Study and Examination Regulations

for the Master's Degree Programme

Automotive Software Engineering

at Deggendorf Institute of Technology

dated 08 May 2024

Based on Art. 9, 80 (1), 84 (2) Clause 1 of the Bavarian Higher Education Innovation Act (BayHIG) of 5 August 2022 (GVBl. p. 414, BayRS 2210-1-3-WK), last amended by Section 3 of the Act of 23 December 2022 (GVBl. p. 709), Deggendorf Institute of Technology hereby enacts the following by-laws:

Section 1
Aim of the degree programme

(1)   ₁The master's programme of Automotive Software Engineering is primarily intended to enable graduates of the bachelor's programmes of Computer Science as well as other technically related diploma or bachelor's programmes to substantiate the knowledge that they have acquired so far with theoretical and application-oriented knowledge in the field of automotive software engineering, and thereby be especially well-equipped to meet the requirements of modern development tasks in this high-tech area. ₂The course imparts essential advanced technical knowledge in selected sub-areas of automotive software engineering, which are necessary for the development of complex intelligent systems.

(2)   In addition, the course further qualifies the graduates to work independently and creatively in applied research and development in the said areas.

Section 2
Admission requirements, proof of language proficiency,
programme-specific aptitude

Admission requirements for this degree programme are:

(1)   Successful completion of an undergraduate bachelor's programme with a minimum of 210 ECTS points, in which the basics of computer science (programming) and mathematics have been taught.

(2)   Proof of programme-specific aptitude a part of a process in accordance with Section 5 of these by-laws.

(3) Proof of the following language skills has to be provided on application for this degree programme:

If English is not the native language, proof of English language skills of level B2 as per the Common European Framework of Reference for Languages must be provided.

Regarding the proof, the regulations set out in Section 3 of the general examination regulations for additional qualification in foreign languages and compulsory elective subjects of a general academic nature (AWP) of the Deggendorf Institute of Technology shall apply as amended.

(4) If German is not the native language, proof of German language skills of level A2 as per the Common European Framework of Reference for Languages must be provided.

Regarding the proof, the regulations set out in Section 3 of the general examination regulations for additional qualification in foreign languages and compulsory elective subjects of a general academic nature (AWP) of Deggendorf Institute of Technology shall apply as amended.

Section 3
Structure of the programme, standard period of study

(1) The programme is offered as a full-time programme; the standard period of study is three semesters.

(2) A total of 90 ECTS points is to be acquired.

(3) No rights or entitlement exist to the master's programme being held in the event that an insufficient number of qualified students enrol.

Section 4
Proof of ECTS credits not yet obtained

(1) $_1$If applicants provide proof of an admission-substantiating university degree, for which less than 210 ECTS credits but at least 180 ECTS points have been awarded or are to be regarded as equivalent, then proof of the ECTS points not yet obtained is a prerequisite for passing the master's examination. $_2$Missing ECTS points to be obtained by the start of the third semester, may upon request to the Examination Committee be provided through by completing relevant university courses. $_3$Proof for each variant may be furnished only once. $_4$A maximum of 30 ECTS points may be earned in parallel with the master's programme. $_5$Therefore, at least 180 ECTS points must have been obtained during the previous studies.

(2) The following conditions apply for the proof:

1. University lectures and classes:

$_1$Lectures and classes must be drawn from the relevant undergraduate degree programmes offered at the institute. $_2$The relevant academic advisor is to be consulted in advance, during which time an individualised concept is to be jointly developed with the applicant.

2.   If the 180 ECTS points have been completed as a purely theoretical programme and no proof of at least one year of relevant professional experience in the field of computer science or related disciplines outside the university can be provided, the completion of a relevant internship in the field of computer science or related disciplines of at least 20 weeks duration must be successfully proven.

Section 5
Proof of programme-specific aptitude

(1)   [1]Programme-specific aptitude is determined by means of a written or online examination lasting 90 minutes, and a max. 20-minute selection interview, which can also be carried out online if required. [2]The entire aptitude assessment process is conducted by two instructors from Deggendorf Institute of Technology, at least one of whom performs duties related to the master's programme of Automotive Software Engineering. [3]The final appointment is made by the Examination Committee.

(2)   Applicants, who fulfil the formal criteria for admission, are invited for an aptitude assessment test.

(3)   [1]The written examination comprises complex tasks on relevant topics in computer science, mathematics, programming and software engineering. It consists of open and multiple choice questions. [2]Students are deemed to have passed the written examination "mit Erfolg" ("*successfully*") if they have obtained at least 45 of the 90 maximum points to be awarded.

(4)   [1]Applicants, who have "mit Erfolg" ("*successfully*") passed the written examination, are invited to the selection interview. [2]A student must get at least 10 of the 20 points to pass the selection interview successfully. [3]The Selection Committee decides when the test has been passed "mit Erfolg" ("*successfully*").

[4]The selection interview consists of three parts, to which the following assessment criteria are applied:

   a) Motivation for the master's degree programme (max. 10 points)

   b) Expectations for the master's degree programme
   (max. 5 points)
      b) c) Relevance to future profession (max. 5 points)

(5)   [1]Minutes of the aptitude assessment interview must be recorded and these must indicate, in particular, the date and place of examination, names of applicants, subject matter of the examination and the principles of assessment for individual examination performances and for the determination of examination results.

(6)   Programme-specific aptitude is considered as proven if the aptitude assessment interview and the written examination are completed "mit Erfolg" ("successfully").

(7)   Programme-specific aptitude assessment tests are carried out once a year in the winter semester for the following summer semester.

(8) ₁Applicants not passing the aptitude test for the degree programme may register to reapply to sit the test in the following semester. ²In justified cases, a candidate may register for the test at a later juncture. The test cannot be repeated thereafter.

(9) The Selection Committee may waive participation in the assessment of programme-specific aptitude if

a. the applicant demonstrates above-average knowledge in the programmes specified in Section 3 Paragraph 1 No. 1. In particular, national degrees with a grade above 2.5 and above-average knowledge in computer science, programming and software engineering are considered above average.

b. a GRE (general) or GATE certificate is provided. Minimum score: GRE VR158/QR160/AW 4.0 or GATE 60.

**Section 6
Modules and courses**

(1) ₁The degree programme comprises modules that may consist of courses on connected subjects. ₂ECTS points are allotted to each module in keeping with the amount of time students are required to invest.

(2) ₁Compulsory and compulsory elective modules, the lectures, their number of hours, forms of instruction, examinations as well as the ECTS points are defined in the appendix to these by-laws. ₂The regulations of subject-specific compulsory elective modules and compulsory elective subjects of general academic nature are supplemented by the curriculum.

(3) All modules comprise compulsory modules, compulsory elective modules or elective modules:

1. Compulsory modules are those modules held during the degree programme which are binding for all students.
2. Compulsory elective modules are the modules that are offered as alternatives, either individually or in groups. Students are required to select a certain number of modules based on these study and examination regulations. The selected modules will be treated as compulsory modules.
3. Optional modules are modules that are not mandatory for the achievement of the study objective. They may be additionally selected from the courses offered by the Institute.

(4) ₁No rights or entitlement exist to all of the envisaged specialisations, compulsory elective modules or elective modules actually being offered. ₂Similarly, the Language Centre is not under any obligation to actually administer the relevant courses if the number of attendees is insufficient.

(5) [1]All compulsory courses and their examinations are conducted in English. Optional modules are offered in English so that the course can be completed successfully. [2]Additional optional modules as substitutes for English-language modules may also be offered in German.)

(6) In modules with project work, it is possible for lecturers to set mandatory dates for participants. Students may be excluded if the competencies to be acquired can no longer be acquired for justifiable reasons.

Section 7
Curriculum

[1]The responsible faculty, the Faculty of Artificial Intelligence (AI), draws up a curriculum to safeguard the range of courses and to inform the students. Details of the course of studies are derived from this curriculum.

The curriculum is approved by the Faculty Council and announced to the public before the start of the semester. The announcement of changes and/or new regulations must be made no later than at the beginning of the lecture period of the semester in which these changes are to be applied for the first time. In particular, the curriculum will contain regulations and information regarding:

1. the time allocated for the weekly hours per semester, the time allocated per module and semester, including the attainable ECTS points;
2. the names of the compulsory and compulsory elective modules as well as their respective number of weekly hours per semester;,
3. the subject-related compulsory elective modules, including the number of hours involved;
4. the form of instruction used in each individual module, provided that this has not been conclusively specified in Appendix;
5. the examination format and examination duration;

Section 8
Assessment of examination performance; overall examination grade

(1) ECTS points are awarded for each successfully passed examination. The number of attainable points per examination is shown in the appendix.

(2) [1]A student's overall grade is calculated using a weighted arithmetic average of their individual grades. [2]The weighting of each individual grade equates to the number of ECTS points allocated to the course for which the grade was awarded.

(3) In addition to the overall examination grade as set out in paragraph 2, a relative grade shall be shown based on the numerical value achieved according to the ECTS User Guide in accordance with the regulations in Section 8 paragraph 6 of the General Examination Regulations of Deggendorf Institute of Technology.

(4) Should an end-of-module examination comprise multiple module component examinations, a grade of "nicht ausreichend" ("insufficient") awarded in one module component examination may not be offset by a higher grade in another.

Section 9
Master's thesis and colloquium

(1)   Attainment of the master's degree is contingent on a master's thesis being written. In their thesis students are to demonstrate, through an individual academic paper, their ability to apply the knowledge and skills acquired during the study programme to tasks of a complex nature.

(2)   Students wishing to register to write their master's thesis must have attained at least 30 ECTS points.

(3)   1The time between the topic being assigned and the master's thesis being submitted shall be six months. 2The submission deadline may be extended by the Examination Committee upon application of a corresponding application and agreement with the examiner where pressing reasons apply.

(4)   The master's thesis may be repeated once if the student does not pass on their first attempt.

(5)   The master's thesis may be written in English or German.

(6)   The thesis is followed by a master's colloquium. 2As part of the colloquium, students explain their master's thesis and discuss its content and approach. 3The duration of the colloquium is 30 minutes.

Section 10
Certificate

On passing the master's examination, a corresponding certificate is issued in line with the sample shown in the appendix to the General Examination Regulations of Deggendorf Institute of Technology.

Section 11
Academic degree and diploma supplement

(1)   Based on the successful completion of the master's examination, the academic degree "Master of Engineering", abbreviated as: "M. Eng." shall be awarded.

(2)   A certificate on the awarding of the academic degree shall be issued according to the respective template given in the appendix to the General Examination Regulations of Deggendorf Institute of Technology.

(3)   The certificate will be accompanied by an English translation and a Diploma Supplement outlining the essential course content forming the basis of the degree, the progression of the studies, and the qualification obtained by virtue of the degree.

Section 12
Coming into effect

These study and examination regulations enter into force on 8 May 2024. They apply to all students commencing the degree programme as of the 2025 summer semester.

Appendix to the study and examination regulations for the master's programme of Automotive Software Engineering at Deggendorf Institute of Technology

Module no.	Module name	Course no.	Course name	SWS	1. Sem.	2. Sem.	3. Sem.	ECTS credits per	ECTS	Type of instruction	Prerequisites for admission (ZV)	Examination format	Examination duration
	M. Eng. Automotive Software Engineering			**Weekly semester hours (SWS)**								**Examinations**	
ASE-01	Bildverstehen *Computervision*			**4**	4			**5**	**5**	SU		PrA	
ASE-02	Digital Car / Innovationsmangement & Kundendesign *Digital Car / Innovation Management & Customer Design*			**4**	4			**5**	**5**	SU/Pr		PoP	
ASE-03	Advanced Driver Assistance Systems *Advanced Driver Assistance Systems*			**4**	4			**5**	**5**	SU/Pr		PoP	
ASE-04	Mobile Applikationen & Interaktionsdesign im Fahrzeug *Mobile Aplications & Interaction Design in Vehicles*			**4**	4			**5**	**5**	SU/Pr		PoP	
ASE-05	Fachsprache: Deutsch oder andere Fremdsprache * *Compulsory Language: German or other foreign language**			**4**	4			**4**	**4**	S/SU/Ü		schrP	60/90 min
ASE-06	Wahlpflichtfach 1 *Compulsory Elective 1*			**4**	4			**5**	**5**	Type of instruction for the selected		Type of examination for the selected	
ASE-07	Künstliche Intelligenz und Software-Entwicklung *Artificial Intelligence and Software Development*			**4**		4		**5**	**5**	SU		PoP	
ASE-08	Automotive Software Engineering *Automotive Software Engineering*			**4**		4		**5**	**5**	SU		schrP	90 min
ASE-09	Projekt *Project*			**4**		4		**6**	**6**	Pro		PoP	
ASE-10	Wahlpflichtfach 2 *Compulsory Elective 2*			**4**		4		**5**	**5**	Type of instruction for the selected module		Type of examination for the selected module	
ASE-11	Drahtlose und Car2X-Kommunikation *Wireless and Car2X-Communication*			**4**		4		**5**	**5**	SU/Pr		PoP	
ASE-12	Automotive Microcontroller *Automotive Microcontroller*			**4**		4		**5**	**5**	SU/Pr		PoP	
ASE-13	Automobilkommunikation Architektur (inCar) *Automotive Communication Architecture (inCar)*			**4**			4	**5**	**5**	SU/Pr		PoP	
	Masterarbeit *Master's Thesis*		Masterarbeit *Master's Thesis*				x	**23**	**25**			MA	
			Kolloquium *Master's colloquium*	**2**			2	**2**				Präs	20 min
	Total SWS			**54**	24	24	6						
	Total ECTS				29	31	30	90	**90**				
as of	**30/04/2024**												

International students will receive their ECTS starting from level German B1/ part 1 + 2. Native speakers of German or international students with German language skills of level C1 as per the Common European Reference Framework for Languages can select any two foreign language courses of their choice from the catalogue of the Language Centre.

Abbreviations:							
ECTS	European Credit Transfer System	schrP	Written examination			SU	Seminar-based lesson
SWS	Weekly semester hours	PStA	Written assignment			S	Seminar
ZV	Admission requirements	Präs	Presentation			Ü	exercise class
		PoP	Portfolio examination			Pr	Internship
		MA	Master's thesis			Pro	Project

Issued based on the resolution of the Faculty Council of the Faculty of Artificial Intelligence at Deggendorf Institute of Technology of 24 April 2024, the approval of the university management of 08 May 2024 and the regulatory approval of the Vice-President of Deggendorf Institute of Technology of 17 September 2024.

Signed
Prof. Dr. Marcus Herntrei
Vice-President

These by-laws were recorded at Deggendorf Institute of Technology on 17 September 2024. They were duly posted on 17 September 2024. Their day of announcement is therefore 17 September 2024.