutory organs of the university.

Specific terms are set by the matriculation regulations (*Immatrikulationsordnung*) of the Friedrich-Schiller-Universität Jena. Applications for leave should be submitted to the Office of student affairs (*Büro für studentische Angelegenheiten*).

(4) The regular study period for part-time students is four years. Part-time study is intended for students who are employed and working between 20 and 25 hours per week or students with special family commitments. Admission as a part-time student requires the approval of the examination committee.

§ 4 Outline of the Program of Study

(1) The course of study is divided into modules. Individual modules are composed of multiple different types of courses and work requirements including lectures, seminars, practical exercises, independent study and examinations. Every module consists of a learning and examination unit and is documented along with the results (grade, examination) on each student's transcript. One module usually lasts for one semester, but may include material from multiple semesters.

(2) The first two semesters of study include the modules Adjustment, Fundamentals 1 and Fundamentals 2. In the second and third semesters the modules Specialization 1 and Specialization 2 are added. The lecture program is accompanied by practical modules (labs,

internships, research labs) from the first through the third semester. In the fourth semester, the study is closed with the master's thesis work.

(3) More information regarding the goals of the course of study, its division into modules and the credit points awarded for each module are given in the Study Regulations.

§ 5

Study Plan and Module Catalogue

(1) The Council of the Faculty of Astronomy and Physics (*Fakultätsrat*) decides upon a study plan and a module catalogue with module descriptions. The study plan and module catalogue are always to be made available electronically at the beginning of each year of study.

(2) The module descriptions include the module coordinator (*Modulverantwortlicher*), prerequisites for participation, applications, status of each module, types of courses and work required, workload, credits which may be earned, content and qualification goals of the module, type of examination and its weight, how often each module is offered and its length.

§ 6

Assessment of Study Hours, Workload and Examinations

(1) Credit points earned in the same course of study at a university or an equivalent postsecondary institution within the scope of the German Constitution (*Grundgesetz*) will be recognized without verifying their equivalency.

(2) Study time, academic work and examination performance in other courses of study will be recognized insofar as the equivalency can be shown. Equivalency is granted if study time, academic work and examinations are substantially similar to those of the corresponding study at the postsecondary institution which is accepting the student. This should not be a point-by-point comparison of programs, but rather a comprehensive evaluation of their total content and quality.

(3) The rules set by the Conference of the Cultural Ministry (*Kultusministerkonferenz*) and the Conference of the Rectors of Postsecondary Schools (*Hochschulrektorenkonferenz*) regarding academic equivalency, as well as agreements set within partnership programs between postsecondary schools, are to be considered when determining whether or how to recognize study periods, academic work and examination results from outside of the scope of the German Constitution. Recognition of academic time, work and examination results from outside of the scope of the German Constitution is guaranteed for students engaging in a foreign academic stay who have completed an ECTS Learning Agreement before the beginning of their studies abroad.

(4) Between the receipt of their first career-qualifying degree and the beginning of the study period, students may apply to have their previous research activities recognized by the examination committee.

(5) In cases where study and examination results are recognized, the accompanying grades are to be taken and calculated into the student's comprehensive final grade – insofar as the external grading system is comparable with the local grading system. If the two grading systems are not comparable, recognized academic work will be marked simply as "passing". It is possible to note the recognition of external work in the student's transcript.

(6) Students who meet the requirements of sections 1 through 3 have a legal right to recognition of their academic performance. To claim this right, the candidate must be able to submit all necessary documents to the examination committee.

§ 7

Examination Committee (*Prüfungsausschuss*)

(1) An examination committee (*Prüfungsausschuss*) will be chosen from the members of the Faculty of Physics and Astronomy in order to carry out the duties listed in this rules of

examination. The committee comprises three faculty members, one academic worker, and one student in this course of study. The committee chair, his or her deputy, and the other members of the committee as well as their deputies will be named by the faculty council (*Fakultätsrat*). The period of service for the members of the examination committee is usually three years except for the student member, who usually serves for one year.

(2) The examination committee has a quorum when the majority of its members, including the chair or his deputy, is present. The number of members present does not matter for the quorum if the committee is meeting to consider a topic for a second time due to lack of a quorum during its first consideration and if this has been made clear in the invitation to the current meeting. The examination committee confirms a quorum with a majority of votes. In the case of a tied vote, the deciding vote goes to the committee chair. The student members do not have a vote in deciding the evaluation or calculation of study and examination results or the selection of examiners and observers.

(3) The examination committee ensures that the requirements of the Examination Regulations (this document) are met, and seek to ensure the orderly conduct of the examination. This includes the appointment of module coordinator, other examiners and observers as according to § 8 section 1. In addition, the committee is responsible for deciding how to handle objections to decisions made during the course of examination.

(4) The committee oversees the quality management of the examination, reports to the council of the faculty every year regarding the development of examinations and study periods, and gives suggestions for reforming the course of study and examination. It evaluates the study plan yearly and incorporates new discoveries from scientific research and practical applications into the study plan.

(5) The members of the examination committee have the right to be present during examinations and to read examination files.

(6) The examination committee decides its own order of business and may delegate duties to the committee chair.

(7) The meetings of the examination committee are not public. The members are obliged to maintain silence on matters that are revealed to them during closed sessions. Insofar as they are not engaged in public service, the committee chair shall instruct them to maintain silence regarding the subjects discussed.

§ 8

Module Coordinators, Examiners and Observers

(1) Only members of the Friedrich-Schiller-Universität Jena or – in exceptional cases – of another postsecondary institution who are permitted by § 48 sections 2 and 3 of the ThürHG to give examinations may be selected as module coordinators or examiners. Only persons holding the degree granted by successful completion of the examination in question or an equivalent degree may be selected as observers.

(2) The module coordinator is usually also the examiner for that module. If the module coordinator is not the instructor, the instructor should be the examiner.

(3) The examiner and the observer are obliged to maintain silence regarding the examination.

§ 9

Forms of Examination

(1) The module examinations will be given in the form of oral examinations, oral presentations, written examinations under observation, essay papers or project reports, or other means of examination which may be evaluated according to the same criteria. In appropriate cases, examinations may also be conducted with the help of electronic media and with electronic documentation.

- (2) Examinations may, when appropriate, also be completed by a group of students (group work). In such cases, the contribution of each student must be clearly defined and separately evaluated. The group should generally not include more than three students.
- (3) In oral examinations, the candidate should demonstrate his or her knowledge beyond the basics of the subject examined, recognition of connections and ability to ask particular questions within the interconnected topics. The length of an oral examination should be 30 to 60 minutes. If multiple examinations are required for one module, the length of each examination should be correspondingly reduced.
- (4) In oral presentations on an assigned topic in the form of a talk or defined graphic presentation (poster, slides etc.) in a seminar, the candidate should demonstrate that he or she can present the relevant points of the topic with the aid of a media presentation. The scope of the presentation may be set by the module coordinator. The module coordinator or module instructor will evaluate the presentation and inform the candidate of the results of the evaluation immediately following the presentation.
- (5) In a written examination the candidate should demonstrate that he or she can employ the methods of her area of study to find relevant solutions to problems within the subject being examined within a limited time and with limited aid. Multiple problems may be given with all problems to be solved, or from which the student must choose a subset to solve. The time allowed for a written module examination is generally 60 to 120 minutes. If there are multiple examinations given within a module, the length of each examination is to be correspondingly reduced.
- (6) In an essay paper, the candidate should demonstrate that he or she can scientifically analyse and sufficiently well present a problem within the scope of the study topic, drawing on relevant literature and other sources for the analysis and presentation.
- (7) In a project report, which is usually assigned as group work (see section 2), the candidates should demonstrate that they are able to solve an assigned problem based on appropriate methods and to explain the methods, the resulting data and the results of data analysis in the context of relevant literature and according to scientific standards.
- (8) The required scope and format of a written assignment not completed under direct supervision may be set by the module coordinator. An individually completed essay paper should, depending on the scope of the module, contain 400 to 800 words per credit earned.
- (9) Upon submission of a written assignment not completed under direct supervision, the candidate must demonstrate that the work – in the case of group work, his or her individual part – was independently written and that only the cited sources and aids were used. Phrases or ideas taken from a source are to be indicated in the text by citing the source.
- (10) Oral examinations for one (single examination) or more students (group examination) are given before two examiners (collegial examination) or before one examiner in the presence of an observer who is knowledgeable about the subject material. At least one examiner must be an instructor at a postsecondary institution. The relevant conditions and results of the oral examination are to be recorded in a protocol. Each candidate is to be told the result of the oral examination immediately following the examination. Participants in a group examination shall be given their results individually.
- (11) The evaluation of a written examination, essay paper or a project report shall be documented in clear foot- and margin notes and, if necessary, in a summary evaluation document. A written examination which represents the last possible repetition of the examination for a candidate, and which must be passed in order for the candidate to continue the course of study, shall be evaluated by two examiners. The rules for the evaluation of the master's thesis are given in § 21.

§ 10 Grading Scale

- (1) Grades for examinations are decided by the examiners. The following grading scale is used:
1 = superior = excellent performance,

2 = good	= significantly better than average,
3 = satisfactory	= meets average requirements,
4 = sufficient	= meets basic requirements despite errors,
5 = not passed	= fails to meet the basic requirements.

(2) Intermediate grades may be issued by adding or subtracting 0.3 from each whole number in order to better differentiate examination results. However, the grades 0.7, 4.3, 4.7 and 5.3 may not be granted.

(3) Examinations may also be graded as passed (*bestanden, b*) or failed (*nicht bestanden, nb*). These grades are not calculated into the module grade or comprehensive grade.

(4) If a module examination consists of multiple section examinations, the grade is calculated from the average of the grades of the individual exams. If the section examinations involve different subject areas, then each section examination must be passed. It is possible to weight the section examinations. The weight should be set in the module description.

(5) The calculated module grade and comprehensive grade will be rounded to the first decimal position.

(6) Module and comprehensive grades are as follows:

Average between 1.0 to 1.5	superior,
Average between 1.6 and 2.5	good,
Average between 2.6 and 3.5	satisfactory,
Average between 3.6 and 4.0	sufficient.

(7) Following the ECTS grading scale (issued by the Conference of the Cultural Ministry (*Kultusministerkonferenz*) on 22.10.2004), successful students additionally receive the following relative grades:

ECTS Grade	
A	the top 10 %
B	the next 25 %
C	the next 30 %
D	the next 25 %
E	the last 10 %

This must be based on the relative performance of at least 30 individuals. When appropriate, the population for comparison may be built of entire modules or multiple years of student performance. Unsuccessful students receive the following grades:

FX	Failed – improvements are necessary before the work can be recognized.
F	Failed – significant improvements necessary.

§ 11 Retaking Examinations

(1) Failed module examinations may generally be retaken once. Should an examination consist of multiple sections in different subject areas, then only the failed subject areas must be retaken. The form of the retaken examination may be different from that of the original. The module coordinator decides how to handle retakes.

(2) The date and time of the retake examination will be given at the beginning of the module in the module announcements. There must be at least two weeks between the release of the results from the first examination and the retake examination, and the retake examinations must be completed by the beginning of the following semester.

(3) Permission for the second repetition of a module examination must be requested from the examination committee and may be approved if the student's performance in other areas indicates that he or she will successfully complete the course of study. The request must be submitted within the first six weeks of the following semester. The examination committee decides whether to grant or deny the request.

(4) A second repetition of a module examination is not allowed in an elective module. A request for a second retake will also be denied if another module examination has been failed as in § 12 sections 1 or 3.

(5) The module coordinator decides prior to the retake examination which areas of the module must be covered in the retake. A second retake must be completed within one year of the failed module exam; otherwise the second retake will also be considered as failed.

(6) If the candidate fails a second retake examination or the second retake is counted as failed, then the module examination is recorded as failed.

(7) If the master's thesis is failed for the first time or is initially counted as failed for the first time, it may be resubmitted once. The candidate must register within 8 weeks to resubmit the thesis. The thesis must be resubmitted to the Office for Student Affairs (*Büro für Studentische Angelegenheiten*) in the Faculty of Physics and Astronomy within the period named in § 16 section 6 following the assignment of the topic of the resubmission. Otherwise the rewrite is considered failed as per § 16 section 1 and the master's examination is also recorded as failed. It is not possible to resubmit the master's thesis more than once.

(8) A failed module examination in a similar field of study at the Friedrich-Schiller-Universität Jena or at another university or equivalent postsecondary institution within the scope of the German Constitution (*Grundgesetz*) shall count against the number of possible retake examinations in sections 1 and 4. The same is true for resubmission of the master's thesis.

§ 12

Absence, Withdrawal, Fraud, Breach of Regulations

(1) An examination is graded as failed (5.0) if the candidate does not show up at the date and time set for the examination and does not have a sufficient reason for missing the exam, or if he or she prematurely ends the examination without sufficient reason. The same follows for the failure to turn in an essay, internship report, master's thesis, or other written examination by the deadline.

(2) If the candidate does have sufficient reason for missing or prematurely ending an examination as in section 1, then he or she must immediately submit a written, signed, believable account of the reason to the examination committee (generally within three working days). If the reason is sickness or injury of the candidate or a child in his or her care, a written medical certificate (*Attest*) from a doctor, or if requested also from a public health officer (*Amtsarzt*), is to be provided which attests to the candidate's inability to take the examination at the appointed time. If the reason is accepted, a new appointment will be made for the examination. Results from already completed parts of the examination are to be taken into account.

(3) If the candidate attempts to influence the results of an examination by deceit or the use of unapproved aids, the examination will be graded as failed (5.0). A candidate who disrupts the orderly progression of an examination may be expelled from the examination by the examiner or observer; in this case the examination is also graded as failed (5.0). In severe cases, the examination committee may also exclude the candidate from other examinations.

(4) Within one month following the release of examination results, the candidate may submit a written request that the examination committee reviews a decision regarding deceit or disorderly conduct by the candidate as in sections 3 sentences 1 and 2.

§ 13

Cases of Hardship

(1) If the candidate can convincingly show that he or she is not fully able to complete examinations as they are usually offered, due to a lasting or constant physical or mental disability, he or she will be allowed either more time, or a different format for examinations. The attestation of a public health official (*Amtsarzt*) may be required. The examination committee decides whether to accept or deny the candidate's request.

(2) The same is true for academic work. However, it is required that the candidate is sufficiently often present in courses. Otherwise the candidate must apply for a leave of absence according to the matriculation rules of the Friedrich-Schiller-Universität Jena.

II Master's Examination

§ 14

Manner and Scope of the Master's Examination

(1) The master's examination is structured in modules and is completed concurrently with the course of study.

(2) The master's examination comprises:

1. Examinations in the required and elective modules (module examinations) of the course of study in optics, and internships as well as
2. the master's thesis.

(3) In the first year of study the candidate must earn 60 credits in basic courses, general optics courses, optics elective courses, and both internship module examinations.

(4) In the third semester the candidate must earn 30 credits in optics elective courses and the research internship.

§ 15

Additional Modules

(1) The candidate may – insofar as the schedules of individual modules don't prevent it – take additional modules offered by the Friedrich-Schiller-Universität Jena outside of the master's program in optics.

(2) Additional modules must be completed with an examination. No credits will be granted for the course of study in optics, and the grades earned will not be calculated into the cumulative grade. If the candidate submits a request, the additional modules and the results of the module examinations may be included in the final transcript.

(3) The status of a module as an additional module is to be chosen during registration for the module.

§ 16

Examination Dates and Times

(1) The module examinations in the first year of study are to be finished at the latest by the end of the second year, and for the second year, at the latest by the end of the third year. If the candidate fails to do so in the defined period for reasons that he or she is responsible for, then the module examinations are counted as failed for the first time. The right to retake examinations according to § 11 remains unchanged.

(2) The master's thesis is to be registered with the examination committee at the latest within three weeks after the candidate has been informed that he or she has successfully completed the required 90 credits. The thesis must be resubmitted within the period named in § 21 section 6 following the assignment of the topic of the resubmission to the Office for student affairs (*Büro für Studentische Angelegenheiten*) in the Faculty of Physics and Astronomy.

(3) Part-time students are allowed twice as much time to complete their module examinations (twice as long as allowed in section 1) and to submit their master's theses (twice as long as allowed in § 21 section 6).

(4) The candidate is responsible for ensuring that he or she completes all examinations within the allowed time. In particular, the candidate must be aware of how frequently modules are offered and in what order they must be taken.

§ 17

Admission to the Master's Examination

(1) To be admitted to module examinations, a candidate must:

1. be registered with the Friedrich-Schiller-Universität Jena for the Master's Program in Photonics,
2. have fulfilled the prerequisites for the individual module examinations as listed in the module descriptions, and
3. not already have failed the same module examination or master's examination in photonics the maximum number of times, and not currently be engaged in another course of examination.

(2) To be admitted to the master's thesis, a candidate must:

1. be registered with the Friedrich-Schiller-Universität Jena for the Master's Program in Photonics,
2. demonstrate that he or she has earned at least 72 of the required credits in the program,
3. have finished all three internships required for the course of study, and
4. not already have failed the master's examination in photonics the maximum number of times, and not currently be engaged in another course of examination.

§ 18

Admission Procedure

(1) Registration for a module examination must occur within six weeks after the beginning of courses. Within this time, it is possible to drop a module without explanation. Afterwards the registration for the module is binding. In the application the candidate must show that he or she fulfils the prerequisites in § 17 section 1.

(2) The admission to module examinations is approved by the module coordinator appointed by the examination committee. Notice is only given if the candidate is not allowed to participate in the examination. In this case the candidate must be informed by the examiner in the customary way at the latest 14 days before the examination.

(3) The written request to begin the master's thesis is to be submitted to the examination committee at the latest two weeks before the beginning of the master's thesis. In addition to the request, the candidate must submit:

1. proof of completion of the requirements in § 17 section 2,
2. a suggestion for the topic and advisor of the master's thesis and
3. a declaration that the candidate has not already failed the master's examination in photonics the maximum number of times, and is not currently engaged in another course of examination.

(4) If the candidate is not able to submit the documents required in section 3 sentence 2 as described, the examination committee may decide to accept a different form of evidence that the candidate is qualified to be admitted to the examination.

(5) The permission to begin the master's thesis is given by the examination committee or the chairperson according to § 7 section 6.

(6) Permission to begin the master's thesis will not be granted if:

- a) the requirements in § 7 section 2 have not been fulfilled or
- b) the accompanying documents are not complete or
- c) the candidate has failed the master's examination in photonics the maximum number of times at a scientific postsecondary school in Germany or
- d) the candidate is currently engaged in another course of examination in the same subject area.

Permission may otherwise only be denied if the candidate has lost his or her right to take the examination through failure to meet a deadline.

§ 19 Module Examinations

- (1) Every module concludes with an examination which tests the necessary basic knowledge regarding each topic in the module. The credits awarded for a module are earned when the module examination has been passed. This does not affect § 15 section 2.
- (2) Registration for a module entails binding registration for the module examination. Students must register for modules within six weeks following the beginning of courses. Within these six weeks, it is possible to cancel a module without explanation. Afterwards the registration is binding. The deadlines given in the module announcements are binding. Cancelling a module does not excuse the candidate from the requirement to respect the deadlines in § 16 section 1.
- (3) Registration for modules generally requires successful completion of modules from the previous semester or year of study. Additional requirements for each module are listed in the module catalogue.
- (4) One module examination may consist of multiple section examinations which may involve a combination of the forms of examination listed in § 9. The form of each examination, their combination and the weight of each are to be given in the module description.
- (5) The module examinations in modules which are prerequisite for modules in the following semester are to be organized so that the results, as well as the results of retaken examinations will be decided by the beginning of the upcoming semester.
- (6) Examinations will generally be conducted in English. Students may submit requests to have examinations given in German. In modules which are taught in German, the examinations will also usually be given in German. On request of the student these examinations can be given in English, if the examiner agrees.
- (7) A module examination is passed if a grade of at least "passed" (*bestanden*) or 4.0 is granted on the scale in § 10.

§ 20 Internships

- (1) Three internships are integrated into the first three semesters of the course of study. The orientation lab in the first semester is completed in the faculty or in an institute chosen by agreement of the instructors. The internship in the second semester should be completed outside of the faculty in a research-intensive business or a scientific institute in an area of optics. The research internship in the third semester may be completed in an institute of the faculty, a non-university scientific research institute, or a research-intensive business in an area of optics. The student must be supervised at the location of the research internship outside of the faculty by a scientific advisor which must be a graduate of a postsecondary program.
- (2) The content of each internship must be presented to, and approved by an advising instructor in the faculty before the beginning of the internship. A written or oral report of the internship is to be prepared and presented to the advising instructor no later than one month following the end of the internship. The instructor then evaluates the report according to § 10 section 3. In the report the candidate should demonstrate that he or she is able to reflect upon and conduct self-directed research and to obtain and present results according to scientific standards. The scientific correctness of the report is to be determined by the advisor. If the internship report does not receive a passing grade, the candidate is to be given the possibility to submit a revised version within one month of receiving the results.
- (3) If the scientific correctness has been certified and the internship has been given a passing grade, the credits listed in the module catalogue will be awarded.

§ 21 Master's Thesis

- (1) In the master's thesis, the candidate should demonstrate the ability to conduct independent scientific work on a problem within his area of study according to scientific standards, and to produce results within a limited period of time. The subject and task should be selected so that the results can be produced within the allowed time, and that the candidate must not invest more than 900 h.
- (2) The master's thesis may also be done as a group project, if the project is so constructed that the contribution of the individuals can be clearly distinguished and individually evaluated, for example by dividing the project into distinct tasks or via another objective measure, and if the project fulfils the requirements in paragraph 1 for each candidate.
- (3) The topic of the master's thesis will be determined, and the thesis will be advised by an examiner who is a member of the faculty appointed by the examination committee according to § 8 section 1. The candidate is to be given the opportunity to make suggestions regarding the topic of the master's thesis.
- (4) The topic of the master's thesis may first be issued following approval of the candidate to begin the master's thesis work. The chair of the examination committee is in charge of issuing the topic and is to record it in the candidate's files. If the prerequisites to begin the master's thesis work listed in § 17 section 2 are fulfilled, the topic must be issued three weeks following the submission of the candidate's request to begin the master's thesis work, and no longer than four weeks after the candidate has been informed that he or she has earned all 90 credits necessary to qualify him or her to begin the master's thesis work.
- (5) If it is requested by the student, the chair of the examination committee must ensure that the candidate has a topic for the master's thesis within the allowed period of time. This refers to the period in § 16 section 2.
- (6) The time allowed for writing the master's thesis is limited to a period of six months. The candidate may submit a request for an extension of up to three months, which will be granted in justified and exceptional cases. The request must be accompanied by a statement from the advisor and submitted at the latest 14 days before the end of this period. Extensions will also be granted in the case of an illness which leaves the candidate unable to work and is attested by a public health official. The chair of the examination committee decides whether to grant or deny requests for extensions.
- (7) The topic of the master's thesis can only be changed or rejected once, and only within the first four weeks of the writing time. The time prior to the changing or rejection of the topic will not be counted towards the total writing time.
- (8) The master's thesis is to be submitted in the form of three printed and bound copies in the examination office of the Faculty of Physics and Astronomy. An electronic copy (as a Word or PDF file) must also be submitted.
- (9) When the candidate submits the master's thesis, he or she must certify in writing that the work – or his or her part of the total work in the case of a group project – was independently completed, using no sources or aids other than those listed in the work, and that the citation of information, words and ideas from these sources is clear in the document.
- (10) If the master's thesis is not submitted by the deadline, it receives a failing grade as per § 12 section 1.
- (11) The master's thesis is to be evaluated by two examiners. One of the examiners should be the one who decided the topic of the thesis. The second examiner is chosen by the chair of the examination committee. The evaluations should be completed within six weeks. The grade suggested by each examiner should be according to § 10 and justified in writing.
- (12) The results of the master's thesis are presented by the candidate in a 20-30 minute talk, and then discussed. The grade awarded to the master's thesis is arithmetic mean of the grades awarded by both examiners and the grade for the oral presentation, as long as the grades from the examiners do not differ in more than 2.0 points. Should they differ by more than 2.0 points, a third examiner must be appointed to evaluate the thesis. The same follows if one of the examiners gives a failing grade (*nicht bestanden*). The chair of the examination committee

appoints the third examiner. In this case, the grade awarded to the master's thesis is the arithmetic mean of the two better examiner grades and the grade for the oral presentation. However, the master's thesis may only be graded as "sufficient" (*ausreichend*) if at least two of the component grades are "sufficient" or better.

§ 22

Passing Grades on the Master's Examination, Comprehensive Grade

(1) The master's examination is deemed to be passed if the module examinations within the optics program of study and the elective study have been passed for a total of 90 credits, and the master's thesis has been awarded with a passing grade for a total of 30 credits. The cumulative grade for the master's examination is calculated by taking the average of the grades for all module examinations and the master's thesis, weighted by the number of credits each is worth.

(2) For participants in a cooperative program: the master's examination is passed if the candidate has fulfilled the requirements set in the contract.

§ 23

Master's Transcript, Diploma Supplement, Master's Certificate

(1) If the master's examination has been passed, an official transcript will be prepared immediately, within no more than four weeks if possible. The transcript shows the modules taken by the candidate, the corresponding credits and grades earned on the module examinations, and also additional modules if the candidate has requested this as per § 15. The transcript is to be signed by the chair of the examination committee. The date written on the transcript is the day on which all examination and academic requirements were fulfilled.

(2) Students in the international Erasmus-Mundus Master's Program "Optics in Science and Technology" who have completed their master's examination in the photonics program receive a transcript with the names of the modules taken at different universities, and the credits and grades earned in each. The transcript is to be signed by the chairs of the examination committees at all participating universities. The date written on the transcript is the day on which all examination and academic requirements were fulfilled.

(3) Simultaneously with the transcript, a diploma supplement according to the "Diploma Supplement Model" of the European Union/Europarat/UNESCO will be prepared both in German and in English.

(4) If the examination has been failed the maximum number of times, the chair of the examination committee will inform the student in writing, and this decision is to be delivered along with information about the student's legal right to appeal.

(5) If the candidate leaves the university or changes his or her course of study, a certified document will be created for him or her showing the examination and academic performance and grades earned up to this time according to § 10.

(6) When finishing with a master's degree, a module certificate is also given to the candidate along with the transcript. The module certificate has the same date as the transcript. This certifies that the candidate has earned the degree of Master of Science.

(7) The certificate is signed by the dean of the faculty and the chair of the examination committee and stamped with the seal of the university. The certificate for students of the international Erasmus-Mundus Master's Program "Optics in Science and Technology" in the photonics program is signed by the deans and chairs of the examination committees of both universities involved in the program.

III Final Provisions

§ 24

Invalidity of Examinations

(1) If the candidate has been deceitful in the course of the examination and this is first discovered after the awarding of the transcript, the examination committee can retroactively change the grades awarded for the examinations on which the candidate was deceitful, and may change the final grade to partially incomplete or failed.

(2) If the prerequisites for the admission to an examination were not fulfilled, but without deceit on the part of the candidate, and if this first becomes known after the transcript has been issued, this error is considered rectified by the candidate's passing of the master's examination. If the candidate was willfully deceitful, then the appropriate course of action is decided by the chair of the examination committee.

(3) The candidate is to be given an opportunity to defend him or herself before a decision is made.

(4) The false transcript is to be reclaimed and, as appropriate, a new one issued. The certificate is also to be reclaimed if the examination grade must be changed to failing. The decisions in section 1 and section 2 sentence 2 cannot be made if more than 5 years have passed since the date on the transcript.

§ 25

Viewing of Examination Files

Within a year following the announcement of the results of the final examination, the candidate may submit a written request to view his written examination files, the opinions of the examiners and the examination protocols, and must be allowed to do so. The chair of the examination committee determines the place and time of the viewing.

§ 26

Opposition Proceedings

(1) Negative decisions and other incriminating administrative decisions which have been met following this document are to be delivered in writing and to be justified as well as accompanied by a clarification of the recipient's legal rights. A written complaint regarding any such decision can be submitted to the examination committee within one month following the receipt of the written decision.

(2) The examination committee decides how to handle the complaint. Insofar as the complaint is against a decision of the examiners, the examination committee decides following a hearing with the examiner(s).

(3) Members of the examination committee cannot perform this responsibility if they are themselves involved in the event about which the complaint has been filed.

(4) The response to the complaint should be decided as quickly as possible. Insofar as the complaint is not granted, this decision is to be justified and accompanied by a clarification of the recipient's legal rights. This is to be provided to the person who is responsible for submitting the complaint.

§ 27

Equal Opportunity Clause

Status and functional operators in this document apply equally to women and to men.

§ 28
Coming Into Effect, Interim Regulations

(1) This document comes into effect with its announcement in the official record of the Friedrich-Schiller-Universität Jena on April 1st 2009.

(2) With coming into effect this document applies to all students who began their study in the winter semester 2007/2008. Work which they have done prior to the coming into effect of this document will still be recognized.

Jena, May 18th 2009

Prof. Dr. Klaus Dicke
Rector
of the Friedrich-Schiller-Universität Jena