

# OTTO-VON-GUERICKE-UNIVERSITÄT MAGDEBURG

Fakultät für Naturwissenschaften



Study and Examination Regulations

for the Master's program

**"Advanced Semiconductor Nanotechnologies"**

from 16.05.2023

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On the basis of § 13 paragraph 1 sentence 1 of the Higher Education Act of the State of Saxony-Anhalt in the version of the announcement of 01 July 2021 (GVBl. LSA 2021, 368, 369), Otto von Guericke University Magdeburg has issued the following study and examination regulations for the Master's program

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## **I. General part**

### **§ 1 Scope**

(1) These study and examination regulations regulate the objectives, content and structure as well as the examinations and the completion of the Master's program Advanced Semiconductor Nanotechnologies of the Faculty of Natural Sciences of the Otto von Guericke University Magdeburg (OVGU).

(2) This Master's program is an on-site, fact-to-face program, consecutive and is assigned to the profile type "research-oriented". It is designed as a full-time study.

(3) In the degree program, there is the possibility of individual part-time study in accordance with the framework regulations for part-time study of the OVGU.

### **§ 2 Objectives of the study programme**

(1) The Master's programme imparts advanced technical knowledge, skills and methods that enable students to carry out independent scientific work, to apply and critically classify scientific findings and to act responsibly. The degree qualifies students for a demanding professional activity and creates the scientific basis for a possible subsequent doctorate.

(2) In the Master's program, students acquire advanced knowledge in several sub-disciplines of semiconductor technology, basic knowledge in two non-technical subjects as well as in-depth knowledge in at least one sub-area of semiconductor technology that is close to the current state of research. The students have the ability to abstract and to think analytically and networked, which enables them to successfully work on questions of research on semiconductor materials, semiconductor manufacturing processes and semiconductor devices as well as complex problems from the practice of the semiconductor industry.

(3) Graduates are prepared for a demanding professional career, e.g. in the semiconductor industry, in research institutions and universities, in public administration, in management consulting or in the IT sector.

### **§ 3 Degree**

After successfully passing the examinations required for graduation, the OVGU awards the academic degree "Master of Science", abbreviated "M. Sc.", for the degree.

## **II. Scope and course of study**

### **§ 4 Admission requirements**

- (1) Requirements for admission to this degree program are the following:
  - a) Proof of a bachelor's degree, a university diploma or a comparable degree from a state or state-recognized university of cooperative education, a master's degree program in a relevant course of study or a relevant course of study in physics or electrical engineering or in a closely related subject completed with a state examination,
  - b) Proof of sufficient knowledge of the English language in accordance with para. 6,
  - c) Submission of a relevant letter of motivation in English. The length of the letter must not exceed 1000 words (printed), in which the personal as well as subject-specific reasons for applying to the Master's program are listed and in which this choice is justified in relation to the career opportunities indicated in the program.
  - d) Proof (score card) of the Graduate Record Examination Test (GRE) in Physics or Chemistry, if the application is from outside the EU,
  - e) Proof of special aptitude for the Master's programme in accordance with paragraphs 2 to 3.
- (2) In order to take into account the special requirements of the degree programme, the previous course of study must have been completed with at least 180 credit points in accordance with para. 1a) and the applicant must have successfully participated in the course-specific internal university selection procedure.
- (3) Only those who have achieved a rank in the ranking list that is sufficient in accordance with the available free study places have successfully participated in the

selection process. The procedure and the evaluation basis of the selection decision are regulated in the statutes for the implementation of the university's internal selection procedure in the Master's program Advanced Semiconductor Nanotechnologies.

- (4) In the case of applicants who are only about to complete a course of study in accordance with § 4 para. 1 and have not yet completed this course of study by the time of application, proof of the relevant degree can be replaced by a complete certificate of grades of all achievements in the relevant course of study up to the time of application, whereby at least 140 credit points must be proven. These applicants without proof of the first professional qualification will be enrolled for a limited period of time, provided that the other requirements are met. The regulations for the organization of the application and admission procedure for Master's degree programs of the OVGU apply in the currently valid version.
- (5) Admission is to be refused if the applicant has definitively failed examinations in the chosen course of study at a university or an equivalent institution of higher education within the scope of the Grundgesetz or is in a corresponding examination procedure.
- (6) The course is conducted in English. Applicants must demonstrate sufficient knowledge of the English language. If the degree according to para. 1 a) was not obtained in a relevant English-language course of study, one of the following certificates is accepted as proof:
  - TOEFL (Test of English as a Foreign Language), at least 550 points (old test procedure), 213 points (computer test procedure since 1998), 79–80 points (internet-based)
  - IELTS (International English Language Testing System), score 6.0
  - Certificate of Proficiency in English B
  - Certificate of Advanced English C

In exceptional cases, the examination board may determine the equivalence of the language certificate.

- (7) Certificates and evidence must be submitted in German or English or in a corresponding translation by sworn translators.

- (8) The examination board decides whether the admission requirements are met.
- (9) Upon admission, the examination board usually announces one or two mandatory courses (so-called harmonization courses I+II), which the student must complete in the 1st semester in order to eliminate existing gaps in knowledge in disciplines that are fundamental for successful studies.

## **§ 5 Duration of study, commencement of studies**

- (1) The program is designed in such a way that it can be completed in the standard period of study of four semesters, including the Master's thesis with the defense.
- (2) Enrollment takes place in the winter semester. The range of courses is geared accordingly.

## **§ 6 Scope of study**

- (1) The study effort is described with credit points (abbreviation CP) according to the European Credit Transfer System (ECTS).
- (2) The study effort consists, among other things, of participation in the courses offered by the modules, the preparation and follow-up of the courses, the independent processing and deepening of the material as well as the proof of the achievements made. One CP corresponds to an effort of 30 working hours. The workload per semester is usually 30 CP and is specified in the appendix to the standard study and examination plan.
- (3) The course has a modular structure. Modules are usually completed with an exam. Examinations must be taken during or at the end of the respective module. A certain number of credit points are awarded for each successfully completed module. A module can consist of different types of courses.
- (4) A total of 120 credit points must be proven for successful completion of the program. In addition to passing the examinations shown in the standard study and examination plan of these regulations and the successful completion of the scientific

project, it is necessary to write a master's thesis including defense. The Master's thesis with Defense corresponds to an expenditure of 30 credit points.

(5) The time frame and the allocation of credit points can be found in the applicable standard study and examination plan.

(6) The programme is designed in such a way that it can be successfully completed within the standard period of study. The module examinations can be taken before the end of the semester specified in the standard study and examination plan, provided that the achievements required for admission to the respective examination have been proven.

(7) The programme concludes with a final thesis, the Master's thesis, and its defence. The Master's thesis as an examination is explained in more detail in §§ 21–24.

## **§ 7 Course structure**

(1) The range of courses includes compulsory modules, elective modules and elective modules. Within the framework of applicable regulations, the lecturers are responsible for determining the subject-specific balanced proportions of the various forms of teaching in their modules.

(2) Compulsory modules are all modules that are required for the successful completion of the course according to these regulations.

(3) Elective modules are all modules that students have to select from a certain number of modules in accordance with these regulations. They make it possible to pursue individual inclinations and interests as well as to take into account subject-specific requirements of the students' future field of activity. The list of elective modules will be changed according to the development and availability of teachers and adapted to the range of courses offered by the faculty. At the request of the student to the examination board, other modules from other faculties of the OVGU can also be recognized as elective modules.

(4) Elective modules are all modules that students choose to take from OVGU modules in addition to the compulsory and elective modules. Students can take an



exam in the elective modules. The result of this examination is not taken into account when determining the overall grade.

### Types of courses

- (1) Lectures, exercises, seminars, laboratory courses, colloquia, excursions and scientific projects, also in combinations, are carried out.
- (2) Lectures impart basic technical and methodological knowledge in a coherent and systematic presentation.
- (3) Exercises serve to deepen the understanding as well as the application of the lecture material by solving tasks.
- (4) In seminars, students familiarize themselves with a selected, advanced topic on the basis of specialist literature and present their results in a lecture.
- (5) Laboratory courses serve to acquire advanced skills for the planning, execution and evaluation of experiments as well as the practical application, consolidation and deepening of already acquired knowledge.
- (6) In colloquia, teachers and learners engage in in-depth scientific discussion on selected issues.
- (7) Excursions serve as a point of view and information as well as contact with local practice.
- (8) Scientific projects within the framework of the "Introduction to Research" serve to develop skills for independent scientific work by working on an individually specified task under the guidance of a supervisor.

## **§ 8 Academic Advisory Service**

Subject counselling by an expert advisor from the faculty can be used at any time and seems particularly appropriate in the following cases:

- solving problems at the beginning of studies,
- Choice of non-proposed eligible modules,
- Studying with a child, caring for close relatives or similar life circumstances,
- significant exceeding of the standard period of study,
- failed examinations or unfulfilled examinations,
- change of course of study or university,
- Study abroad, part-time study and individual curriculum design.

### **III. Examination**

#### **§ 9 Examination board**

(1) For the organization of the examinations and for the performance of the tasks assigned by these regulations, the Faculty of Natural Sciences forms an Examination Board. It consists of five members; the chair, the deputy chair and another member are appointed from the group of university lecturers, one member is appointed from the status group pursuant to § 60 sentence 1 no. 2 HSG LSA (academic staff and teachers for special tasks) and one member from the status group of students.

(2) The Examination Board ensures that the provisions of these regulations are complied with and ensures that the examinations are carried out properly. It can make suggestions and proposals for the further development of these rules. Particular importance should be given to the feasibility of studying, in particular compliance with the standard period of study and the examination deadlines. In particular, it is responsible for deciding on appeals against decisions taken in examination proceedings. The board may revocably transfer the performance of his duties to the chair person for all normal cases; this does not apply to decisions on appeals. The chair person prepares and implements the resolutions of the Examination Board and reports to the Examination Board on an ongoing basis on his or her activities.

(3) The Examination Board has a quorum if the majority of its members, including at least two members from the group of university lecturers, are present. It decides by

simple majority. In the event of a tie, the vote of the chair person shall be decisive, and in his or her absence, that of the deputy.

(4) The term of membership of the student member is one year, that of the other members two years. Extension of the term of membership is possible.

(5) The members of the Examination Board have the right to participate in the conduct of the examinations as observers.

(6) The meetings of the Examination Board are not open to the public. The members of the Examination Board are subject to official secrecy. If they do not work in the public service, they must be bound to secrecy by the chair person.

(7) To support the work of the Examination Board, there is an examination office at the faculty.

## **§ 10 Examiners and assessors**

(1) The Examination Board appoints the examiners and the assessors. Only professors and junior professors of the OVGU may be appointed as examiners. This also applies to private lecturers, unscheduled (apl.) Professors, insofar as they work full-time at the OVGU and perform the tasks of a professorship in teaching and research, research assistants or teachers for special tasks, insofar as they perform teaching tasks, lecturers or persons experienced in professional practice and training. In addition, honorary professors may be appointed as examiners. As a rule, examinations may only be evaluated by persons who themselves have at least the qualification to be determined by the examination or are equally qualified.

(2) Only those who have at least a master's degree in physics or electrical engineering or a comparable degree in engineering may be appointed as assessors.

(3) Students can nominate examiners for oral examinations and for the Master's thesis. The proposal does not create a legal claim. The Examination Board ensures that the names of the examiners are announced to the students in due time.

- (4) Two examiners must be appointed for the evaluation of written examinations, provided that passing the examination is a prerequisite for continuing the studies.
- (5) For the evaluation of oral examinations, two examiners or one examiner must be appointed by the examination board in the presence of an assessor.
- (6) The examiners are independent in their examination activities.
- (7) For the examiners and assessors, § 10 para. 6 applies accordingly.

### **§ 11 Approval of periods of study, study and examination achievements**

- (1) The Examination Board decides on the approval of periods of study, study and examination achievements in accordance with § 13 para. 2 HSG LSA upon written application. Students must submit the original or certified documents required for approval by the end of the second semester at the latest. Otherwise, an approval is excluded. The approval of an examination may be rejected if there is already an examination legal relationship for this examination at other universities offering this degree programme or if an examination has been definitively failed.
- (2) In accordance with the provisions of the Lisbon Convention (Art. III) the approval of periods of study, study and examination achievements must take place, provided that there are no significant differences in quality, level, learning outcome, scope and profile between the knowledge acquired and the knowledge to be acquired. Instead of a schematic comparison, an overall view and evaluation must be carried out.
- (3) The burden of proof in the event that periods of study, study and examination achievements do not meet the relevant requirements for recognition belongs to the Examination Board. The responsibility for providing sufficient information belongs to the applicants. Where mutually applicable, the European Credit Transfer System (ECTS) shall be taken into account in the assessment.
- (4) If achievements are approved, the grades – as far as the grading systems are comparable – and the credit points must be taken over and included in the calculation of the overall grade. It is possible for a module completed at another university to be approved as a partial achievement. In this case, the Examination Board decides on

additional study and examination achievements still to be completed that correspond to the scope of the module to be completed. In the case of incomparable grading systems, the note "passed" is included. The approval is marked in the certificate.

(5) In the case of comparable grading systems, the grades are taken over and included in the calculation of the overall grade.

## **§ 12 Records of Achievement**

(1) As a prerequisite for admission to a module examination, records of achievement may be required.

(2) Records of achievement are marked as such in the standard curriculum and examination plan. The conditions for their acquisition are to be announced by the lecturer at the beginning of the course.

## **§ 13 Examinations**

(1) The following types of examinations are possible:

- a) Written examination under supervision/written exam (K) (para. 2)
- b) Oral examination (M) (para. 3)
- c) Achievements in the exercise system of a course (ÜL) (para. 4)
- d) Seminar lecture (SV) (para. 5)
- e) Final meeting (AG) (para. 6)

(2) In an exam, students should prove that they can properly work on tasks from the area of the module to which the exam paper relates in a limited time and with limited aids and find suitable solutions. A list of approved aids must be announced at the same time as the announcement of the examination date. The criteria for the examination evaluation should be disclosed.

(3) In an oral examination, the student should prove that he or she has sufficient knowledge in the examination area, recognizes correlations and is able to discuss special questions in these contexts. In the framework of the oral examination, tasks may also be set for written treatment to an appropriate extent, provided that this does not cancel out the oral character of the examination. An oral examination is taken by

two/more examiners (collegial examination) or in front of an examiner in the presence of an assessor. The assessor is to be heard before the grades are determined. The main subjects of the examination and the evaluation of the examination performance must be recorded in a protocol. It must be signed by all examiners or examiners, and by the assessor, respectively. The grade must be announced to the student after the oral examination.

(4) Achievements in the exercise system of a course serve to prove that the students can apply the methods and knowledge imparted in the lecture to dedicated tasks. This can be done through the independent successful solution of regularly scheduled exercises, a presentation, a written term paper, a technical discussion with the lecturer, written performance assessments or combinations thereof.

(5) In a seminar lecture, the students are asked to present a subject-specific topic in which they have independently familiarized themselves in a lecture. An additional written elaboration may be requested.

(6) In the final discussion form of examination, students should show by contributing to the discussion in the group that they recognize the correlations of the topic dealt with in the module and are able to classify questions in these contexts.

(7) The examinations ÜL and AG are only graded as passed or failed. The examinations to be taken are specified in the module descriptions and are announced at the beginning of the courses.

(8) Examinations under the responsibility of other faculties of the OVGU are subject to the regulations of these faculties with regard to preliminary achievements, form, duration and evaluation.

#### **§ 14 Compensation for disadvantages, protective provisions**

(1) If students credibly demonstrate by means of a medical certificate or by presenting a disability card that they are unable to take examinations in whole or in part in the prescribed form due to a prolonged or chronic illness or disability, they may be granted a compensation for disadvantages by the Examination Board, insofar as this is necessary to establish equal opportunities.

For this purpose, processing periods may be extended to an appropriate extent or the examination may be permitted in another form. The compensation for disadvantages must be applied for in writing to the examination board and should be submitted for examination at the latest with the notification.

(2) The protective provisions in accordance with the Maternity Protection Act and in accordance with the deadlines of the Federal Child-Raising Allowance Act on parental leave are to be taken into account appropriately in the application of these study and examination regulations, in particular when calculating deadlines, and their use is to be made possible.

(3) The protective provisions in accordance with the Care Leave Act and in accordance with the Family Care Leave Act must also be taken into account appropriately in the application of these study and examination regulations, in particular in the calculation of periods for periods of actual care of a close relative, and their use must be made possible.

(4) Students who have been granted leave of absence due to family obligations can voluntarily complete coursework and examinations during the leave of absence. Upon written application addressed to the examination board, it is possible to repeat a failed examination during the leave of absence.

### **§ 15 Oral examinations open to the public**

Students of this degree programme who have not yet successfully completed the respective examination can be admitted as listeners for oral examinations, provided that they are not registered for this examination themselves. This does not extend to the consultation and announcement of the examination result to the students. At the request of a student to be examined, the audience shall be excluded in accordance with sentence 1.

### **§ 16 Admission and deadlines for course-related examinations**

(1) Admission to the course-related examinations can be granted to those who are enrolled in the OVGU degree program.

(2) Students apply for admission to the course-related examinations or the repeat examinations within the period specified by the Examination Board and in the specified form. In the event of non-compliance with the registration deadline, admission to the examination is excluded, unless the Examination Board decides otherwise at the written request of the student. With a registration for an examination, the application for admission is submitted. Proof of previous examinations must be enclosed, unless corresponding documents are available at the OVGU.

(3) Module examinations take place during the course of study, i.e. usually during or directly after completion of the course(s). The application for admission must be submitted for each examination at least two weeks before the examination date. Examination dates will be announced by the responsible examination office at least four weeks before the start of the examinations or, in the case of oral examinations, can also be arranged directly with the responsible examiner. It must be ensured that students do not have to take several written examinations on the same day.

(4) The application can be withdrawn at least one week before the respective examination date. In the event of withdrawal, admission to a later examination date must be reapplied for in due time.

(5) The Examination Board decides on admission. It is to be failed if:

- a. the admission requirements are not met, or
- b. the examination was finally "failed" or
- c. is definitively considered "failed".

(6) The examinations for the compulsory modules and elective modules in the degree programme must be taken by the end of the semester specified in the standard study and examination plan. If this period is exceeded by more than one year, the examinations of these modules that have not yet been taken are considered to have been failed for the first time. This does not apply if the student proves that he or she is not responsible for exceeding the deadline.

(7) If the student can credibly demonstrate that he or she is not responsible for the delays mentioned in paragraphs 6 and 7, the examination board may extend these deadlines upon request, subject to conditions.



## § 17 Evaluation of examination performance and formation of module grades

(1) The individual examination performance is evaluated by the respective examiners. In the case of written examinations, the assessment should be announced no later than four weeks after the examination.

(2) The following grades are to be used for the evaluation of examinations:

Note	Predicate	
1	Very good	an excellent performance
2	Good	a performance that is above the average requirements
3	Satisfying	a performance that meets average requirements
4	Sufficient	a performance that, despite its shortcomings, still meets the requirements
5	Insufficient	a performance that no longer meets the requirements due to significant deficiencies

For differentiated evaluation of the examination performance, individual grades can be raised or lowered by 0.3 to intermediate values; grades 0.7; 4.3; 4.7 and 5.3 are excluded.

If examinations are not to be graded, then the assessment is "successfully completed" or "failed".

(3) A module examination is passed if all required examinations have been graded at least as "sufficient".

- a) If a module examination consists of only one examination, the module grade corresponds to the grade of the examination.
- b) If a module examination consists of several examinations, the module grade is the arithmetic mean of the grades of the examinations in the module, truncated to one decimal place after the decimal point, possibly weighted, deviating from the definition in paragraph 2. The weightings for the individual modules can be found in the standard study and examination plan or they result from the ratio of the proportions of credit points to the total number of credit points for the corresponding module.

- c) If the examination performance is evaluated by several examiners or examiners, it is passed if the arithmetic mean of the individual grades determined by the examiners, truncated to two decimal places after the decimal point, is at least "sufficient" (4.00). If there are two whole grades or more between the assessments, another examiner or examiner will be consulted. The grade of the examination performance (overall grade) is then derived from the arithmetic mean of all grades.

When forming a module grade according to the average, only the first decimal place after the decimal point is taken into account; all other digits are deleted without rounding. The predicate is:

With an average grade	Predicate
up to and including 1.5	Very good
1,6–2,5	good
2,6–3,5	satisfying
3,6–4,0	sufficient
starting from 4.1	insufficient

- (4) The credit points are earned after passing the module examination. If a module is completed by examinations in accordance with § 14 (4) or (6), the student will receive the credit points upon presentation of the required evidence.

### **§ 18 Repetition of course-related examinations**

- (1) Module examinations that have not been passed or are considered failed can be repeated twice. This usually results in a first attempt for a module examination, if it has not been passed or is considered failed, a first replicate attempt and, if this has not been passed or is considered failed, a second replicate attempt.

- (2) The first replicate examination must be taken at the next possible examination date after failing the examination. The second replicate examination must be taken within six months of failing the first replicate examination at the latest. The deadlines do not apply if the student has been granted a grace period for special reasons for which he or she is not responsible.

For the replicate examination, a new registration in accordance with § 16 is required. Section 17 shall apply accordingly to the valuation.

(3) Unsuccessful attempts to take a module examination in the enrolled course of study at a university within the scope of the Grundgesetz are to be counted towards the repetition possibilities.

(4) The repetition of a passed examination is not permitted.

(5) If the student has lost the right to take examinations, the desired Master's degree in the chosen course of study is considered as not passed.

### **§ 19 Additional tests**

(1) Students can also take examinations in modules other than those prescribed in the applicable standard study and examination plan.

(2) The module and the result of the additional examinations will be included in the certificate or certificates at the request of the student at the examination office. The results of additional examinations are not included in the calculation of average grades and the determination of the overall grade.

### **§ 20 Default, withdrawal, deception, breach of order**

(1) A module examination is considered to be "insufficient" if the student without good reason:

- fails to appear on an examination date that is binding on him/her,
- withdraws from the examination after the start of an examination,
- fails to carry out the examination or its repetition within the period specified for this purpose,
- in the case of a written examination (with the exception of written examinations), content from third-party work has been taken over without specifying the source.

(2) The reason given for the withdrawal or failure to perform the examination must be reported to the Examination Board immediately in writing and made credible. If this is not done, the examination performance is to be graded as "insufficient".

If the student is unable to attend due to illness, a medical certificate must be submitted. If the certificate is prevented from being submitted on time due to illness, the Examination Office must be informed of this either in writing or in electronic form by e-mail by the day of the examination. In this case, the certificate must be submitted to the Examination Office within three working days after the day of the examination and the medical determination of the case of illness. Exceptions are decided by the Examination Board.

If the Examination Board recognizes the reason asserted, the examination must be completed on the next regular examination date, unless the committee decides on a deviating regulation.

- (3) If the student tries to influence the result of an examination by cheating or using unauthorised aids, the examination in question is deemed to have been graded as "insufficient".

Anyone who disrupts the proper course of the examination date may be excluded from continuing the examination by the examiner. In this case, the examination performance is to be graded as "insufficient". In serious cases, the Examination Board may exclude the student from taking further examinations.

- (4) The student is obliged to complete his/her examination independently and without inadmissible outside help and in compliance with the general principles of good scientific practice. He/she must submit a declaration of independence as part of the submission of the thesis.

- (5) If the deadline for an examination is not met for a reason for which the student is responsible, it is considered to be "insufficient". Paragraph 2 shall apply *mutatis mutandis*.

- (6) Disruptions in the preparation to the examination or in the course of the examination must be reported immediately if and as soon as the report is possible and reasonable. Unconditional participation in an examination in the knowledge of relevant impairments excludes the subsequent invocation of such impairments.

#### **IV. Master's Degree**

##### **§ 21 Admission to the Master's thesis**

- (1) Only those who are enrolled in the Master's program Advanced Semiconductor Nanotechnologies at the OVGU and have achieved at least 60 credit points will be admitted to the Master's thesis.

(2) Students apply for admission to the Master's thesis in writing to the Examination Board.

## **§ 22 Issue of the topic and submission of the Master's thesis**

(1) The Master's thesis is intended to show that the student is able to independently work on a task from the subject area within a specified period of time. The topic must be issued in good time so that the Master's thesis including defense module can be completed within the standard period of study.

(2) The topic of the Master's thesis is issued and supervised by a person authorized to examine in accordance with § 11 para. 1. With the approval of the Examination Board, the topic may also be supervised by a person working scientifically in a company or research institution who does not belong to the above-mentioned group of persons. In the following, this person will be treated accordingly as an authorized examiner.

(3) Students should be given the opportunity to submit suggestions for the topic and task of the Master's thesis. The student's suggestion should be complied with as far as possible. It does not constitute a legal claim. The chair person of the Examination Board ensures that the student receives a topic for a Master's thesis within a reasonable period of time.

(4) The Examination Office checks the admission requirements in accordance with § 21 before handing out the topic to the student. The processing time begins with the filed issuance of the assignment, about which the Examination Office informs the first examiner.

(5) The time from the issue of the topic to the submission of the Master's thesis (processing time) is six months.

(6) In justified exceptional cases, e.g. in the event of proven illness of the student, the processing time of the Master's thesis is extended by a maximum of three months. An attempt terminated by exceeding this extension period is not counted towards the repetition possibilities.

(7) The theme can only be returned once and only within the first two months of the processing time.

(8) When submitting the Master's thesis, students must affirm in writing that they have written the thesis independently and have not used any sources and aids other than those indicated and that the thesis has not already been evaluated as a thesis in another degree program.

(9) The Master's thesis must be submitted as 3 copies to the Examination Office of the Faculty in written and tied form by the deadline, and the date of submission must be recorded. If it is not delivered on time, it is considered to be "insufficient". If the deadline falls on a weekend or a public holiday, the next working day is the last deadline. The additional submission of the work in digitally readable form is recommended.

(10) The student can submit an application for an extension of the submission deadline to the examination board up to three weeks before the deadline after the supervisor has commented.

### **§ 23 Evaluation of the Master's thesis and defense**

(1) The Master's thesis should be reviewed in writing within four weeks of submission and evaluated in accordance with § 17 para. 2. The evaluation procedure, including the defense, should not exceed six weeks.

(2) For the evaluation of the work, two authorized examiners are to be appointed as reviewers, one of whom supervised the thesis. One of the reviewers must be a member of the Institute of Physics (IfP) of the Faculty of Natural Sciences; one must be a university lecturer.

(3) If both reviewers grade the Master's thesis with at least "sufficient", the defense takes place. If both reviewers grade the Master's thesis as "insufficient", the Master's thesis as a whole is not passed and no defense takes place. If one of the reviewers grades the thesis as "insufficient" and the other person grades it at least as "sufficient", the Examination Board will obtain a third review from a person authorized to examine the faculty. If the third expert opinion grades the thesis as "insufficient", the Master's

thesis as a whole is not passed and no defense takes place. If the third report evaluates the work as at least "sufficient", only the two positive reports will be taken into account.

(4) For the defense, the Examination Board forms an examination committee, which, in addition to the reviewers, includes another person authorised to examine the faculty from the Institute of Physics and an expert assessor.

(5) In the defense, the student should prove that he or she is able to defend the results of the work from the independent scientific processing of a subject area in a technical discussion. The defense takes about 50 minutes. The student should present the topic of the Master's thesis and the associated problems and results in about 20 minutes (presentation) and answer questions in this regard. He or she can inspect the expert opinions on his or her master's thesis before the defense.

(6) The appointed examiners set a grade for the defense. If no consensus can be reached, the arithmetic mean of the grade proposals is formed. Section 17 shall apply *mutatis mutandis* to the evaluation of the defense.

(7) The defense is passed if it has been rated at least "sufficient" by the examiners.

(8) The overall grade of the Master's thesis is made up of one third each of the expert opinions and the grade of the defense.

## **§ 24 Repetition and defense of the Master's thesis**

(1) The Master's thesis can be repeated once if it has been graded "insufficient" or is considered to be "insufficient". The new topic of the Master's thesis will be issued within a reasonable period of time, usually within three months. A return of the topic in the event of a repetition of the Master's thesis is only permitted if this option has not already been used when the first thesis was written.

(2) A second repetition is not permitted. The repetition of a passed work is excluded.

(3) The defense of the Master's thesis, if it has been graded "insufficient" or is considered "insufficient", can be repeated twice within two months.

(4) The repetition of a passed defense of the Master's thesis is excluded.

### **§ 25 Overall result of the Master's degree**

(1) The Master's degree is passed if all compulsory and elective modules required according to the standard study and examination plan and the Master's thesis with the defense have been graded with at least "sufficient".

(2) To calculate the overall grade of the Master's degree, the graded course-related examinations and the Master's thesis with the defense are used. Each grade is multiplied by a weight factor that corresponds to the relative proportion of the corresponding credit points of the module (see study and examination plan) to the total number of points of all graded modules. The overall grade is then calculated as the arithmetic mean of the weighted module grades, deviating from the definition in § 17, paragraph 2. § 17, paragraphs 3 and 4 apply accordingly. When forming the overall grade, only the first digit after the decimal point is taken into account;

(3) In the case of outstanding performance (grade point average not worse than 1.2; Master's thesis 1.0) is awarded the title "passed with distinction".

(4) The Master's degree is definitively failed if a study-related examination or the Master's thesis with the defense has not been passed or is considered failed and there is no longer any possibility of repeating it.

### **§ 26 Certificates and examination records**

(1) A certificate of successful completion of studies must be issued immediately, if possible within four weeks. The certificate bears the date of the day on which the last examination was taken. It must be signed by the chairperson of the examination board and stamped with the seal of the OVGU. The grades of the examined modules, the grade of the Master's thesis and the overall grade are included in the certificate. Furthermore, the certificate contains the topic of the Master's thesis as well as – at the



request of the examinee – the result of the examinations of additional modules and the duration of study required until completion of the course.

(2) With the certificate, students receive a Diploma Supplement.

(3) If the Master's degree is definitively failed or is deemed to have been definitively failed, the Examination Board will issue the student with a written notification of this with a certificate of grades for the examinations completed and instructions on how to appeal. This decision must be announced to the student(s).

(4) If students leave the OVGU or change their degree programme, they will be issued with a certificate upon application containing the examinations they have taken and their evaluation.

### **§ 27 Document (Certificate)**

(1) With the certificate, students receive the document with the date of the certificate. In it, the course of study and the awarding of the Master's degree are confirmed.

(2) The certificate is signed by the Dean of the Faculty of Natural Sciences of the OVGU and stamped with the seal of the OVGU.

(3) Upon request, the document will be translated into English.

## **V. Final provisions**

### **§ 28 Inspection of the examination files**

(1) Upon application to the Examination Board, students will be granted access to the written examination papers, the examiners' assessments and the examination protocols after completion of a module examination or the follow-up work including defense, in each case within a cut-off period of one month after the announcement of the result.

(2) After the certificate has been issued, a written application must be submitted to the Examination Board within a preclusive period of three months. The chairperson of the Examination Board shall determine the place and time of inspection.

## **§ 29 Invalidity of examinations**

- (1) If a student has cheated in an examination and this fact only becomes known after the certificate has been issued, the Examination Board may declare the examination failed in whole or in part.
- (2) If the requirements for admission to an examination were not fulfilled without the intention of deception, and if the fact becomes known only after the certificate has been issued, this deficiency is remedied by passing the examination. If students have intentionally obtained admission wrongly, the Examination Board decides on the withdrawal of illegal administrative acts in compliance with the statutory provisions. The students concerned must be given the opportunity to discuss the matter before the Examination Board before making a decision.
- (3) The incorrect certificate shall be confiscated and replaced by a correct certificate or a certificate in accordance with § 26.

## **§ 30 Decisions, appeal procedure**

- (1) All decisions made in accordance with these examination regulations and constituting an administrative act must be justified in writing, provided with instructions on legal remedies and announced. An appeal procedure is taking place against the decision.
- (2) The Examination Board decides on an objection. If the objection is directed against an assessment, the Examination Board forwards the objection to the examiner concerned for review. If the evaluation is changed in accordance with the appeal, the Examination Board will remedy the objection. Otherwise, the Examination Board will only review the decision to determine whether:
  - a) the examination procedure has been properly conducted,
  - b) the examiner assumed non-valid facts,
  - c) generally applicable evaluation principles have been observed,
  - d) the examiner has been guided by irrelevant considerations.

### **§ 31 Withdrawal/revocation of academic degree**

The withdrawal or revocation of the Master's degree is carried out in accordance with § 21 HSG LSA.

### **§ 32 Public announcements of the Examination Board**

Decisions and other measures to be adopted in accordance with these examination regulations, in particular admission to the examination, refusal of admission, the registration periods and the examination dates and deadlines as well as the examination results shall be announced to the university public in a manner customary in the local area. In doing so, data protection regulations must be observed.

### **§ 33 Validity**

These regulations apply to all students who will be enrolled in the Master's program Advanced Semiconductor Nanotechnologies from the winter semester 2023/24.

### **§ 34 Coming into force**

These study regulations come into force on the day following their publication in the Official Announcements of the OVGU.

Issued on the basis of the decision of the Council of the Faculty of Natural Sciences of 04.04.2023 and the opinion of the Senate of the OVGU of 26.04.2023.

Magdeburg, the 16.05.2023

Prof. Dr.-Ing. Jens Strackeljan  
Rector of Otto von Guericke University Magdeburg

## Standard Curriculum and Examination Plan Master's Degree Program Advanced Semiconductor Nanotechnologies

		Specialization phase						Research phase						Examination schedule			
		1st semester			2nd semester			3rd semester			4th semester			SWS	CP	LN	PF
		19		30	17		30	13		30	0		30	49	120		
No	Compulsory modules <sup>1</sup>	SWS	Kind	CP	SWS	Kind	CP	SWS	Kind	CP	SWS	Kind	CP				
1	Entrance Harmonization Course <sup>1</sup> 1/2	3	V+Ü	5										3	5		M,K <sup>5</sup>
2	Entrance Harmonization Course <sup>1</sup> 2/2	3	V+Ü	5										3	5		M,K <sup>5</sup>
3	Solid-state physics	3	V+Ü	5										3	5		M,K <sup>5</sup>
4	Semiconductor quantum structures				3	V+Ü	5							3	5		M,K <sup>5</sup>
5	Semiconductor Devices I				3	V+Ü	5							3	5		M,K <sup>5</sup>
6	Semiconductor Devices II							3	V+Ü	5				3	5		M,K <sup>5</sup>
7	Semiconductor Process Technologies				2	V	5							2	5		M,K <sup>5</sup>
8	Advanced semiconductor characterization				3	V+S	5							3	5		M,K <sup>5</sup>
9	Advanced electronic circuits							3	V+Ü	5				3	5		M,K <sup>5</sup>
10	Machine learning	4	V+Ü	5										4	5		M,K <sup>5</sup>
11	Cleanroom lab course				3	P	5							3	5	*	ÜL
12	Academic Skills Development							4	S	5				4	5	*	SV
13	Introduction to Research								Wip	10				0	10	*	SV
14	Master's thesis												30	0	30		
	<b>Compulsory electable modules<sup>3</sup></b>													<b>6</b>	<b>10</b>		
15	Physical/Technical Module 1	3	V+Ü	5										3	5		M,K <sup>5</sup>
16	Physical/Technical Module 2				3	V+Ü	5							3	5		M,K <sup>5</sup>
	<b>Non-technical electable module<sup>4</sup></b>													<b>6</b>	<b>10</b>		
17	Non-technical module 1	3	V+Ü	5										3	5		M,K <sup>5</sup>
18	Non-technical module 2							3	V+Ü	5				3	5		M,K <sup>5</sup>

- 1) Enrollment also possible in other semesters
- 2) Course is determined by the selection committee
- 3) Elective modules can be found in the module handbook
- 4) Non-technical electives should not be chosen from the fields of physics/electrical engineering/engineering/computer science
- 5) The form of the module examination will be announced by the lecturer at the beginning of the course

### **Legend for the standard study and examination plan**

SWS – Semester hours per week

V – Lecture

Ü – Exercise

S – Seminar

CP – Credit Points

LN – Proof of performance (mandatory, if indicated by the \* symbol)

PF – Form of examination

Type – Type of course

P – Lab course

Wip – Scientific project

M – Oral examination

K – written exam (Klausur)

ÜL – Exercises in the performance system of the course

SV – Seminar presentation