

Study and Examination Regulations for the M.Eng. Autonomous Driving at Coburg University of Applied Sciences and Arts (SPO M AD)

as of 22/06/2023
(non-binding English translation)

On the basis of Art. 9 Sentence 1 and 2, Art. 80 Para. 1, Art. 84 Para. 2, Art. 96 Para. 1 and 3 of the Bavarian Higher Education Innovation Act (BayHIG) as of August 05, 2022 (GVBl 2022, p. 414, BayRS 2210-1-3-WK), the Coburg University of Applied Sciences enacts the following statutes:

§ 1

Purpose of the Study and Examination Regulations

¹ This study and examination regulations regulate the master of engineering Autonomous Driving at the Coburg University of Applied Sciences and Arts. ²It serves to complete and supplement the Bavarian Higher Education Innovation Act action competences as well as social-communicative competences (BayHIG) as of August 05, 2022 (BayRS 2210-1-3-WK) in its applicable version and the General examination regulations (APO) of Coburg University of Applied Sciences and Arts as of May 06, 2022 (Official Gazette 2022) in its applicable version.

§ 2

Study Objective

(1) ¹The main focus is on imparting in-depth technical knowledge from the field of autonomous driving and its necessary components, methods of artificial intelligence, traffic infrastructure, communication technology and virtual test methods. ²Through its solution-based and project-oriented concept, the degree program qualifies engineers with special expertise in the above mentioned technical focal points. ³The specific concept of the degree program promotes not only subject and methodological competences, but also activity and action competences as well as social-communicative competences.

(2) Building on an undergraduate degree in engineering, natural sciences, information technology or mathematics, the degree program impacts knowledge and competences which are required to perform highly qualified specialist tasks both in the productive economy, e.g. mechanical engineering or mobility industry, and in data-generating, -interpreting and -using business models as well as in the field of science, research and development.

(3) The Master's degree program can provide the basis for a cooperative doctorate with a university in addition to the qualifications mentioned above.

(4) The graduates of the degree program have an overview of the technical and social contexts within the covered subject areas and are able to apply more in-depth scientific methods and findings in order to recognize independently and process successfully relevant problems and tasks. ²They are aware of their special social and individual responsibility and act accordingly.

(5) The Master's degree program should prepare the students for an international field of work. ²The courses and the examinations of the degree program are therefore conducted in English.

(6) The Master's degree program aims at German and international students who wants to further their professional education as well as gain international experience. ²For this reason language courses in German are compulsory and a further language – apart from the mother tongue – is provided on a voluntary basis.

§ 3

Admission Requirements for the degree program

(1) Admission requirements for the degree program are:

1. A university degree of at least seven semesters amounting to 210 ECTS credits in the field of automotive engineering, mechatronics, information technology/computer science, mechanical engineering, electrical engineering/electronics, physics, mathematics or of a related degree program at a German higher education institution or another equivalent degree including a practical study semester of at least 18 ECTS credits;
2. A university degree with an overall grade of at least „good“ (2.5) or a final grade with which one belongs to the best 60% of graduates.
3. If English is not the native language, knowledge of the English language at level B2 according to the Common European Framework of Reference for Languages (CEF).

(2) ¹Applicants with a standard duration of studies of six (180 ECTS credits) or seven (210 ECTS credits) semesters who lack a practical semester in whole or in part may be admitted on condition that they make up for the practical semester no later than one year after starting their studies, otherwise the Master's exam shall be deemed failed. ²The practical study semester consists of a university internship with a duration of 20 weeks as well as the associated courses accompanying the internship.

(3) ¹Applicants with a standard duration of studies of six semesters (180 ECTS credits) who lack a theoretical semester may be admitted on condition that they make up for the missing content from the subject-relevant study program offered by Coburg University of Applied Sciences and Arts or another higher education institution no later than one year after starting their studies, otherwise the Master's exam shall be deemed failed. ²The examination committee determines individually which additional study and examination achievements have to be taken.

(4) The conversion of foreign degrees is generally based on the Bavarian formula.

§ 4

Information and Counseling Interview

Prospective students are strongly recommended to attend an information and counseling interview before taking up their studies. The aim of the interview is to explain the structure, options and procedures of the degree program to the prospective students and to make a recommendation regarding the taking up of the degree program.

§ 5

Standard Period of Study, Structure of the Program

(1) The study is conducted as full-time course of study and comprise a standard period of three semesters.

(2) The program consists of two study semesters with a total of seven modules and the third semester with the Master's degree.

§ 6

Modules, Examination and Overall Examination Grade

(1) ¹The compulsory modules, their numbers of hours, the type of course, the examinations, their weighting for the formation of the final and overall examination grade and the divisors as well as the credit points (ECTS) are specified in the Annex of these Study and Examination Regulations. ²The regulations for elective modules are supplemented by the study and examination plan.

(2) The grading to all examinations of these study and examination regulations is carried out according to the following grades: 1,0 – 1,3 – 1,7 – 2,0 – 2,3 – 2,7 – 3,0 – 3,3 – 3,7 – 4,0 – 5,0.

(3) In addition to the overall examination grade, a relative grade shall be formed in accordance with the ECTS User's Guide in the currently valid version.

§ 7

Master's Thesis

(1) The program includes a Master's thesis.

(2) ¹The Master's thesis should demonstrate that the student is able to independently work on and solve a practice-relevant problem from the subject area of this degree program. ²The result of the Master's thesis should also indicate whether the candidate is fundamentally qualified for a doctorate.

(3) ¹The registration of the Master's thesis can take place at the earliest eight weeks after the beginning of the third semester, stating the topic and with the consent of the examiner, with the chairperson of the examination committee. ²Implementation is the responsibility of the examinations committee.

(4) The admission of the Master's thesis is granted by the examination committee, provided that all content-related and formal admission requirements are fulfilled.

(5) The period from the admission of the Master's thesis to its submission is six months.

§ 8

Master Examination Certificate, Academic Degree

¹A Master's examination certificate and a certificate with the acquired academic degree shall be issued upon successful completion of the study program in accordance with the respective model in the Annex to the General Examination Regulations (APO). ²Based on the successful completion of the Master's examination, the academic degree "Master of Engineering" short form "M.Eng." is awarded.

§ 9

Entry into Force, Out-of-force

- (1) ¹These statutes shall enter into force on October 01, 2023. It shall apply to students who begin their studies in the first semester after the summer semester 2023.
- (2) For students who began their studies before winter semester 2023/2024 the study and examination regulations for the Master's degree program Autonomes Fahren at Coburg University of Applied Sciences and Arts (SPO M AF) dated 28.10.2020 (Official Gazette 2020) shall continue to apply; otherwise this shall cease to apply.
- (3) For students to whom the study and examination regulations referred in Para. 2 apply
 1. the courses beginning with the second study semester shall be offered for the last time in winter semester 2023/2024 and ending with the third study semester for the last time in summer semester 2024,
 2. the option of completing credits beginning with the first study semester is offered for the last time in the winter semester 2024/2025 and ending with the third semester for the last time in the winter semester 2025/2026,
- (4) A change to the new right according to § 9 Para. 1 is excluded for Students under the old law according to § 9 Para. 2.
- (5) Where necessary to avoid hardship in connection with the reorganization of the degree program, special regulations can be made.

Issued on the basis of the resolution of the Senate of Coburg University for Applied Sciences and Arts of 16.06.2023 and the approval through the President of 22.06.2023

Coburg, 22.06.2023

signed
Prof. Dr. Gast
President

These statutes were deposited at Coburg University of Applied Sciences and Arts on 22.06.2023. The laying down was announced by notice on 22.06.2023. The day of announcement is 22.06.2023

Annex: Overview of the modules and examinations of the Master's degree program Autonomous Driving

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|------------|---------|-----|--------------------|--------------|---|------------------------------------|
| Serial No. | Courses | | | Examinations | | Credit points (ECTS) ³⁾ |
| | Modules | SWS | Type ¹⁾ | Type | Extent in minutes (if not stated otherwise) ¹⁾ | |

Module I:

| | | | | | | |
|--|--|---|------------------|----|--------|---|
| | Human-Centered Design & Development Processes | 6 | S, SU, Ü, Pj, Pr | Pf | 1), 2) | 8 |
|--|--|---|------------------|----|--------|---|

Module II:

| | | | | | | |
|--|---|---|------------------|----|--------|---|
| | System Architecture & Safety Concept | 6 | S, SU, Ü, Pj, Pr | Pf | 1), 2) | 8 |
|--|---|---|------------------|----|--------|---|

Module III:

| | | | | | | |
|--|---|----|------------------|----|--------|----|
| | Sensors for Environmental Perception & Data Fusion | 10 | S, SU, Ü, Pj, Pr | Pf | 1), 2) | 14 |
|--|---|----|------------------|----|--------|----|

Module IV:

| | | | | | | |
|--|--|---|------------------|----|--------|---|
| | Vehicle Connectivity & Localization | 8 | S, SU, Ü, Pj, Pr | Pf | 1), 2) | 9 |
|--|--|---|------------------|----|--------|---|

Module V:

| | | | | | | |
|--|--|---|------------------|----|--------|---|
| | Navigation & Virtual Safeguarding | 6 | S, SU, Ü, Pj, Pr | Pf | 1), 2) | 8 |
|--|--|---|------------------|----|--------|---|

Module VI:

| | | | | | | |
|--|---|---|------------------|----|--------|---|
| | System Test & Product Launch | 6 | S, SU, Ü, Pj, Pr | Pf | 1), 2) | 8 |
|--|---|---|------------------|----|--------|---|

Module VII:

| | | | | | | |
|--|---------------------------------|---|----|-------------------|----|---|
| | German / other foreign Language | 4 | SU | schrP and/or mdIP | 1) | 5 |
|--|---------------------------------|---|----|-------------------|----|---|

Thesis

| | | | | | | |
|--|------------------------------------|---|----|---------------|----------------|----|
| | Master's Thesis | - | MA | wBer | 80 – 100 pages | 25 |
| | Colloquium for the Master's thesis | - | S | Präs and mdIP | 30-45 Minutes | 5 |

| | | | | | | |
|---------------|--|-----------|--|--|--|--|
| Totals | | 46 | | | | |
|---------------|--|-----------|--|--|--|--|

| |
|-----------|
| 90 |
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Footnotes and Explanations:

- 1) The details are determined by the examination committee in the study and examination regulations at the end of the current semester for the following semester.
- 2) The portfolio examination is made up of course-related examination elements that reflect teaching-contents to be provided and competences on the best way.
- 3) The portfolio examination is considered as passed if 50% of the sum of the points from the examination elements is achieved. If the examination is concluded as "failed", all the examination elements have to be repeated. The weighting of the examination elements is determined in the study and examination regulations at the end of the semester for the following semester.
- 4) The weighting of the grades corresponds to the ECTS points.

Abbreviations

| | |
|-------|---|
| MA | = (Masterarbeit) Master's Thesis |
| ECTS | = European Credit Transfer System |
| Pj | = (Projektarbeit) Project work |
| Pf | = (Portfolioprüfung) Portfolio examination |
| Pr | = (Praktikum) Internship |
| Präs | = (Präsentation) Presentation |
| S | = Seminar |
| schrP | = (Schriftliche Prüfung) Written examination |
| mdIP | = (mündliche Prüfung) Oral examination |
| SWS | = (Semesterwochenstunden) Semester hours per week |
| SU | = (seminaristischer Unterricht) Seminar-based teaching |
| Ü | = (Übung (optional als integrierte Übung)) Exercise (optional as integrated exercise) |
| wBer | = (wissenschaftlicher Bericht) Scientific report |