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

**as of 17/01/2025**

(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. [2]It 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 June 22, 2023 (Official Gazette 2023) in its applicable version.

## § 2
## Study Objective

(1) [1]The 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. [2]Through its solution-based and project-oriented concept, the degree program qualifies engineers with special expertise in the above mentioned technical focal points. [3]The 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. [2]They 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. [2]The 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. [2]For 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) [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. [1]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); one of the language certificates recognized by the Coburg University of Applied Science and Arts serves as proof. [2]Applicants who are not Germans or persons equivalent to Germans within the meaning of § 1 Para. 2 sentence 2 of the University Admission Ordinance (HZV) of February 10, 2020 (GVBL. S.

87, BayRS 2210-8-2-1-1-WK), which was last amended by the ordinance of August 16, 2023 (GVBL. S. 564), in its current version, are “applicants from third countries”. [3]For applicants from third countries, the provisions of § 4 of these statutes also apply.

(2) [1]Applicants 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. [2]The practical study semester consists of a university internship with a duration of 20 weeks as well as the associated courses accompanying the internship.

(3) [1]Applicants 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. [2]The 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
## Admission for applicants from third countries

(1) [1]For applicants defined in these statutes, the following further regulations apply in addition to the admission requirements specified in § 3 Para. 1 sentence 1, as the total number of places for this group is limited to 24 for capacity reasons. [2]A two-stage selection procedure takes place in accordance to Para. 2 and 3; in the case of equal results, preference is given to women.

(2) [1]In the first stage of the selection procedure applicants have to provide evidence of their participation in the “TestAS” study aptitude test in the “Core Test” and “Engineering Sciences” modules. [2]The overall score (sum of the scores from both TestAS modules) is used to create country-specific ranking lists. [3]A total of 90 applicants reach the second stage of selection procedure. [4]These places are distributed according to the country quota in order to achieve the highest possible diversity in the degree program. [5]Each nationality receives a quota of the 90 places in proportion to its total number of applicants to the total number of applicants. [6]As soon as there is at least one application from a specific country of origin, this country of origin receives at least one of the 90 study places.

(3) [1]For the second stage of the selection procedure applicants have to complete a questionnaire and, if necessary, add supporting documents (e.g. module descriptions and references). [2]The completed questionnaires, including attachments, are evaluated by an admission committee consisting of three members appointed by the Faculty Council. [3]A maximum of 50 points can be achieved in the selection procedure. [4]The following aspects are specifically assessed:

- Credit points (ECTS) of the modules from the areas of programming and software engineering (max. 10 points)
- Credit points (ECTS) of the modules from the areas of machine learning, computer vision and artificial intelligence (max. 5 points)
- Credit points (ECTS) of the modules from the areas of robotics, control engineering, system theory, vehicle dynamics, motion planning, communication networks (max. 5 points)
- Credit points (ECTS) of the modules from the areas of user experience design and human-machine interaction (max. 5 points)
- Thematic reference of the final thesis in the preliminary studies to autonomous systems (max. 15 points)
- Practical experience (e.g. practical semester or professional experience) in the field of autonomous systems (10 points)

[5]A ranking list will be drawn up based on the total number of achieved points. [6]The total number of available study places according to section 1 sentence 1 is allocated on the basis of this ranking list.

## § 5
## Information and Counseling Interview

[1]Prospective students are strongly recommended to attend an information and counseling interview before taking up their studies. [2]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.

## § 6
## 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.

## § 7
## Modules, Examination and Overall Examination Grade

(1) [1]The 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. [2]The regulations for elective modules are supplemented by the study and examination plan.
(2) 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.

## § 8
## Master's Thesis

(1) The program includes a Master's thesis.
(2) [1]The 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. [2]The result of the Master's thesis should also indicate whether the candidate is fundamentally qualified for a doctorate.
(3) [1]The 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. [2]Impementation 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.

## § 9
## Master Examination Certificate, Academic Degree

[1]A 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). [2]Based on the successful completion of the Master's examination, the academic degree "Master of Engineering" short form "M.Eng." is awarded.

## § 10
## Entry into Force,

(1) [1]These statutes shall enter into force on October 01, 2025. [2]It shall apply to students who begin their studies in the first semester after the summer semester 2025.

(2) [1]For students who began their studies before October 1, 2025 these study and examination regulations replace the previously valid study and examination regulations for the Master's degree program Autonomous Driving of June 22, 2023 (Official Gazette 2023) [2]Transitional regulations are not necessary, as there are no changes to the study content, the course of the study or the study and examination regulations.

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Issued on the basis of the resolution of the Senate of Coburg University for Applied Sciences and Arts of 10.01.2025 and the approval through the President of 17.01.2025

Coburg, 17.01.2025

signed
Prof. Dr. Gast
President

These statutes were deposited at Coburg University of Applied Sciences and Arts on 17.01.2025. The depositing was announced by means of a notice on 17.01.2025. The day of announcement is 17.01.2025

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**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 | | |
| | Modules | SWS | Type [1)] | Type | Extent in minutes (if not stated otherwise) [1)] | Credit points (ECTS) [3)] |
| **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:** | | | | | | |
| | **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 Testing** | 6 | S, SU, Ü, Pj, Pr | Pf | 1), 2) | 8 |
| **Module VI:** | | | | | | |
| | **System Testing & Product Launch** | 6 | S, SU, Ü, Pj, Pr | Pf | 1), 2) | 8 |
| **Module VII:** | | | | | | |
| | German | 4 | SU | schrP and/or mdlP | 4) | 5 |
| **Thesis** | | | | | | |
| | Master's Thesis | - | MA | wBer | 80 – 100 pages | 25 |
| | Colloquium for the Master's thesis | - | S | Präs and mdlP | 30-45 Minutes | 5 |
| | Totals | 46 | | | | 90 |

**Footnotes and Explanations:**

**1)** The details are specified by the faculty or 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 which best reflect the course content and competencies to be taught. The portfolio examination is considered as passed if 50% of the total points from the examination elements have been achieved. If the examination is completed 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.

**3)** The weighting of the grades corresponds to the ECTS points.

**4)** Language certificates at level A2 or higher according to the Common European Framework of Reference for Languages (CEFR) are generally recognized or credited. For native speakers, the module is credited with “passed”.

**Abbreviations**

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| 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 exam |
| mdlP | = (mündliche Prüfung) Oral exam |
| 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 |