

**Study and examination regulations
for the Electrical Engineering master program
at the Technical University of Applied Sciences Augsburg
dated 15 October 2024**

On the basis of Art. 9 sentence 1 and Art. 84 para. 2 sentence 1 of the Bavarian Higher Education Innovation Act (BayHIG) of 5 August 2022 (GVBl. p. 414, BayRS 2210-1-3-WK), which was last amended by § 3 of the law of 23 June 2023 (GVBl. p. 251) and by § 2 of the law of 24 July 2023 (GVBl. p. 455), Augsburg University of Applied Sciences, hereinafter referred to as Augsburg University of Applied Sciences, issues the following statutes:

§ 1

Purpose of the syllabus and examination regulations

¹These study and examination regulations serve to implement and supplement the Bavarian Higher Education Innovation Act (BayHIG) of 5 August 2022, the Ordinance on the Regulation of Study Accreditation in accordance with the State Treaty on the Accreditation of Studies (Bavarian Study Accreditation Ordinance - BayStudAkkV) of 13 April 2018 (GVBl. p. 264) BayRS 2210-1-1-13-K and the General Examination Regulations (APO) of Augsburg University of Applied Sciences of 20 December 2022 in their respective current versions. ²These study and examination regulations also constitute the legal Basis for possible cooperation with domestic and foreign partner universities as part of the Electrical Engineering master program.

§ 2

Study objectives

(1) ¹The Master's degree program in Electrical Engineering aims to qualify graduates of Bachelor's degree programs in the field of Electrical Engineering and Information Technology, Mechatronics or Computer Engineering for a prominent position in the development, project planning and operation of electrical engineering, electronic or information technology systems. ²The contents are aimed at the thorough consolidation of methodological expertise and the acquisition of practice-oriented specialised knowledge. ³In addition, independent work and interdisciplinary thinking should be particularly encouraged.

(2) In addition to further technical and specialist qualifications, the increasing importance of business management, organisational and language skills, teamwork and people management should also be taken into account.

(3) ¹In view of the breadth and diversity of the subject area, students should be able to quickly familiarise themselves with one of the numerous application areas of electrical engineering and information technology. ²Through a wide range of required elective modules, which are continuously adapted to current needs, students are given the opportunity to choose modules that correspond to their inclinations and future career expectations.

§ 3

Qualification for the degree programme, admission

(1) ¹The qualification requirement for admission to the Electrical Engineering master's program is a university degree from a German university with an above-average grade (overall examination grade of 2.69 or better) with at least 210 credit points (CP) according to the European Credit Transfer and Accumulation System (ECTS) in one of the degree programs Electrical Engineering and Information Technology, Mechatronics or Computer Engineering or an equivalent degree from a German or foreign university.

(2) A further qualification requirement is the successful completion of a procedure to determine aptitude for the specific degree programme in accordance with Art. 90 Para. 1 Sentence 2 BayHiG. The requirements and structure of the procedure are set out in [Annex A.5](#) and in the statutes on the implementation and structure of assessment tests and aptitude assessment procedures in undergraduate degree programs and the procedure for determining course-specific aptitude in master programs at Augsburg University of Applied Sciences dated 28 March 2023.

(3) ⁽¹⁾The Admissions Committee is responsible for carrying out the procedure for determining programme-specific aptitude; it also regulates the details of the procedure in accordance with [Annex A.5](#).

The chairperson and the deputy chairperson of the Examination Board are also the chairperson and deputy chairperson of the Admission Board. The Faculty Council may appoint further members of the Examination Board to the Admissions Board.

(4) ¹Applicants who have earned fewer than 210 CP but at least 180 CP in one of the degree programs listed in para. 1, but who fulfil the requirements for the average grade in accordance with para. 1 sentence 1 on the basis of their course credits to date and have passed the entrance assessment in accordance with [Annex A.5](#), will be provisionally admitted to the degree program in accordance with Art. 90 para. 2 sentence 4 BayHIG. ²Admission is subject to the resolutive condition that proof of the missing CP is provided within one year of commencing the degree programme. ³The Admissions Committee determines which coursework and examination performance must be completed and checks the successful completion of the missing CP before the start of the third semester. ⁴The master's examination is only passed when the CP to be acquired as part of the subsequent qualification have been proven.

(5) ¹The admission requirements with regard to the required language skills are regulated by the statutes on the procedure for pre-registration, enrolment, re-enrolment, leave of absence and deregistration at the Technical University of Applied Sciences Augsburg in the currently valid version. ²In justified exceptional cases, the Admissions Committee may authorise deviations from the language skills prescribed therein.

(6) The Admissions Committee decides on the equivalent value of degrees within the meaning of para. 1 sentence 1.

§ 4

Structure of the degree programme, normal duration of studies

¹The programme is offered as a full-time course with a normal duration of studies of three semesters including the master's thesis. ²It comprises 90 credit points (CP) in accordance with the European Credit Transfer and Accumulation System (ECTS). ³The programme begins in the summer or winter semester.

§ 5

Basic and orientation examination, conditions for advancement

¹There is no orientation phase in the master's program and therefore no basic and orientation examinations. ²There are no advancement requirements within the master's program.

§ 6

Modules and examinations

(1) ¹The Master's program is divided into modules in accordance with Section 4 (1) APO. ²All modules are either compulsory modules, required elective modules or elective modules in accordance with Section 4 (3) APO. ³Compulsory modules are the modules of a degree program that are mandatory for all students. ⁴Required elective modules are modules that are offered as alternatives. ⁵Each student must make a specific selection from among them in accordance with the study and examination regulations. ⁶If a required elective module has a limited number of participants, preference will be given to students who have not yet taken this required elective module. ⁷Electives are modules that are not mandatory for achieving the study objective. ⁸If places are available, modules from the Master's programs offered by the Technical University of Applied Sciences Augsburg can be selected as electives.

(2) ⁽¹⁾ The compulsory modules, their number of hours, the type of course and the examinations are set out in [Annex A.3](#) to these study and examination regulations. ²The scope of the required elective modules is also specified.

(3) ¹The curriculum regulates on an annual basis which required elective modules are allowed and offered to students. ²In addition, the study plan for the respective semester regulates which forms of courses and examinations are used in the individual modules. ³In deviation from sentences 1 and 2, the necessary regulations may also be made in the module catalogue, provided their temporal validity is clearly recognisable.

(4) ¹There is no entitlement to all required elective modules and electives being offered. ²Furthermore, there is no entitlement to modules being taught if the number of participants is insufficient.

§ 7

Curriculum and module catalogue

The Faculty of Electrical Engineering draws up a curriculum in accordance with § 8 APO and a module catalogue to ensure the range of modules on offer and to inform students.

§ 8

Internship semester

The master's program does not include an internship (industrial placement) semester.

§ 9

Examination board

¹An examination board consisting of at least six professors, who must be members of the Faculty of Electrical Engineering, is formed for the Master's programme in Electrical Engineering. ²The Examination Board is appointed by the Faculty Council of the Faculty of Electrical Engineering. ³The Faculty Council of the Faculty of Electrical Engineering appoints the chairperson and deputy chairperson. ⁴The Examination Board may call on all colleagues involved in the degree programme to attend individual meetings in an advisory capacity.

§ 10

Master's thesis

(1) The topic of the master's thesis is usually determined at the beginning of the third semester.

(2) The duration of continuous work on the thesis is six months.

(3) Proof of a total of 30 CP is a prerequisite for the issue of the topic of the master's thesis.

(4) ¹The master's thesis may be written in German or English. ²The decision on the language shall be made in agreement between the applicant and the first and second examiners.

(5) ⁽¹⁾ The master's thesis is generally submitted in digital or paper form. ²The decision on the form of submission is the responsibility of the examiners involved.

§ 11

Assessment of examination performance and overall examination result

(1) To calculate the overall examination result, the final grades of all modules are weighted according to the number of CP.

(2) The differentiated assessment of examination performances is carried out in accordance with § 20 APO.

(3) The master's examination is deemed to have been passed if all examinations have been successfully completed in accordance with the appendix and the master's thesis has been assessed by the examiners with at least the grade "sufficient".

§ 12

Master's examination certificate

(1) A certificate and an English-language Diploma Supplement is issued in accordance with the model in the annex to the General Examination Regulations (APO) of the Technical University of Applied Sciences Augsburg dated 20 December 2022 in the currently valid version.

(2) The final certificate lists the assessments and CPs achieved for all modules.

(3) The title of the master's thesis is shown on the final certificate.

§ 13

Academic degree

- (1) On successful completion of the master examination, the academic degree of "Master of Engineering", abbreviated to "M. Eng.", is awarded.
- (2) A diploma will be issued for the award of the academic degree in accordance with the respective model in the annex to the General Examination Regulations (APO) of the Technical University of Applied Sciences Augsburg dated 20 December 2022 in the currently valid version.

§ 14

Entry into force and transitional provisions

- (1) These study and examination regulations enter into force on 15 October 2024.
- (2) The study and examination regulations apply for the first time to all students who have started their studies in the first semester in the summer semester 2025.

Issued on the basis of the resolution of the Senate of Augsburg University of Applied Sciences dated 16 July 2024 and the University Council of the Technical University of Applied Sciences Augsburg dated 29 July 2024 and the approval of the President of Augsburg University of Applied Sciences dated 11 October 2024.

Augsburg, 11 October 2024

Prof. Dr Dr h.c. Gordon T. Rohrmair
President

A Annex

A.1 Abbreviations

A.1.1 General abbreviations

CP = credit points according to the European Credit and Accumulation Transfer System

SWS = Hours per week

oE = without success

mE = with success

PS = Internship semester

OP = Orientation phase

ZV = Admission requirement

A.1.2 Forms of examination

schrP = written examination

StA = term paper

mdlP = oral examination

PP = practical examination

PfP = Portfolio examination

MA = Master's thesis

A.1.3 Types of courses

V = Lecture

Ü = Tutorial

S = Seminar

K = Colloquium

P = Lab course

SU = Seminar lesson

AWP= Non-technical required elective module

FWP= Program-specific required elective module

A.2 Scope and description of the examination forms

| Form of examination | Scope (unless otherwise specified) and description |
|--------------------------|--|
| Written examination | 60– 180 min. |
| Student research project | Written elaboration of the subject-related assignment, prepared with teaching supervision throughout the semester, possibly combined with a personal presentation of the student research project. The scope of the student research project is 5– 30 pages. |
| Oral examination | 5 – 60 min. |
| Practical examination | See § 18 para. 3 APO. |
| Portfolio examination | See Section 18 (4) APO. |
| Master's thesis | The master's thesis is proof of the ability to work independently on a problem/assignment within a specified deadline using scientific methods. |

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A.3 Modules

The definition of the abbreviations of the examination forms can be found on [p. 5](#). The remarks can be found on [p. 8](#).

Table 1: Start of studies in summer or winter semester (Model A)

| ModuleNo. | Module title | CREDI T HOUR S | CP | Type of teaching events | Examination form and duration | Remarks; grade weights for calculating the final module grade |
|---------------------------|--|-------------------------|-----|-------------------------------|----------------------------------|---|
| Summer term | | | | | | |
| <i>Either catalogue I</i> | | | | | | |
| ACT | Advanced Control Theory | 4 | 5 | SU/Ü/P | schrP | 1) |
| AUT | Automation | 4 | 5 | SU/Ü/P | schrP | 1) |
| EPS | Electric Power Systems | 4 | 5 | SU/Ü/P | schrP | 1) |
| DC | Selected Topics on Digital Communications | 4 | 5 | SU/Ü/P | schrP | 1) |
| VLSI | VLSI design | 4 | 5 | SU/Ü/P | schrP | 1) |
| CS | Cryptography and IT-Security | 4 | 5 | SU/Ü/P | schrP | 1) |
| MP1 | Master project 1 | 8 | 10 | SU/Ü/P | PfP | 2) |
| <i>or Catalogue II</i> | | | | | | |
| ACT.P | Advanced Control Theory with Project | 6 | 7,5 | SU/Ü/P | PfP | 3) |
| AUT.P | Automation with Project | 6 | 7,5 | SU/Ü/P | PfP | 3) |
| EPS.P | Electric Power Systems with Project | 6 | 7,5 | SU/Ü/P | PfP | 3) |
| DC.P | Selected Topics on Digital Communications with Project | 6 | 7,5 | SU/Ü/P | PfP | 3) |
| VLSI.P | VLSI-Design with Project | 6 | 7,5 | SU/Ü/P | PfP | 3) |
| Winter term | | | | | | |
| | Technical required elective modules | 12 | 15 | SU/Ü/P | schrP/mdIP | 4) |
| | Interdisciplinary required elective modules | | 10 | SU/Ü/P | | 5) |
| MP2 | Master project 2 | 4 | 5 | SU/Ü/P | PfP | 2) |
| 3rd semester | | | | | | |
| MA | Master's thesis | - | 30 | | PfP | 7) |

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Table 2: Start of studies in the summer semester only (Model B)

| ModuleNo. | Module title | HOURS | CP | Type of Teaching | Examination form and duration | Remarks; grade weights for calculating the final module grade |
|-------------------------------|--|-------|-----|------------------|-------------------------------|---|
| Summer term | | | | | | |
| <i>Catalogue II</i> | | | | | | |
| ACT.P | Advanced Control Theory with Project | 6 | 7,5 | SU/Ü/P | PfP | 3) |
| AUT.P | Automation with Project | 6 | 7,5 | SU/Ü/P | PfP | 3) |
| EPS.P | Electric Power Systems with Project | 6 | 7,5 | SU/Ü/P | PfP | 3) |
| DC.P | Selected Topics on Digital Communications with Project | 6 | 7,5 | SU/Ü/P | PfP | 3) |
| VLSI.P | VLSI-Design with Project | 6 | 7,5 | SU/Ü/P | PfP | 3) |
| Winter semester abroad | | | | | | |
| | Required elective modules | | 30 | SU/Ü/P | | 6) |
| 3rd semester | | | | | | |
| MA | Master's thesis | - | 30 | | PfP | 7) |

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A.4 Remarks

- 1) Exactly four modules must be selected from Catalogue I in addition to Master's Project 1. The Faculty Council may deviate from the catalogue and determine other or additional modules.
- 2) The module must cover a topic from the field of Electrical Engineering. The decision on this is made by the examination board.
The portfolio examination is made up as follows:
 1. PP (45 min), weighting: 60 %
 2. StA (5 - 20 pages), weighting: 30 %
 3. mdlP (5 - 15 min), weighting: 10 %.
- 3) Exactly four modules must be selected from Catalogue II. The Faculty Council may deviate from the catalogue and determine other or additional modules.
The portfolio examination is made up as follows:
 1. PP (15 - 20 min), weighting: 10 %
 2. StA (5 - 20 pages), weighting: 20 %
 3. schrP (90 - 120 min), weighting: 70 %.
- 4) These are required elective modules in accordance with Section 4 (3) APO. The type of courses and the examination forms of the modules are announced by the faculties at the beginning of each semester in a catalogue of required elective modules. The forms of examinations are those standardised in § 18 APO.
- 5) These are required elective modules in accordance with Section 4 (3) APO. The examination forms standardised in § 18 APO can be considered.
- 6) The selection of required elective modules must be approved in advance by the examination board.
- 7) The master's thesis must deal with a topic from the field of Electrical Engineering. The decision on this is made by the examination board.
The master's thesis module is a portfolio examination and is composed as follows:
Table 1 (Model A):
 1. MA (50 - 100 pages), weighting: 90 %
 2. mdlP (15 min - 30 min), weighting: 10 %.Table 2 (Model B):
 1. MA (50 - 100 pages), weighting: 80 %
 2. StA (10 - 20 pages), weighting: 10 %
 3. mdlP (15 min - 30 min), weighting: 10 %.

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A.5 Procedure for determining program-specific aptitude

1. The prerequisite for participation in the procedure to determine program-specific aptitude is a complete application in due form and within the required deadline and proof of the qualification requirements in accordance with § 3 of the study and examination regulations.
2. The procedure for determining program-specific aptitude examines whether an applicant is likely to be able to successfully complete the master's program based on their previous knowledge, skills and competencies. The following criteria can be used for this purpose:
 - Proof of relevant course content in an undergraduate degree program.
 - Report on relevant practical experience in the field of Electrical Engineering
 - Written elaboration on a topic from the field of Electrical Engineering
 - Submission of a personal statement. This should take the following aspects into account:
 - Motivation for studying the master program "Electrical Engineering"
 - Reasons for choosing to study in Augsburg or Germany
 - Description of existing and new competences and skills to be acquired in the Master's degree program
 - Test (performance assessment in written form)
 - Selection interview lasting 10 to 20 minutes (performance assessment in oral form)

Which of these criteria are applied and in what form will be announced in good time before the start of the application phase on the degree program's website.

3. As part of the procedure for determining program-specific aptitude, the documents submitted with an application are reviewed and assessed by the admissions committee.
4. An application is deemed suitable if the criteria stated under § 3 and no. 2 have been proven and positively assessed.
5. The Admissions Committee may deviate from this procedure in justified exceptional cases.