

**Examination Rules**  
**Degree Programme of Mechatronics & Robotics (Master of Engineering)**  
**Departments of Electrical Engineering and Mechanical Engineering**  
**at the Schmalkalden University of Applied Sciences**

**as of February 12, 2019**

The Schmalkalden University of Applied Sciences adopts the following Examination Rules for the Master's Programme of Mechatronics & Robotics in accordance with §§ 3 (1), 38 (3) of the Thüringer Hochschulgesetz<sup>i</sup> as of May 10, 2018 (GVBl<sup>ii</sup> p. 149), last amended by Art. 128 of the Act as of December 18, 2018 (GVBl. P. 731), in conjunction with §§ 16 (1) S. 2 N° 1, 21 (1) S. 4. N° 4, 22 (3) of the Bylaws of the Schmalkalden University of Applied Sciences as of April 11, 2019 (Thüringer Staatsanzeiger<sup>iii</sup> N° 18/2019, p. 807). The Council of the department of Mechanical Engineering adopted the Examination Rules on July 5, 2017. The Council of the department of Electrical Engineering adopted the Examination Rules on October 4, 2017. The Central Academic Commission approved the Examination Rules on December 12, 2018. The President of the Schmalkalden University of Applied Sciences authorised the Rules by decree on February 12, 2019.

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**§1**

**Scope of application, terminology**

- (1) These Examination Rules, which have been compiled in accordance with § 55 of the ThürHG, apply to the degree programme of Mechatronics & Robotics at the departments of Electrical Engineering and Mechanical Engineering of the Schmalkalden University of Applied Sciences, which leads to the degree of Master of Engineering.
- (2) Any denomination of status and job title in these Examination Rules shall refer to male and female.

**§2**

**Standard time to degree, comprehension of academic performance**

- (1) The standard time to degree is three semesters. They divide into two academic semesters, which include one project task and the exams, and one academic semester to write the Master's Thesis. Any leave of absence in accordance with § 9 of the Immatrikulationsordnung<sup>iv</sup> of the Schmalkalden University of Applied Sciences shall be disregarded.
- (2) There are 90 ECTS credit point to be acquired.

**§ 3  
Structure of exam**

- (1) The Master's Exam consists of module exams and one project task as well as the modules Master's Thesis and Colloquium.
- (2) Module exams will be conducted in the course of study and in the form of exam performances.
- (3) Exam performances comprehend any individual and specific procedure of examination (written or oral exam). Any exam performance will be assessed and graded according to § 7.
- (4) Advance exam performances may be required as a condition for achieving a grade for the module. Generally, any advance exam performance is to be achieved in the form of laboratory, confirmation of construction, project task, training task or written exam. Any advance exam performance is assessed and can be graded according to §7.
- (5) Any advance exam performance which is required according to (4) is defined in the module descriptions. The students shall be given notice of such descriptions at the commencement of lectures of the respective semester.

**§ 4  
Periods**

Module exams are to be taken within the examination periods as defined by the President.

**§ 5  
General requirements for admission**

- (1) Admission to the Master's degree programme of Mechatronics & Robotics at the Schmalkalden University of Applied Sciences shall be granted if the candidate achieved the degree of Bachelor of Science or Bachelor of Engineering or any equivalent degree in engineering in a relevant discipline with a score of at least 210 ECTS credit points and a total grade of at least 2.5. The completed programme must comprehend the following basic modules with the respective values as listed:

<b>Subject field</b>	<b>CP</b>
Mathematics	10
Physics	10
Other engineering and natural science modules (List to be provided with application form)	90
<b>Total</b>	<b>110</b>

- (2) Proof of a ToEFL score of 550 points (paper-based) or rather 213 points (computer-based) or rather 79 points (Internet-based) must be provided in order to be admitted to our degree programme. This shall not apply to native speakers and graduates of a degree programme which was completed primarily in English.
- (3) All candidates who have obtained a degree of a programme at a university outside the jurisdiction of the German Basic Law can be admitted to our Master's degree programme upon detailed assessment and review of the technical orientation of the completed programme, the level of potential equivalence of the degree as well as the final result. § 11 (1) applies accordingly. The grounds for the decision are to be entered into the records. The same shall apply if the Examination Board attests technical qualification in individual cases for candidates who do not fulfil the requirements as set out in (1).
- (4) Only such student is allowed to attend any module exam who has been enrolled for the Master's degree programme of Mechatronics & Robotics at the Schmalkalden University of Applied Sciences for the whole duration of the semester preceding the respective module exam.

- (5) Only such student will be admitted to a specific module exam who has registered for that module exam at the Central Examination Office during the two weeks' registration deadline, which will have been announced by notice on the notice board. Deregistration is possible at the Examination Office until the end of the registration period. Admission to a module exam may only be denied
1. if the prerequisites as defined in (1) and (2) are not fulfilled or
  2. if the candidate did finally not pass the Master's Exam in the chosen degree programme neither at another university or if the candidate is currently in an open examination procedure within the chosen degree programme or
  3. if the candidate failed to meet the registration deadline for the respective exam performance.

## **§ 6 Exam performances**

- (1) The candidate shall proof by means of exam performances that they are capable to complete tasks and redact subjects employing common methods of the respective exam subject within a limited period of time and with limited resources.
- (2) Exam performances can be delivered in
- a) written
  - b) oral
  - c) or alternative form.
- (3) The time granted to perform the individual written exam of a subject is determined by the amount of credit points (ECTS) for the respective module. In general, the time granted for a written exam performance is 120 minutes at 5 ECTS.
- (4) Any written exam may not primarily consist of multiple choice questions.
- (5) Oral exams will be held in the form of an individual exam before at least two examiners (panel of examiners) or before one examiner and one expert assessor. The events of the exam are to be recorded in the minutes. The time granted for the oral exam is at least 15 minutes, maximum of 45 minutes.
- (6) Alternative exam performance may comprise written project tasks, concept designs, models, presentations or a combination of all of them.
- (7) The candidate is allowed to deliver any respective exam performance within a prolonged period of time, or to deliver equivalent exam performance in another form, if they credibly show that they wholly or partially are not capable to deliver the respective exam performance in the scheduled form because of long-term or persisting physical impairment or illness. In that case, it may be required to submit a medical certificate. The same applies to any advance exam performance.

## **§ 7 Assessment of exam performances and calculation of grades**

- (1) The grades for the individual exam performances will be determined by the examiners. The following scheme will be applied to the assessment of exam performances:

1 = sehr gut	= (very good) excellent performance
2 = gut	= (good) a performance which is highly above average
3 = befriedigend	= (satisfactory) score which corresponds to average performance
4 = ausreichend	= (sufficient) a performance which shows deficiencies, but still fulfils the requirements
5 = nicht ausreichend	= (not sufficient) a performance which does not fulfil the minimum requirements because of significant deficiencies

In order to provide for a more specific assessment of exam performances, the individual grade can be raised or reduced by 0.3. The grades 0.7, 4.3, 4.7 and 5.3 are excluded.

- (2) If advance exam performances are graded, the assessment scheme as outlined in (1) shall apply. Such grade, and in the event of several graded advance exam performances the arithmetic average of the individual grades, shall enter into the grade of the module exam by one third. Any advance exam performance and exam performance must achieve a grade of at least "ausreichend" (sufficient).

- (3) The final grade is calculated according to § 19. Only the first decimal digit will be taken into account; all other decimal digits will be disregarded with no rounding off or rounding up. The final grade reads as follows:

to an average of up to and including 1.3	= ausgezeichnet (excellent)
to an average of 1.4 up to and including 1.5	= sehr gut (very good)
to an average of 1.6 up to and including 2.5	= gut (good)
to an average of 2.6 up to and including 3.5	= befriedigend (satisfactory)
to an average of 3.6 up to and including 4.0	= ausreichend (sufficient)

### **§ 8**

#### **Omission, default, dishonesty, violation of rules**

- (1) The exam performance will be graded with "nicht ausreichend" (5.0 - not sufficient) if the candidate fails to appear at a binding date of examination without any substantiated reason or if they default from any exam without any substantiated reason. The same applies if they fail to deliver the written exam performance within the determined time for the exam.
- (2) The reason asserted for the omission or default must be substantiated and credibly shown in written form before the respective Examination Board immediately. A medical certificate - and in case of doubt a certificate of a public health officer - may be requested if the candidate claims to be sick or in the event of sickness of a dependent child or relative in need of care. The Schmalkalden University of Applied Sciences will bear the costs for such certificate. A new date will be set if the reason brought forward is allowed.
- (3) If the candidate tries to manipulate the result of their exam performance by means of dishonesty, by carrying-along or using resources which are not admitted to the exam, the respective performance will be graded with "nicht ausreichend" (5.0 - not sufficient). Any candidate who disturbs the orderly course of the exam or leaves the room may be excluded from continuing the exam by the respective examiner or proctor. In that case, the exam performance will be graded with "nicht ausreichend" (5.0 - not sufficient).
- (4) The candidate may request within a period of two weeks after commencement of lectures of the following semester that the decisions made according to (3) are reviewed by the respective Examination Board. The candidate is to be informed in written form about the result immediately. In the event of a decision to the disadvantage of the candidate, any such decision must be substantiated and the candidate is to be informed about the possible legal remedies.

### **§ 9**

#### **Pass and failure**

- (1) Any module exam is deemed to be passed if the exam has been graded with at least "ausreichend" (4.0 - sufficient).
- (2) The Master's Exam is deemed to be passed if all academic performances have been delivered and all module exams, the Master's Thesis and the Colloquium have been graded with at least "ausreichend" (4.0 - sufficient).
- (3) In general, the results of any written exam performance must be disclosed in appropriate form and in compliance with all data protection policies until commencement of lectures of the following semester.
- (4) If the candidate did not pass the Master's Exam, they will be provided - upon request and against submission of the corresponding documentation as well as the certificate of deregistration - with a transcript which indicates all exam performances that have been delivered, along with the corresponding grades as well as such performances which have not been delivered. The transcript will also indicate that the Master's Exam has not been passed.

### **§ 10**

#### **Retaking advance exam performances and exam performances**

- (1) Exam performances which have not been passed may only be retaken twice. Retaking exam performances or advance exam performances which have been passed is not admissible.
- (2) Any exam performance which has not been passed must be retaken in the course of examination dates of the following semester. A module exam is deemed to be irrevocably failed if the exam performance has been graded with "nicht ausreichend" (5.0 - not sufficient) three times.
- (3) At least once during the semester, the students must be offered the opportunity to deliver the respective exam performances.
- (4) In the case of the last attempt for an exam, the exam performance must be assessed by two examiners. The grade will be determined according to the arithmetic average of the individual grades.

## **§ 11**

### **Crediting of times, credit points, academic performances and exam performances**

- (1) Advance exam performances and exam performances achieved in the course of other programmes at other universities and federal universities of cooperative education or officially recognized universities of cooperative education will be credited upon request if the Schmalkalden University of Applied Sciences cannot provide proof to the applicant that there are substantial differences. Furthermore, the equivalence agreements approved by the Standing Conference of the Ministers of Education and Cultural Affairs and the German Rectors' Conference as well as the agreements concluded in line with university partnerships will be considered when crediting any advance exam performance or exam performance which has been achieved outside the Federal Republic of Germany.
- (2) If exam performances are credited, the ECTS points as well as the grades - to the extent that the respective grading scales are similar - will be applied and subsequently calculated into the final grade. In case of grading scales which are not similar, the annotation "pass" will be noted. It is admissible to mark the credited item in the transcript.
- (3) If the conditions of (1) and (2) are fulfilled, there is the legal right to crediting of results. The respective advance exam performances and exam performances can then be credited upon request made before the Examination Board. All material which is substantial for the decision is to be attached to such request.
- (4) The students will be placed into the corresponding full study semester according to the amount of credited ECTS points.
- (5) Any crediting of any knowledge or skills obtained outside the university is governed by the Statutes on the Crediting of Knowledge and Skills Obtained Outside the Schmalkalden University of Applied Sciences.

## **§ 12**

### **Examination Board**

- (1) The Examination Board shall be responsible for the organization of Master's Exams as well as any other tasks that might arise from these Examination Rules. The Examination Board of our programme of Mechatronics & Robotics (M.Eng.) is comprised of one professor from each of the two departments and one student member of the Schmalkalden University of Applied Sciences, who is to be elected by the faculties of Electrical Engineering and Mechanical Engineering. The professors are elected for three years and the student member is elected for one year.
- (2) The members of the Examination Board as well as their deputies are appointed by the Council of the corresponding department. The Examination Board will elect the president and their deputy from the midst of the appointed professors. The president does generally conduct all business of the Examination Board.
- (3) The Examination Board watches that the stipulations of these Examination Rules are fulfilled. They will inform the departments on a regular basis about the developments of the exam results as well as the allocation of module grades and final grades. This report shall be disclosed by the departments in a suitable manner. The Examination Board will make suggestions regarding the reformation of the study regulations/course scheme and examination rules.
- (4) The Examination Board has a quorum if at least both professors and their deputies are present and it may decide with the majority of the members present. In the event of a tie vote, the vote of the president shall be deemed decisive.
- (5) The members of the Examination Board have the right to be present at the hold of the exam performance.
- (6) The members of the Examination Board and their deputies are subject to official secrecy. To the extent that they are not in public service, the president will oblige them to secrecy.

## **§ 13**

### **Examiners and assessors**

- (1) Only such professor and other authorised examiner according to § 54 (2) of the ThürHG will be appointed examiner, who has maintained an independent and autonomous teaching at a university in a subject that is relevant for the exam performance - only and to the extent that there are no substantiated reasons to disregard this stipulation. Only such person will be appointed assessor who has passed the corresponding Master's Exam or a similar exam.
- (2) The candidate is allowed to suggest a professor to be appointed examiner for the Master's Thesis. This suggestion does not constitute any entitlement.
- (3) The candidate shall be informed about the names of the examiners in due time.

#### **§ 14 Competences**

- (1) The examiners decide upon pass and fail of any exam (§9).
- (2) The Examination Board decides
  1. upon the consequences of any violation against regulations on examination (§8).
  2. upon the crediting of advance exam performances and exam performances (§11).
  3. upon the appointment of the examiners (§13) and
  4. upon any request for preparation of the Master's Thesis (§17) and
  5. upon any request for prolongation of preparation time for the Master's Thesis (§ 17 (4)).
- (3) The Examination Board decides upon matters regarding the Examination Rules to the extent that it is not stipulated otherwise by these Examination Rules.

#### **§ 15 Purpose and procedure of Master's Exam**

- (1) By successful completion of the Master's Exam the students acquire the Master's degree which qualifies to enter a profession. The Master's Exam will prove whether the candidate is capable to apply scientific methods and knowledge, has gained a profound specialist technical knowledge and whether they satisfy the conditions for admission to PhD programmes.
- (2) The module exams of the Master's Exam are generally held in the course of study and following the corresponding lectures of the module. The Master's Exam is completed upon submission of the Master's Thesis and achievement of the Colloquium.

#### **§ 16 Form and extent of Master's Exam**

- (1) The Master's Exam comprises 10 modules corresponding to 50 ECTS credit points, one project task corresponding to 10 ECTS credit points, the Master's Thesis corresponding to 27 ECTS credit points as well as the Colloquium corresponding to 3 ECTS credit points.
- (2) The subject areas as treated in the course of the lectures which are associated to the modules according to the study regulations are subject of the module exam.

#### **§ 17 Release of Master's Thesis and time to write the Thesis**

- (1) The Master's Thesis shall provide proof that the candidate is capable to elaborate on a problem independently and according to scientific methods that is of their subject area within a limited period of time, and that they are able to gain further knowledge and skills independently.
- (2) The specific assignment of the Master's Thesis will be released by a professor or any other authorised examiner in virtue of § 54 (2) of the ThürHG. In the event that such person is not working at the department of Electrical Engineering or Mechanical Engineering, any admission of such person shall be subject to approval by the president of the respective Examination Board.
- (3) The Master's Thesis may only be released if the candidate did not fail in more than two of the prescribed academic performances or exam performances of the academic semesters. The Master's Thesis will be released by the respective Examination Board. The specific assignment and time granted to write the Thesis are to be entered into the records. The candidate is allowed to express their eventual preferences regarding the specific assignment.
- (4) The specific assignment of the Master's Thesis may be returned once if there are substantial reasons, however only within two weeks upon release and if providing written substantiation of such reasons.
- (5) The Master's Thesis may be submitted in form of a team project if the part that constitutes the exam performance of the individual candidate can clearly be distinguished by means of indicated sections, page numbers or other objective criteria, and if grading of the individual candidate's performance is therefore indubitable and if the conditions as set out in (1) are fulfilled.
- (6) The time granted to write the Thesis is 20 weeks.

- (7) The Master's Thesis is to be written in English. The candidate shall submit two printed and bound copies of the Master's Thesis as well as one electronic copy in usual format (.docx or .pdf) and on a usual storage medium (CD).
- (8) The mentor shall define the specific assignment, problem definition and scope of the Master's Thesis so that the time limit set to write the Thesis may be observed. The time granted to write the Thesis may be prolonged by a maximum of 4 weeks upon request of the candidate for reasons they may not be held responsible for.

### **§ 18**

#### **Submission, grading and retaking of Master's Thesis, Colloquium**

- (1) The Master's Thesis shall be submitted to the respective department (Electrical Engineering or Mechanical Engineering according to focus) in due time and in the form as set out in § 17 (7). The date of submission is to be entered into the records. At the time of submission, the candidate shall confirm in writing that they wrote the Thesis - and in the event of a team project the part that is marked accordingly - on their own account and did not use any resources and aids other than the ones indicated.
- (2) The mentoring professor and one other professor will grade the Thesis. The grade will then be determined according to the arithmetic average of the grades conferred by both examiners. In the event that the grades given by both examiners differ in more than two grades or in the event that one examiner grades the Thesis with "not sufficient", the Examination Board will appoint a third examiner. The score will then be determined according to the arithmetic average of the scores of all three examiners.
- (3) If the Master's Thesis was graded with less than "ausreichend" (sufficient - 4.0) or if it has not been submitted in due time, the candidate may repeat the Thesis, however must be given a different assignment.
- (4) The candidate achieves 30 ECTS credit points for a passed Master's Thesis and the Colloquium.
- (5) The candidate shall explain their Master's Thesis in the course of the Colloquium. The Colloquium may also include questions arising from the whole subject area from which the Master's Thesis had been derived. The Colloquium shall in general take place within the first four weeks upon submission of the Master's Thesis. It may only be taken if the candidate achieved 65 ECTS credit points in the module exams and the project task. The Colloquium shall be before two professors of the Schmalkalden University of Applied Sciences. The time granted for the Colloquium is between at least 30 minutes and 60 minutes. The candidate gains 3 ECTS credit points for a passed Colloquium.

### **§ 19**

#### **Calculation of final grade, transcript and Diploma Supplement**

- (1) The final grade is calculated as sum of the module exam grades, evaluated by the amount of credit points/90. Any round off or round down will be made according to §7 (3) S. 2.
- (2) The candidate will receive a transcript for the passed Master's Exam. The transcript will indicate the grades in the individual subjects as well as the final grade. All grades will be cited in words and numbers with one decimal digit in parenthesis. Upon request of the candidate the grades of the module exams achieved in additional subjects and the length of studies required until the Master's Exam will be included into the transcript.
- (3) The transcript will bear the date of successful completion of the Colloquium. It will be signed by the Dean of the respective department (§ 18 (1)) and the president of the Examination Board.
- (4) The Schmalkalden University of Applied Sciences will issue a Diploma Supplement (DS) in accordance with the "Diploma Supplement Model" of the European Union/UNESCO. In order to illustrate the German national education scheme (DS Section 8) the text as agreed by the Standing Conference of the Ministers of Education and Cultural Affairs and the German Rectors' Conference in its respective applicable version is to be used. In addition to the Diploma Supplement, the Schmalkalden University of Applied Sciences will surrender to the candidate translations in English of the Master's Degree Certificate and the transcript.

### **§ 20**

#### **Master's degree and Master's Degree Certificate**

- (1) If the Master's Exam has been passed, the title of "Master of Engineering" (M. Eng.) will be conferred.
- (2) The candidate will receive the transcript together with the Master's Degree Certificate bearing the date of the transcript. The Master's Degree Certificate will certify the achievement of the degree. The Master's Degree Certificate will be signed by the President and bear the seal of the Schmalkalden University of Applied Sciences.

**§ 21**  
**Invalidity of Master's Exam**

- (1) If the candidate cheated at any exam performance and if such dishonesty comes to be known only after surrendering of the transcript, the grade of the corresponding exam performance may be amended according to §7 (1). Where appropriate, the module exam may be graded with "nicht ausreichend" (not sufficient) and the Master's Exam may be declared as "nicht bestanden" (fail).
- (2) If the conditions for holding the exam performance have not been fulfilled and if the candidate did not have the intention to any dishonest behaviour in that regard and if such circumstance will only be known after surrendering the transcript, such defect will be healed by passing the exam performance. If the candidate intentionally and wrongly obtained to be admitted to the the exam performance, such exam performance may be graded with "nicht ausreichend" (not sufficient) and the Master's Exam may be declared as "nicht bestanden" (fail).
- (3) The candidate will be granted the opportunity to explain themselves before any decision about the issue is made.
- (4) Any incorrect transcript will be withdrawn and a corrected version is to be issued. Withdrawing the incorrect transcript entails withdrawing the Master's Degree Certificate as well if the Master's Exam has been declared as "nicht bestanden" (fail) because of dishonesty.

**§ 22**  
**Inspection of exam documents**

The candidate may request to inspect the written exam papers, the report on the Master's Thesis and the minutes of the exams within a reasonable period of time until a period of one year upon completion of the examination procedure.

**§ 23**  
**Commencement**

These Examination Rules will enter into effect on the first day of the month following the announcement in the Journal of the Schmalkalden University of Applied Sciences.

Schmalkalden, this 12 February 2019

Prof. Dr. Elmar Heinemann  
President der Hochschule Schmalkalden



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- <sup>i</sup> *[Thuringian Higher Education Act]*
  - <sup>ii</sup> *[Journal of Laws and Ordinances]*
  - <sup>iii</sup> *[Governmental Journal of Thuringia]*
  - <sup>iv</sup> *[Registration Regulations]*