

Translation
of
Study and Examination Regulations
for the master's program
Physical Engineering
at the University of Applied Sciences Mittweida
Faculty Engineering Sciences
of 13th July 2022

Based on § 34, para. 1, sentence 1, § 36, para. 1 of the Act on the Freedom of Higher Education in the Free State of Saxony (Sächsisches Hochschulfreiheitsgesetz - SächsHSFG) in the version promulgated on 15th January 2013 (SächsGVBl. p. 3), last amended by Article 2 of the Act of 30th September 2021 (SächsGVBl. p. 1122), the University of Applied Sciences Mittweida, hereinafter referred to as HSMW, enacts these study and examination regulations as its statutes.

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1. Section: General Provisions

§ 1

Scope of application, study, and examination objectives

- (1) These regulations apply to the master's program in Physical Engineering at the HSMW.
- (2) The graduates of the course of studies Physical Engineering have basic technical knowledge in
 1. Physics,
 2. Solid state physics,
 3. Quantum mechanics,
 4. Laser equipment technology,
 5. Components of laser technology,
 6. Laser-matter-interaction,
 7. Optical design,
 8. Micro- and nanotechnology,
 9. Developments in laser technology,
 10. Simulation and
 11. Marketing.

The graduates are able to understand current English-language research literature. They are proficient in the use of international scientific language, both written and spoken, and are capable of communicating their results in mathematical texts and lectures as well as using modern media at the highest professional level. They are capable of independent scientific work and further education. The HSMW supports the aim of integrating disabled people. Students are provided with the knowledge required to create accessibility (§ 3 SächsIntegrG). Graduates are equipped with social skills necessary for gainful employment and the ability to engage in society. Extracurricular modules promote interdisciplinary thinking between the natural sciences, engineering, and social sciences as well as personal development. personality development.

- (3) The master's examination constitutes the professional qualification of the degree program. They ascertain whether the candidate has acquired the in-depth expertise required for the transition to professional practice, has an overview of the interrelationships in his field of expertise and is capable of independently applying scientific methods and findings.
- (4) If the master's examination has been passed, the master's degree "Master of Science" (M.Sc.) will be awarded, referring to the course of study "Physical Engineering".

§ 2

Admission to studies

- (1) The qualification required for the master's program in Physical Engineering at the HSMW is verified by a first university degree qualifying for a profession or a degree

from a state or state-recognized vocational academy in an engineering discipline such as laser technology, physical technology, physics, electrical engineering, mechatronics, or mechanical engineering. Applicants with a degree in an interdisciplinary field in accordance with Sentence 1 may be admitted if the engineering part of the course outweighs the other parts.

- (2) Applicants must have at least the grade "satisfactory" in the basic English course of the grammar school or an equivalent language certificate and the grade "satisfactory" in an English course of the study in accordance with para. 2. The English education of the Fachoberschule (Technical College) is equal to the basic course of the Gymnasium (Secondary School). If these requirements or equivalent knowledge are not met, enrolment is subject to the condition that an equivalent English course is completed within the first two master semesters with a grade of at least "satisfactory".
- (3) The course of study may be respectively commenced in the winter semester unless the Faculty Council of the Faculty of Engineering decides otherwise.
- (4) Admission is granted by the Applicant Service and Legal Affairs Department of the HSMW.

§ 3

Structure of the course of study

- (1) The master's program in Physical Engineering is a consecutive program.
- (2) The course of study has a modular structure. For successfully completed modules, the following time is allocated according to the time required for the completion of the modules
 1. participation in courses,
 2. the preparation and follow-up of courses,
 3. self-study and
 4. the preparation for and taking of examinations

credit points are awarded according to the European Credit Transfer and Accumulation System (Credits). The number of credit points to be earned per module is determined by the curriculum. Credits will only be awarded if the module is passed § 21, para. 1). One credit point corresponds to a workload of 25 to 30 hours for an average-ability student.

- (3) The modules offered are either mandatory, compulsory elective or additional modules. Mandatory modules are the modules of the course of studies which are required for all students. Compulsory elective modules are the modules of the course of studies that are offered as an alternative. The modules chosen by the student are treated as mandatory modules. Additional modules are optional courses which serve the student to supplement, perfect, deepen or specialize and can be taken voluntarily. There is no entitlement to all compulsory elective or additional modules actually being offered.

- (4) Lectures, seminars, and practical courses can be the main forms of teaching in courses. To support the students, tutorials are offered within the scope of the available capacities, especially in the first semesters. In accordance with the module descriptions, courses can also be held in a foreign language.
- (5) Students who have not yet completed an examination by the beginning of the third semester ought to consult with the student advisory service during the third semester.
- (6) The course concludes with the master's examination after a total of at least 120 credit points has been reached.

§ 4

Curriculum schedule and module manual

- (1) The curriculum schedule (Annex) applies to the studies. It includes:
 1. the mandatory and compulsory elective modules as well as the type of course and the number of hours,
 2. the module examinations to be rendered including the type of examination, the duration of the examination, the weighting, and the credit points to be achieved upon passing the module examination,
 3. the time distribution of the weekly hours per module and semester and
 4. the recommended chronological order of the modules.
- (2) By resolution of the Faculty Council of the Faculty of Engineering, a binding module handbook will be prepared for this course of study. The content and structure of this manual must comply with the framework requirements for the introduction of credit point systems and the modularization of study programs (KMK resolution of 15th September 2000 in the version of 22nd October 2004, as amended). In the module manual a module description shall be made for each module, which shall contain at least:
 1. contents and qualification goals of the module,
 2. forms of teaching,
 3. requirements for participation,
 4. application of the module,
 5. requirements for the scoring of credit points,
 6. credit points and marks,
 7. frequency of modules offered,
 8. workload,
 9. duration of the modules.

§ 5

Exam structure

- (1) The master's examination consists of the module examinations including the master's project.

- (2) A module is completed by a module examination. Module examinations can consist of several examination achievements. The module examinations to be taken are defined in the curriculum (Annex).
- (3) If a module examination consists of several examination performances, these may be required in a specific order. Likewise, modules can be required in a specific order. Further details are regulated in the module descriptions. If a sequence has been determined, the examinations or modules to be taken beforehand are admission requirements for the examinations or modules to be taken afterwards.
- (4) In addition, the curriculum (Annex) specifies the academic achievements that precedes a module examination, and which are a prerequisite for admission to the module examination (preliminary examination performances, § 8).

2. Section: Admission to the Master's Examination

§ 6

General admission requirements

- (1) The master's examination can only be taken by those who
 1. is enrolled in the master's program in Physical Engineering at the HSMW, and
 2. if applicable, have completed the preliminary examination performance stipulated in § 5, paras. 3 and 4.
- (2) Admission to a module examination of the master's examination may only be refused if
 1. the conditions or procedural requirements set out in para. 1 are not fulfilled pursuant to § 7, para. 1, or
 2. the documents are incomplete, or
 3. the candidate in the same or a degree course of study with the same subject-matter has ultimately failed the final examination or is undergoing an examination procedure, or
 4. the candidate has already ultimately failed a module examination in another course of study required for the graduation of this course of study.
- (3) A module examination may also be taken by those who are registered as guest students at the HSMW, have a university entrance qualification and whose participation in the examination has been approved by the examiner upon application.

§ 7

Registration and deregistration for examination, admission procedure

- (1) For the examinations offered pursuant to § 19, para. 4, sentence 1, application forms shall be provided by the Department of Study Organization in an appropriate manner between four weeks to one week prior to the respective examination period. The student registers for the examination electronically by personal declaration within this period. Before the start of the examination, the student confirms by

signature that he/ she fulfils all admission requirements for the examination. If the examinee is denied admission, he/she must be informed of this by the examiner before the examination begins. Otherwise, the examinee is admitted to the examination.

- (2) Up to one week prior to the examination date, the student may withdraw from the examination without giving reasons by signing out of the registration form.
- (3) The examiner may also admit a student to the examination if the registration was missed due to important reasons, the examination procedure is not disturbed by the subsequent admission and there are no valid reasons against the admission. Para. 1, sentence 3 shall apply mutatis mutandis. Admission shall be provisional granted pending subsequent verification of the admission requirements.
- (4) At the beginning of the examination, the examiner or the supervisor are entitled to demand that the examinees identify themselves. If a candidate takes part in an examination without fulfilling the admission requirements, he/she may be excluded from continuing the examination in question by the examiner or supervisor.

§ 8

Types of preliminary examination performances

- (1) Preliminary examination performances are admission requirements for individual module examinations. Preliminary examinations are assessed, not necessarily graded academic achievements that must be taken during the course of study. They can be repeated as often as desired.
- (2) Preliminary examination performances shall be taken in the following form:
 1. Oral testate
Oral tests are discussions in which students have to perform independently within a specified time. In them, knowledge of a field of knowledge is applied, summarized, evaluated, documented, and discussed. They can be performed individually or in groups of usually no more than four students. can be completed.
 2. Written testate
In written tests, tasks must be completed independently in writing or by computer within a specified time. In them, knowledge of a field of knowledge is applied, summarized, evaluated, documented, and discussed.
 3. Laboratory Certificate
Laboratory certificates comprise experimental or software-technical, completed scientific tasks, which can also be conducted using computers. They include the preparation of the tasks, the evaluation of data as well as the evaluation and discussion of the results. As a rule, laboratory tests are to be carried out independently.

4. Work Samples

Work samples are independent works without restriction of aids, in which findings of a field of knowledge are applied, summarized, evaluated, documented, and discussed. They can be performed individually or in groups of usually no more than four students. Parts of the work sample can be provided in electronic form. They can be presented with an oral presentation. Work samples are not graded.

5. Drawing Documentation

Drawing documentation are work samples (No. 4) in the form of technical drawings.

- (3) The number and type of Preliminary examination performances to be performed are specified in the curriculum schedule. The subject of the Preliminary examination performances is determined by its assignment to the respective course units.

3. Section: Module Examinations

§ 9

Types of examination performances

- (1) Examination performances shall to be given as oral (§ 10), written (§ 11) or other examination performances (§ 12). In the case of alternatively offered examination performances, the examinee may choose between the alternatives.
- (2) Oral and other examinations may be held as group examinations. The contribution of the individual to be assessed as an examination performance must be substantial, clearly distinguishable as an individual examination performance and be assessed separately. As a rule, the group should not comprise more than three persons.
- (3) Upon written application by the student to the examination board, individual pieces of graded work may, in justified exceptional cases and provided that the scope of the examination remains equivalent, be carried out in another form, or replaced by pieces of academic work, provided that the pieces of academic work are equivalent according to the requirements and procedures of the pieces of graded work. The academic achievements are treated as examination achievements with regard to assessment, passing and repetition. The simultaneous recognition of a course credit for different examination credits is excluded.
- (4) If the candidate can credibly demonstrate that he/she is unable to take all or part of the examination due to a prolonged or permanent disability, he/she shall be permitted to take the examination within an extended processing period or to take equivalent examination performance in another form. For this purpose, the presentation of a medical certificate and, in cases of doubt, an official medical certificate may be required. The same applies to preliminary examinations.

- (5) If the candidate can credibly demonstrate that he/she is unable to complete examination performances in whole or in part in the intended form due to the care of his/her own children up to the age of 14 or the care of close relatives, the chairman of the examination committee shall, upon request, permit the examination to be performed in an equivalent manner. Close relatives are children, parents, grandparents, spouses, and life partners. The Chairman of the Examination Committee, in consultation with the responsible examiner, shall decide how the examination shall be performed. Suitable measures to compensate for disadvantages include, for example, extended processing times, processing breaks, use of other media, use of other examination rooms within the university or another examination date. The same applies to preliminary examination performances.
- (6) Applications pursuant to paras. 3 to 5 shall be submitted no later than four weeks prior to the examination. If the reason arises after this date, the application must be submitted immediately after the reason arises. to be submitted.

§ 10

Oral examination performances

- (1) Oral examination performances are examination interviews.
- (2) In the oral examination the candidate shall demonstrate the competence to recognize the relations of the examination area and to be able to classify special questions in these interrelationships. Furthermore, it shall be determined whether the candidate has a broad basic knowledge. Within the scope of the oral examination performance, tasks may be set for written treatment to an appropriate extent if it does not negate the oral character of the examination.
- (3) The duration of the oral examination shall be at least 15 minutes and at most 45 minutes per candidate.
- (4) Oral examinations shall be taken before at least two examiners or before one examiner in the presence of an expert observer (§ 15). The names of all persons present as well as the essential subjects and results of the oral examinations shall be recorded in a protocol. The result shall be announced to the candidate on conclusion of the oral examination.
- (5) Students who intend to submit to the same examination in a later examination period shall be admitted as listeners in accordance with the spatial conditions unless the candidate objects. However, the admission does not extend to the consultation and announcement of the examination results to the candidate.

§ 11

Written examinations

- (1) Written examination performances are spatially and temporally defined performance assessments during which the candidate is to prove that, based on the necessary basic knowledge, he/she is able to solve tasks in a limited time and with limited aids using common methods of his/her subject and to work on topics in writing

or by computer. Several tasks or topics can be selected. Written examinations based on the multiple-choice procedure are excluded.

- (2) Written examinations are taken under supervision. The processing time must not be less than 90 minutes and should not exceed 240 minutes. If an examinee arrives late for a written examination performance, he/she has no right to a corresponding extension of the processing time. Leaving the examination room is only permissible with the permission of a supervisor.
- (3) The examinees present, the beginning and end of the examination as well as special occurrences must be recorded by the supervisor.
- (4) Written examination performances, the passing of which is a prerequisite for the continuation of studies, shall as a rule be assessed by two examiners. In the case of the second repeat examination, this rule is mandatory. The assessment procedure must be completed within four weeks of the examination date; the assessment procedure for examinations which take place during the examination period of the summer semester must be completed within eight weeks of the end of the examination period, unless there are valid reasons which justify the need of a longer assessment period.

§ 12

Other examination services

- (1) Other examination performances are project performances.
- (2) In project performances, students systematically work on a given topic over a wider but limited period of time. In particular, the development, implementation, and presentation of concepts as well as the ability to work in a team should be demonstrated. The student should demonstrate the competence to define goals for a larger task and to develop interdisciplinary solutions and concepts. The processing time for project performances should not exceed 50 hours. Project performances can be combined with a short lecture (duration 10 to 15 minutes) on conception and results during the course. Project performances can be carried out in groups of up to eight students.
- (3) Documentary papers are independent written papers without restriction of aids, in which theoretical or experimental findings of a completed sub-area are summarized, evaluated, and discussed.
- (4) Other examination performances are usually evaluated by the lecturer. For other examination performances, the passing of which is a prerequisite for continuing the studies, § 11, para. 4 applies accordingly. Any other examination performance must be documented in result and procedure by written documents signed by the examiners.

§ 13

Subject of the module examinations

- (1) The curriculum schedule defines the module examinations as well as the type, structure, and weighting of the individual examination performances. The number of module examinations as well as the number of examination performances within the meaning of §§ 10 and 11 may not exceed six per semester. The total number of all examination performances per semester may not exceed ten.
- (2) The subject of the module examinations shall be the contents of the courses assigned to the modules. The subject of the individual examination results is determined by their assignment to the respective course units in the curriculum schedule. In the case of a module with only one examination performance, the entire content of the module shall be the subject of the examination.

§ 14

Additional modules

A student may take module examinations in modules other than those stipulated in the master's program in Physical Engineering as well as module examinations in other courses of study (additional modules). The results of the module examinations in these modules are not included in the overall grade of the master's examination. Participation in module examinations of another degree course requires the university entrance qualification for this degree course and the prior consent of the examiner.

4. Section: Audit Bodies

§ 15

Examiners and assessors

- (1) Examination performances are assessed by persons who have been appointed for this purpose by the examination board. Only those members and affiliates of the HSMW or another higher education institution who are authorized to teach independently in the relevant examination area should be appointed. Insofar as this is appropriate according to the subject of the examination, those who are authorized to teach independently only for a part of the examination subject may also be appointed. In exceptional cases, teachers for special tasks and persons experienced in professional practice and training may also be appointed, provided this is appropriate to the nature of the examination. Examination performances may only be assessed by persons who themselves possess at least the qualification to be ascertained by the examination or an equivalent qualification. or an equivalent qualification to be established by the examination.
- (2) The examination board may appoint assessors who have an advisory vote. The § 16, para. 6 shall apply mutatis mutandis to the examiners and assessors.
- (3) The names of the examiners shall be made known to the candidate in a timely manner.

§ 16

Examination board

- (1) The Council of the Faculty forms an examination board for the courses of study offered by the Faculty of Engineering. The work of the examination board shall be comprehensibly documented.
- (2) Upon request, the Examination Board shall report to the Faculty Council on the development of the examination and study times including the actual processing times for the master's thesis as well as on the division of the module and overall grades. The examination board makes suggestions for the reform of the study and examination regulations, the module descriptions, and the curricula. The report shall be disclosed at the HSMW in an appropriate manner.
- (3) The examination board consists of five members, one of whom is a student member. The professorial members must have an absolute majority of the votes. The student member has only an advisory vote. It is elected by the student council of the Faculty of Engineering for one year. The other members are elected by the Faculty Council for three years. Repeated membership of the examination board is permitted.
- (4) The Faculty Council appoints a professorial member of the examination board as chair. It shall appoint another professorial member to deputize. The examination board shall adopt rules of procedure. Between meetings of the examination board, the chairing member or, in his or her absence, the deputy member shall conduct the business. This shall include the tasks pursuant to § 18, para. 2, Nos. 8 to 17. The Examination Committee may delegate some of these tasks to other members, but not to the student member.
- (5) The members of the examination board have the right to attend the assessments of examination performances. This does not apply to student members who wish to take the identical examination during the same examination period.
- (6) The members of the examination board are subject to confidentiality. If they are not in public service, they shall be bound to secrecy by the chairman. The deliberations of the examination board are not open to the public.

§ 17

Higher education examination board

The HSMW forms a Higher Education Examination Board. Its composition shall be laid down in a statute. The Higher Education Examination Board is the appeal authority for all decisions of the Examination Board.

§ 18

Responsibilities

- (1) The examination board is responsible for monitoring compliance with these examination regulations.

- (2) The examination board decides on:
 1. fundamental questions in examination matters,
 2. the appointment of examiners and assessors (§ 15,
 3. the appointment of the examination board for the colloquium (§ 34, para. 1),
 4. the passing and failing grades (§ 21),
 5. the consequences of violations of examination regulations (§§ 24, 25),
 6. the determination of the invalidity of the master's examination after the award of a certificate (§ 29),
 7. appeals against examination decisions (§ 31),
 8. the taking of an examination in a form other than that intended (§ 9, paras. 3 and 4),
 9. the review of the reasons for extending the assessment period (§ 11, para. 4),
 10. the accreditation of achievements outside higher education (§ 19, para. 2, sentence 2, 3, para. 3),
 11. the rejection or recognition of a reason for missing or withdrawing from an examination performance (§ 24, para. 1),
 12. the recognition of periods of study, study and examination achievements and credit points (§ 26),
 13. the crediting of achievements obtained outside higher education (§ 27),
 14. the inspection of examination files (§ 30),
 15. approval of supervision of the master's thesis by a person not affiliated with the HSMW (§ 32, para. 3, sentence 2),
 16. the authorization to issue the master's thesis (§ 32, para. 4),
 17. the extension of the time for completing the master's thesis (§ 32, para. 6).
- (3) The University Examination Board shall decide on appeals against initial decisions of the Examination Board (§ 31, para. 2, sentence 2).
- (4) The Department of Study Organization is responsible for the organizational tasks required within the framework of these regulations. These include in particular:
 1. the management of examination files,
 2. the temporal and spatial organization and coordination of the examinations in cooperation with the faculties,
 3. information on processes relevant to the examination,
 4. the issuing of attestations,
 5. the issue of certificates and deeds (§ 28); and
 6. the issuing and signing of study certificates in accordance with § 21, para. 7).

5. Section: Procedural Regulations

§ 19

Deadlines

- (1) The standard period of study is four semesters. It comprises the theoretical semesters, the research and development projects and the module examinations including the master's project. The master's examination is to be taken within the standard

period of study; it is to be taken within four semesters after completion of the standard period of study. Module examinations should be taken in the semester stipulated in the curriculum schedule (Annex).

- (2) Periods of leave of absence are not counted towards the standard period of study. In the case of students who have participated in at least one election period in the bodies of the HSMW, the Student Body or the Studentenwerk or in the Study Commission of the master's program in Physical Engineering, the study period of one semester will not be credited against the standard period of study. In the case of participation of several years, a period of study of three semesters will not be credited against the standard period of study.
- (3) Missed deadlines for which the student is not responsible shall not be taken into account when calculating the deadlines for leave of absence and in the examination procedure; the standard period of study shall be extended accordingly. This also applies to periods of maternity and/or parental leave, interruptions of studies due to prolonged severe illness or other compelling reasons, as well as study delays due to a disability and periods of study abroad.
- (4) By the end of each semester, at least those module examinations shall be offered which are stipulated in the curriculum schedule. Examinations shall be scheduled in such a way that no courses are cancelled. Exams that are not taken during the course of study shall be held during an examination period following the lecture period. As a rule, the first repeat examinations are to be taken in the following semester, but at the earliest three weeks after the announcement of the examination result.
- (5) Within four weeks of the beginning of the course period, the Faculty of Engineering shall announce the examinations scheduled for this semester, their time schedule, and the examiners in a suitable manner as preliminary information. If the examination takes place outside the examination period, the information on the time must be supplemented by the calendar week. The dates of examinations which take place outside the examination period are to be included in the planning of the course schedule and must be announced to the student by the examiner no later than two weeks before the examination date. In the central planning of examinations, at least examinations in the compulsory modules of the curriculum schedule are included. The binding announcement of the central planning of the examinations shall be made at least two weeks before the start of the examination period.

§ 20

Assessment of examination performance and formation of grades

- (1) Examination performances are usually graded (paras. 2 to 4). They may also be assessed without grades (para. 5). An overall grade is calculated for the master's examination (para. 6). The examination results are announced online.

- (2) The grades for the individual examination performances are determined by the respective examiners. The following grades are to be used for the assessment of the examination performances:

1	very good	an outstanding performance
2	good	a performance significantly above average requirement
3	satisfactory	a performance corresponding to average requirements
4	sufficient	a performance which, despite its deficiencies, still meets the requirements
5	insufficient	a performance which no longer meets the requirements due to significant deficiencies

Individual grades may be raised or lowered by 0.3 to intermediate values for the differentiated assessment of examination performances; grades 0.7, 4.3, 4.7 and 5.3 are excluded. If an examination performance is evaluated by several examiners, the grades are formed using the arithmetic mean of the individual marks in accordance with section. Only the first decimal place after the comma is taken into account; all other places are deleted without rounding.

- (3) If a module examination consists of several examination papers, the module grade shall be calculated from the average of the weighted grades of the individual examination papers according to the curriculum schedule. Paragraph 2 sentence 4 applies accordingly.
- (4) The module grade corresponds to the evaluation:
 with an average of up to and including 1.5 = very good,
 with an average of 1.6 to 2.5 inclusive = good,
 with an average of 2.6 to 3.5 inclusive = satisfactory,
 for an average of 3.6 to 4.0 inclusive = sufficient,
 for an average from 4.1 = insufficient.
- (5) Examination performances marked as ungraded in the study schedule (appendix) are only assessed as passed or failed. Ungraded examinations are not included in the calculation of the module grade. If an ungraded examination performance is assessed differently by two examiners, a third examiner shall decide on the passing of the examination performance.
- (6) The module grades of all graded modules of the master's examination, including the grade of the master's project, are taken into account in the calculation of the overall grade of the master's examination. Paras. 3 and 4 apply accordingly to the formation of the overall grade. With an overall grade of 1.2 or better, the overall grade "with distinction" is awarded.

§ 21

Pass and failure

- (1) A module examination is passed if it has been assessed as passed or the module grade is at least "sufficient" (4.0). If a module examination contains ungraded examinations, these must be passed. In justified cases, a module examination with several graded performances shall only be passed, in deviation from sentence 1, if the examination results specified in the curriculum schedule (Annex) have been assessed at least "sufficient" (4.0). Upon passing the module examination, the credit points as stated in the module description shall be acquired.
- (2) A module examination is not passed if it has been assessed as failed or if the module grade is less than "sufficient" (4.0). It is also failed if ungraded examinations have not been passed or if the examinations mentioned in para. 1, sentence 3 have not been passed. A module examination is definitively failed if it can no longer be repeated. A module examination is deemed to have been definitely failed if the student has not enrolled for the second repetition examination in due time without good reason.
- (3) The master's examination is passed if all module examinations of the master's examination have been passed and the master's project has been graded at least "sufficient" (4.0).
- (4) The master's examination is not passed if one module examination including the master's project has not been passed. A master's examination which has not been taken within four semesters of the end of the standard period of study shall be deemed not to have been passed. It is ultimately failed if a module examination, including the master's project, has been definitively failed. The examinee may still take part in other module examinations as long as the final failure of the master's examination has not yet been conclusively ascertained.
- (5) A notification letter of the final failure of a module examination and of the impossibility of successfully completing the chosen course of study will be issued with instructions on legal remedies.
- (6) If the master's examination has conclusively failed, a certificate will be issued on application upon submission of the relevant evidence and the certificate of exmatriculation, which contains the examination achievements, their grades and the credit points obtained as well as the examination achievements still missing, which indicates that the master's examination has not been passed.

§ 22

Repetition of the module examinations and the master's examination

- (1) A failed module examination can only be repeated once within one year after completion of the first examination attempt. After expiry of this period, it shall be deemed as failed. Admission to a second repeat examination shall only be accepted upon application on the next possible regular examination date within one year at

the latest, after which it shall be deemed to have been conclusively failed. Registration for the examination shall be deemed to be the application.

- (2) The repetition of a passed module examination is not permitted.
- (3) In case of a failed module examination consisting of several examinations, only those which have not been graded with at least "sufficient" (4.0) and the examinations graded as failed are to be repeated.
- (4) A failed master's examination can only be repeated once within a year. After expiry of this period, the repeat examination is deemed to have been failed. A second repetition of the master's examination can only be held upon application for the next possible regular examination date within one year at the latest, after which the master's examination is deemed to have been conclusively failed. The enrolment for the examination is deemed to be the application for the second repeat examination.
- (5) Any failed attempts made at another higher education institution in the Federal Republic of Germany in the same course of study or in a corresponding degree program shall be credited towards the possibility of repetition.

§ 23

(not assigned)

§ 24

Omission, withdrawal

- (1) An examination performance shall be considered as "insufficient" (5.0) if the candidate misses a binding examination date without a valid reason or if he/she withdraws after the examination performance without a valid reason. The same shall apply if the specified processing time of an examination performance is exceeded.
- (2) The examinee must immediately notify the examiner in writing of the reason for the omission or withdrawal from the examination performance and provide credible evidence of this. In the event of illness, the candidate must submit a medical certificate to the Department of Study organization within five working days of the examination date. In case of doubt, an official medical certificate may be required. An illness of the examinee is equivalent to an illness of the child to be cared for predominantly by him/her alone or of relatives in need of care. The reason shall be deemed to have been accepted unless a written rejection is received within one month of receipt of the application. If the reason is acknowledged, the examination is deemed not to have been carried out through no fault of his/her own and a new date is scheduled. Existing examination results shall be credited in this case.

§ 25

Deception, infringement

If an examinee attempts to influence the result of his/her examination performance by threatening, deceiving, or using unauthorized aids, or if he/she interferes with the proper

conduct of the examination, he/she may be excluded from the continuation of the examination in question by the respective examiner or by the supervising person. The examination performance in question may be assessed as "insufficient" (5.0). In serious cases, the examination board may exclude the candidate from further examination performance.

§ 26

Recognition of periods of study, academic achievements, examination performances and credit points

- (1) Study periods, academic achievements, examination performances and credit points which have been achieved at a higher education institution shall be credited on application, unless there are significant differences with regard to the competences acquired. The non-credit shall be justified in writing. The documents required for the credit transfer must be submitted by the applicant.
- (2) In the equivalence assessment according to para. 1, no schematic comparison is to be made, but rather an overall consideration and assessment. When crediting periods of study, coursework, examinations, and credits completed outside the Federal Republic of Germany, the equivalence agreements approved by the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany and the German Rectors' Conference as well as agreements within the framework of higher education partnerships shall be observed.
- (3) In case of crediting study and examination achievements, the corresponding periods of study shall also be credited ex officio. The grades shall be adopted insofar as the grading systems are comparable and included in the calculation of the overall grade. In case of incomparable grading systems, the remark "passed" shall be included. § 27, para. 6, sentence 3, 2nd half sentence, sentence 4 shall apply mutatis mutandis. A marking of the crediting in the certificate is permissible.
- (4) After registration for an examination performance, study achievements, examination performances and credit points may no longer be credited against this examination performance.

§ 27

Recognition of knowledge and capabilities acquired outside higher education

- (1) Subject to paras. 2 to 5, knowledge acquired outside higher education shall be credited if it is equivalent in content and level to the course of study to be replaced. Equivalence must be established if the learning outcomes or competences demonstrated substantially equivalent to those to be replaced. § 26, para. 3, sentence 1 shall apply mutatis mutandis.
- (2) Credit shall be granted at the request of the student. The student shall submit the documents required for crediting. § 26, para. 4 shall apply mutatis mutandis.
- (3) The application shall include evidence of the acquisition of the knowledge and skills for which credit is sought. Furthermore, it shall be demonstrated that these meet

the requirements of para. 1. In case of doubt, a placement examination may take place.

- (4) If several students request the crediting of knowledge and capabilities, obtained in the same way, a flat-rate crediting procedure may be conducted. This will determine globally whether the knowledge and capabilities to be credited meet the requirements of para. 1. This determination may be made for several years and must be reviewed periodically. The student only has to prove that he/she has acquired this knowledge and capabilities.
- (5) Knowledge and capabilities acquired outside higher education may replace a maximum of half the course of studies. In the module "Master Project", no credit shall be given for knowledge and capabilities acquired outside higher education.
- (6) If an entire module is credited, a grade may be awarded if the knowledge and capabilities to be credited were graded in an examination and the grading system is comparable and equivalent. If no grade is awarded, the module will be marked "passed". If individual examination performances of a module are credited, the grade "passed" shall be recorded for these; only the examination performances which have been taken shall be considered for determining the module grade. The examination performances taken shall be weighted in such a way that they correspond to the ratio of the weighting specified in the curriculum schedule (Annex) for the examination to the sum of the weightings specified there for all examinations taken. The crediting is shown in the Diploma Supplement, a marking in the certificate is permissible.

§ 28

Certificate and master's certificate

- (1) A certificate of the passed master's examination shall be issued immediately, if possible, within four weeks. The module grades, the topic of the master's project and its grade as well as the overall grade shall be included in the master's examination certificate. Upon application, examination results of modules other than the prescribed modules (additional modules according to § 14) shall be included in an annex to the certificate.
- (2) The certificate shall bear the date of the day on which the last examination performance was performed. It is signed by the Dean of the Faculty and the Chairman of the Examination Board and bears the HSMW seal.
- (3) Simultaneously with the master's examination certificate, the candidate receives the master's certificate with the date of the certificate. This certifies the award of the master's degree. The certificate is signed by the Dean of the Faculty and the Chairman of the Examination Board and bears the HSMW seal.
- (4) The certificate and the master's degree must each be accompanied by an English translation. This will not be signed but sealed. The signature line in front of the name is supplemented by "signed:" and the header line by "translation".

- (5) The HSMW issues a Diploma Supplement in accordance with the "European Diploma Supplement Model" of the European Union, Council of Europe, and UNESCO. The text agreed between the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany and the German Rectors' Conference shall be used as a representation of the national education system.
- (6) Within the framework of cooperation with domestic and foreign higher education institutions, it is shown on application, in addition to the overall grade, how many students have completed the degree program within the last three years and what proportion of the graduates of the degree program have achieved what overall grade (ECTS grading table).

§ 29

Determination of the invalidity of the master's examination after the issuance of the certificate

- (1) If the candidate has cheated on an examination performance and this fact only becomes known after the certificate has been issued, the grade of the examination performance may be corrected in accordance with § 25. If necessary, the module examination may be declared "insufficient" (5.0) and the master's examination "failed". The same applies to the master's thesis.
- (2) If the prerequisites for the acceptance of a module examination were not fulfilled without the candidate intending to deceive, and if this fact only becomes known after the certificate has been issued, this deficiency shall be remedied by passing the module examination. If the candidate has deliberately unlawfully obtained the right to take the examination, the module examination can be declared "insufficient" (5.0) and the master's examination "failed".
- (3) The candidate must be given the opportunity to make a statement before a decision is made.
- (4) The incorrect certificate and the Diploma Supplement are to be withdrawn and replaced by a correct certificate or a certificate of achievement. The incorrect certificate must also be accompanied by the master's certificate if the master's examination has been declared "failed" due to a deception. A decision according to paras. 1 and 2 is excluded after a period of five years from the date of the certificate.

§ 30

Insight into the examination files

Within one year after completion of the examination procedure, the candidate will be granted access to his written examination papers, the related expert opinions, and the examination reports within a reasonable period of time upon request to the examination board. The request for inspection of the documents of an individual examination performance can be submitted to the respective examiner.

§ 31

Appeal proceedings

- (1) Any incriminating administrative acts which are taken in accordance with these examination regulations must be justified in writing and shall be accompanied by a notice of appeal. An appeal against the decision may be lodged with the board of examiners in writing or for recording within one month of its notification.
- (2) The board of examiners, as the examining authority, shall decide on the appeal. Insofar as the appeal is directed against a decision of the Examination Board, the University Examination Board shall decide if the Examination Board does not remedy the situation.
- (3) If the appeal is directed against an evaluation decision of one or more examiners, the Examination Board shall forward the appeal to the examiner for review. If the examiner amends his decision as requested, the Examination Board shall assist the appeal. Otherwise, the Examination Board will issue an objection notice.
- (4) A final decision on the appeal shall be taken within three months. Insofar as the opposition is not remedied, the notice of appeal shall state the reasons for the decision and contain instructions on the right of appeal.

6. Section: Deviating Regulations for the Master's Project

§ 32

Issue, processing time and submission of the master's thesis

- (1) The master's project concludes the course of study. It consists of the master's thesis and a colloquium. The master's thesis is a written examination paper. It is intended to show that the examinee is able to independently work on a problem in the subject area of the course of study using scientific methods within a specified period of time.
- (2) The master's thesis may also be completed in the form of a group work, if the contribution of the individual candidate to be assessed as examination performance can be clearly distinguished and individually assessed based on sections, page numbers or other objective criteria which enable a clear distinction and fulfils the requirements set out in para. 1.
- (3) The master's thesis may be supervised by a professor, or another person authorized to examine according to the Saxon Higher Education Freedom Act (Sächsisches Hochschulfreiheitsgesetz) to the extent that such person is active at the HSMW in a field relevant to the Physical Engineering course of study. If the master's thesis is to be supervised by a person working outside the HSMW, the consent of the chairman of the examination board is required. The student can suggest a supervisor for his master's thesis. The proposal does not constitute a claim.
- (4) The topic of the master's thesis is issued by the examination board. The topic and time of issue are to be recorded. The examinee may express topic wishes. At the candidate's request, the examination board will arrange for the timely issue of the

topic of the master's thesis. The topic will be handed out no later than four weeks after completion of the module examinations. The topic can only be returned once and only within two months of issue; in a repetition of the master's thesis, however, only if it has not already been returned at a previous attempt. The faculty ensures that each student can be given a topic for the master's thesis.

- (5) The processing time for the master's thesis is four months. In the case of experimental and empirical topics, or if the master's thesis is written in an institution outside the university, the processing time allowed for completion may be extended accordingly, but by a maximum of two months. The topic, task and scope of the thesis must be limited by the supervisor in such a way that the completion period can be adhered to. Consultations, agreements, and research in preparation for the definition of the topic of the master's thesis are not included in the processing time.
- (6) If completion of the master's thesis within the processing period is not possible for unforeseeable reasons for which the candidate is not responsible, an extension of up to two months may be granted upon timely written request by the candidate.
- (7) The master's thesis must be submitted to the Faculty of Engineering Sciences in two printed and bound copies as well as in digital text form on a physical data carrier in due time; the date of submission must be recorded. At the time of submission, the examinee must confirm in writing that he/she will complete his/her thesis - in the case of group work, his/her correspondingly marked part of the work - independently, has not used any sources and aids other than those indicated, and has not yet submitted the thesis for examination purposes elsewhere.

§ 33

Assessment and repetition of the master's thesis

- (1) The master's thesis shall be independently evaluated by two examiners, of whom at least one shall be a professor of the HSMW. Among them should be the supervisor of the master's thesis. The master's thesis will only be evaluated after all other module examinations of the master's examination have been successfully passed. The evaluation of the master's thesis must be completed before the colloquium, as a rule within four weeks after submission of the thesis. The master's thesis will be graded "insufficient" (5.0) if it is not submitted on time.
- (2) The grade for the master's thesis is calculated on the average of the two evaluations. If the examiners' grades differ by more than 2.0 grades points in the case of passing the thesis, the average is decisive if both examiners agree. If this is not the case, the examination board will obtain a further evaluation; in this case, the evaluation of the paper is based on the average of the three assessments. § 20, para. 2, sentence 2 shall apply *mutatis mutandis*.
- (3) If one examiner has graded the master's thesis as at least "sufficient" (4.0) or better, the other with "insufficient" (5.0), the examination board shall obtain a further examination evaluation. This will decide on the passing of the thesis. If the thesis has

been passed, grade of the thesis will be calculated from the average of the expert opinions voting for the § 20, para. 2, sentence 2 shall apply mutatis mutandis.

- (4) The grade for the master's project shall be calculated from the weighted average of the grades for the master's thesis and the colloquium in accordance with the curriculum schedule (Annex). § 20, para. 2, sentence 2 shall apply mutatis mutandis.
- (5) The candidate is obliged to submit a digital copy (deposit copy) of the master's thesis to the university library after the assessment of the master's project has been completed. The university library can make specifications on the manner of submission. The deposit copy becomes part of the collection of the university library. The candidate shall transfer to the university library the right of distribution (§ 17 UrhG) and the right to make the thesis publicly accessible (§ 19a UrhG). Restrictions on rights of use must be notified to the university library and must be recorded in the acquisition document.
- (6) Admission to the second repeat examination of the master's project is only possible upon application and only within two weeks after notification of the examination result of the first repeat examination of the master's project.

§ 34

Colloquium

- (1) The student shall be admitted to the colloquium if each of the examiners has graded the master's thesis with at least "sufficient" (4.0). In the 60-minute colloquium, the student must demonstrate in the discussion that he/she is able to independently discuss interdisciplinary and problem-related questions relating to the master's thesis on a scientific basis. The colloquium is conducted by an examination board as an individual or group examination. The examination board consists of the supervisor of the master's thesis as examiner and one additional examiner. Further examiners may be called in.
- (2) For the colloquium § 10, para. 5 applies mutatis mutandis. The public may be excluded for important reasons.

7. Section: Final Provisions

§ 35

Transitional provisions

- (1) For students who commenced their studies in the master's degree program Laser Technology/Physical Engineering before 1st September 2021, the study and examination regulations for the master's degree program Laser Technology/Physical Engineering of 16th May 2017, last amended by statutes of 1st December 2021, shall continue to apply; the study schedule (Annex) shall continue to apply in the version applicable on 31st August 2021.

- (2) For students who commenced their studies in the master's degree program Laser Technology/Physical Engineering on or after 1st September 2021 and before 31st August 2022, the study and examination regulations for the master's degree program Laser Technology/Physical Engineering dated 16th May 2017, last amended by statutes dated 1st December 2021, shall continue to apply.

§ 36

Entry into force and expiry

These examination regulations shall enter into force on 1st September 2017. Concomitantly, the study and Examination Regulations for the master's Program in Laser Technology/Physical Engineering of 16th May 2017, last amended by the statutes of 1st December 2021, shall expire. These regulations will be published in the official newsletter of Mittweida University of Applied Sciences and on the internet portal www.hs-mittweida.de/ordnungen.

Issued based on the resolution of the Faculty Council of 13th April 2022 and the approval of the Rectorate of 12th July 2022.

Mittweida, 13th July 2022

The rector
of University of Applied Sciences Mittweida

Prof. Dr. phil. Ludwig Hilmer

Study Schedule

Physical Engineering (M.Sc.)

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Module/ Learning units	SSP Wh	CH total	1. Sem. L/S/P/T	2. Sem. L/S/P/T	CP	PEP	EP	W
2901 Solid State Physics	90	60	3/1/0/0		5		Mo/30	1/24
2902 Quantum Mechanics/ Statistical Physics	90	60	2/2/0/0		5		Mw/120	1/24
2903 Modeling/ Simulation	90	60	2/0/2/0		5		Mop/PT	1/24
Elective Modules I (3 out of 7)								
2904 Basics of Additive Processes	90	60	2/2/0/0		5		Mo/30	1/24
2905 Radiation Physics/ Optics	90	60	2/2/0/0		5		Mo/30	1/24
2906 Laser Physics	90	60	3/1/0/0		5		Mw/90	1/24
2907 Digital Technology	75	75	2/2/1/0		5		Mw/90	1/24
2908 Digital Image Processing	90	60	2/0/2/0		5		Mw/90	1/24
2909 Marketing	90	60	3/1/0/0		5		Mw/90	1/24
2910 Biophotonics I - Interaction of Light with Organic Matter	90	60	2/2/0/0		5		Mw/90	1/24
2911 Physical Coating Technologies	90	60		2/1/1/0	5		Mw/90	1/24
2912 Physical Analytics	90	60		3/1/0/0	5		Mo/30	1/24
2913 Research and Development Project I	225	75		0/1/4/0	10		Mop/PT	2/24
Elective Modules II (2 out of 4)								
2914 Components of Laser Technology	90	60		2/2/0/0	5		Mo/30	1/24
2915 Physics of Laser-Matter Interaction	90	60		3/1/0/0	5		Mo/30	1/24
2916 Simulation Methods in Additive Manufacturing	90	60		2/1/1/0	5	WS	Mo/30	1/24
2917 Molecular and Cellular Biophysics	90	60		3/1/0/0	5		Mw/120	1/24
1. and 2. Semester total:	1125	675	24	21	60			12/24
	-45	+45	+3					

+/- Sums may vary depending on the selection.

Types of PEP: A = Attestation, w = written, o = oral, WS = Work Sample, LA = Laboratory Attestation, P = Presentation, types of examination: M = Modul Examination, EP(4) = Examination Performance (minimum grade 4), w = written, o = oral, a = alternative, op = other performances, RP = Research Paper, C = Colloquium, MT = Master Thesis, PT = Projekt Thesis

L = Lecture (WSH), S = Seminar/Exercise (WSH), P = Practical Laboratory Course (WSH), T = Tutorial (WSH), PEP = Pre-Examination Performances, EP = Examination Performances, CP = Credit Points, MNo = Modul Number, MC = Module Code, WSH = Weekly Semester Hours, SSP = Self-study Period, CH = Course Hours

Module/ Learning units	SSP Wh	CH total	3. Sem. L/S/P/T	4. Sem. L/S/P/T	CP	PEP	EP	W
2918 Project Management	75	75	2/3/0/0		5	P/15	Mop/RP	1/24
2919 Optical Design/ Micro Optics	75	75	3/2/0/0		5		Mo/45	1/24
2920 Research and Development Project II	180	120			10			2/24
29201 Project Thesis			0/0/7/0				EP4op/PT	2/3*
29202 Tutorial			0/0/1/0				EP4o/30	1/3*
Elective Modules III (2 out of 4)								
2921 Micro- and Nanotechnologies	90	60	2/1/1/0		5		Mw/90	1/24
2922 Physical Technical Instrument Development and Device Construction	90	60	1/1/2/0		5			1/24
2922(T1) Partial Test 1							EP4op/PT	1/2*
2922(T2) Partial Test 2							EP4o/30	1/2*
2923 Current Developments/ Hazard Analysis	90	60			5			1/24
29231 Current Developments			2/1/0/0				EP4o/30	2/3*
29232 Hazard Analysis			0/1/0/0				EP4w/90	1/3*
2924 Biophotonics II - Ultra-short Metrology and Applications in Biophotonics	90	60	2/1/1/0		5	LT	Mo/30	1/24
2925 Master Project	870	30			30			6/24
29251 Master Thesis				0/0/0/2			MT	2/3*
29252 Master Colloquium							EP4op/C60	1/3*
3. and 4. Semester total:	1380	420	26	2	60			12/24

Types of PEP: A = Attestation, w = written, o = oral, WS = Work Sample, LA = Laboratory Attestation, P = Presentation, types of examination: M = Modul Examination, EP(4) = Examination Performance (minimum grade 4), w = written, o = oral, a = alternative, op = other performances, RP = Research Paper, C = Colloquium, MT = Master Thesis, PT = Projekt Thesis

L = Lecture (WSH), S = Seminar/Exercise (WSH), P = Practical Laboratory Course (WSH), T = Tutorial (WSH), PEP = Pre-Examination Performances, EP = Examination Performances, CP = Credit Points, MNo = Modul Number, MC = Module Code, WSH = Weekly Semester Hours, SSP = Self-study Period, CH = Course Hours