Study and Examination Regulations
for the Bachelor's Degree Programme
Electromobility, Autonomous Driving and Mobile Robotics – International, B.Eng.
at Deggendorf Institute of Technology

of 26 April 2023

Based on Articles 9, 80(1), 84 (2) Sentence 1 of the Bavarian Higher Education Act (BayHSchG) of 05 August 2022 (GVBI. [law and official gazette] 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 study programme

(1) This international Bachelor's degree programme is primarily aimed at foreign students who, alongside receiving professional education and training, are expected to acquire sound knowledge of the German language as early as in the first three semesters. Doing so should not only enable them to hear lectures in German as of the fourth semester but also open the door to successful entry into the German labour market. Knowledge of German is furthermore a fundamental pre-requisite for long-term integration into German society. In terms of the professional education and training aspect of the degree programme, practice-based instruction founded on scientific findings and methods will be employed with the aim of enabling students to pursue a career as an electrical and electronic engineer in the mobility applications field in which they can act on their own responsibility. Extensive training in the core subjects will enables students to discern the essential linkages and acquire the type of flexibility needed in order to keep pace with the rapidly advancing technical development, especially with regard to the "mobility" field. The training that they receive in the relevant subjects is designed to qualify students to recognise the impact that the realised mobility applications have on the environment and society so as to avoid any detrimental effects to the greatest extent possible.

(2) Following their collective studies, students can then opt for one of two fields of specialisation depending on their personal preference. Irrespective of the field of specialisation chosen, the degree programme aims to qualify students to perform engineering activities in the following fields of work:

- Development (conceptualisation, design, calculation, simulation and construction) of hardware and software;
- Manufacturing (work preparation, production);
- Project engineering;

- Sales (customer consulting and project management);
- Assembly, commissioning and service;
- Operation and maintenance;
- Monitoring and assessment.

(3) Career possibilities especially present themselves in companies operating in the automotive and automotive parts industries but equally in administrative bodies in the public sector and also in independent practice. Care will be taken to deliver broad-ranging, qualified basic training that will enable successful graduates to work in a variety of professions. Students will additionally acquire a deeper knowledge of a field relating to mobile applications and electrical engineering.

Section 2
Structure of the programme, standard period of study

(1) The standard period of study is eight semesters, seven of which are theory-based and one is practical. The internship semester is the sixth semester of the degree programme.

(2) Classes held in the first three semesters will all be conducted in English. As of the fourth semester, the language of tuition and that applied in the corresponding examinations will be German, the only exceptions being the Physics 2 and Real-Time Systems courses.

(3) German courses offered during the first three semesters will enable international students to reach B2 language proficiency under the Common European Framework of Reference. German students will be required to attend other foreign language courses.

(4) A total of 240 ECTS credits must be attained.

(5) As of the fourth semester, the degree programme is split to offer the following specialisations:

- Electromobility (EM)
- Autonomous driving / mobile robotics (FR)

(6) One of the fields of specialisation, either EM or FR, is to be selected. Students will make their selection during the fifth semester of the programme. Students not making a choice will be assigned to a field of specialisation.

Section 3
Qualification requirements

The following language proficiency must be proven in order to be admitted to this degree programme:

- German: Where German is not the native language, proof of Level A1 German, as defined under the Common European Framework of Reference for Languages, is to be provided.

- English: Where English is not the native language, proof of Level B2 English, as defined under the Common European Framework of Reference for Languages, is to be provided.

In terms of proof of this, the regulations in section 3 of the Framework Examination Regulations for additional training in foreign languages and compulsory elective subjects of a general academic nature at Deggendorf Institute of Technology shall apply in the currently valid version.

Section 4
Modules and courses

(1) The degree programme consists of modules, which can be made up of thematically related courses. Each module is assigned ECTS points which reflect the time of study required of the students.

(2) The modules, the lectures, their number of hours, the type of courses, the examinations and the ECTS credits are specified in the Appendix to these by-laws.

(3) All modules consist of compulsory modules or compulsory 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.

(4) There is no guarantee that the scheduled specialisations and compulsory elective modules will actually be offered. Likewise, no rights or entitlements exist to the related courses being held in the event of insufficient student numbers.

Section 5
Curriculum

The responsible faculty, currently the Faculty of Electrical Engineering and Media Technology (EMT), will prepare a curriculum that ensures the relevant courses are offered and provides detailed information on the course of the programme to students.

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 credits;
2. the names of the compulsory and compulsory elective modules as well as their respective number of weekly hours per semester;
3. the form of instruction used in each individual module, provided that this has not been conclusively specified in Appendix 2;
4. the examination format and exam duration;
5. detailed provisions for proofs of performance and attendance.

Section 6
Basic modules

Study and examination achievements up to a scope of 60 ECTS credits, which were acquired in a similarly named or related bachelor's degree programme at a state or state-recognised university of applied sciences in Bavaria in basic modules of the degree programme, shall be credited upon application without further examination to the basic modules in a bachelor's degree programme at the admitting university. The basic modules of this degree programme are marked with an 1) in the curriculum.

Section 7
Minimum ECTS score requirement (GOP)

By the end of the second semester, the students must have achieved first examination results in the following modules:

- Mathematics 1
- Basics of Electrical Engineering and Information Technology 1

for the first time. Past this deadline, the missing examination performance in any examinations of the above-mentioned minimum ECTS score requirement not yet taken will be rated "failed".

Section 8
Admission to various stages of the degree programme

(1) Admission to the B1 German course and the examination is only permissible if the A2 German course and examination have been passed and an A2 German certificate, as defined by the Common European Framework of Reference, is presented.

(2) Admission to the B2 German course and the examination is only permissible if the B1 German course and examination have been passed and an B1 German certificate, as defined by the Common European Framework of Reference, is presented.

(3) Admission to the examinations as of the fourth semester is only permissible if the B2 German examination has been passed and a B2 German certificate, as defined by the Common European Framework of Reference, can be proven.

(4) Admission to the Electrical Metrology practical in the fourth semester is only permissible if at least 42 ECTS credits have been attained and the examinations in at least two of the modules Mathematics 1, Physics 1 and Basics of Electrical Engineering and Information Technology 1 have been passed.

(5) Students are to choose their field of specialisation in the fifth semester of the degree programme. Students not making a choice will be assigned to a field of specialisation per a decision to be rendered by the examination committee.

(6) Students require at least 80 ECTS credit points before they can commence their chosen specialisation.

Section 9
Internship semester

(1) The practical semester comprises a minimum of 20 but no more than 24 weeks.

(2) If the training objective is not affected, then - by way of exception - students need not make up for interruptions in practical work if they are not responsible for these interruptions (e.g. shutdown, illness) and if the total number of days lost due to the interruption is not more than five working days. In the case of a reserve duty training exercise, the make-up period shall be waived if it does not last more than ten working days. Students must prove that they are not responsible for the interruption. Where interruptions exceed five or ten working days respectively, the missing days must be made up for in total. Work completed as overtime can offset interruptions.

(3) Students may only be admitted to the practical semester if they have attained at least 70 ECTS credits.

Section 10
Assessment of examination performance; overall examination grade

(1) ECTS credits 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 credits 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.

(5) The EM-21 internship semester is only awarded a pass grade ("bestanden") or fail grade ("nicht bestanden").

Section 11
Bachelor's thesis

(1) When writing their bachelor's thesis, students will be required to demonstrate their ability to apply unassisted the knowledge and skills they have acquired in the course of their studies to complex tasks.

(2) Students having acquired at least 160 ECTS credits are eligible to register for their bachelor's thesis.

(3) The completion time for the bachelor's thesis is six months.

(4) The bachelor’s thesis is to be written in German.

Section 12
Certificate

On passing the bachelor’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 13
Academic degree and diploma supplement

(1) Based on the successful completion of the bachelor’s examination, the academic degree "Bachelor of Engineering", abbreviated as: “B.Eng.” is 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 a Diploma Supplement outlining, in particular, 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 14
Coming into effect

These Study and Examination Regulations enter into force on 01October 2023. They apply to all students commencing the degree programme as of the 2024 summer semester.

Appendix to the Study and Examination Regulations for the Bachelor's degree programme Electromobility, Autonomous Driving and Mobile Robotics, International at Deggendorf Institute of Technology

Bachelor's degree programme Electromobility, Autonomous Driving and Mobile Robotics, International				Semester hours per week (SWS)												Examinations		
Module No.	**Name of module**	**Course no.**	**Course Name**	**SWS**	**1. Sem.**	**2. Sem.**	**3. Sem.**	**4. Sem.**	**5. Sem.**	**6. Sem.**	**7. Sem.**	**8. Sem.**	**ECTS per course**	**ECTS**	**Type of instruction**	**Admission requirement**	**Exam format**	**Examination duration**
EMI-01[1),2)]	Mathematics 1	EMI 1101		8	8									9	SU/Ü		schrP	90min.
EMI-02[1),2)]	Basics of Electrical Engineering and Information Technology 1	EMI 1102	GET1	5	5								6	8	SU/Ü/Pr		schrP	90min.
		EMI 1103	Basics of Digital Technology	2	2								2		SU/Ü/Pr		schrP	60min.
EMI-O3[3)]	German A2	EMI 1104		8	8									10		A1 certificate, 75% compulsory attendance	schrP	120min.
EMI-04	Self-organisation During Your Studies	EMI 1105		2	2									3	SU/Ü		eTN	
EMI-05[1),2)]	Mathematics 2	EMI 2101		6		6								7	SU/Ü		schrP	90min.
EMI-06[1),2)]	Basics of Electrical Engineering and Information Technology 2	EMI 2102	GET2	5		5							6	10	SU/Ü/Pr	TN Praktikum	schrP	90min.
		EMI 2103	Computer Science 1	3		3							4		SU/Ü/Pr		schrP	90min.
EMI-07[3)]	German B1	EMI 2104		8		8								10	SU/Ü/Pr	A2 certificate, 75% compulsory attendance	schrP	120min.
EMI-08	General Elective of a General Academic Nature (AWP)	EMI 2105		2		2								2				
EMI-09[1),2)]	Basics of Electrical Engineering and Information Technology 3	EMI 3101	GET3	5			5						5	8	SU/Ü/Pr		schrP	90min.
		EMI 3012	Computer Science 2	3			3						3		SU/Ü/Pr		schrP	90min.
EMI-10[1),2)]	Materials Science	EMI 3103		4			4							5	SU/Ü/Pr		schrP	90min.
EMI-11[1),2)]	Physics 1	EMI 3104		5			5							6	SU/Ü/Pr		schrP	90min.
EMI-12[3)]	German B2	EMI 3105		8			8							10	SU/Ü/Pr	B1 certificate, 75% compulsory attendance	schrP	120min.
EMI-13	General Elective of a General Academic Nature (AWP)	EMI 3106		2			2							2	SU/Ü/Pr			
EMI-14	Statistics and Stochastic	EMI 4101		4				4						5	SU/Ü		schrP	90min.
EMI-15	Electronic components	EMI 4102		4				4						5	SU/Ü/Pr	TN Praktikum	schrP	90min.
EMI-16	Control Technology 1	EMI 4103		4				4						5	SU/Ü/Pr	TN Praktikum	schrP	90min.
EMI-17	Electrical Metrology	EMI 4104	Electrical Metrology	5				5					6	6	SU/Ü		schrP	90min.
		EMI 4105	Practical course: Electrical Metrology	3				3					0		Pr		eTN	
EMI-18[1),2)]	Physics 2	EMI 4106		5				5						5	SU/Ü/Pr	TN Praktikum	schrP	90min.
EMI-19	Subject-Specific Elective (FWP)	EMI 4107	FWP1	4				4						5				
EMI-20	Computer Technology	EMI 5101	Microcomputer Technology	4					4				5	9	SU/Ü/Pr		PStA	
		EMI 5102	Real-time Systems [1),2)]	3					3				4		SU/Ü/Pr		schrP	90min.
EMI-21	Control Technology 2	EMI 5103		4					4					5	SU/Ü/Pr	TN Praktikum	schrP	120min.
EMI-22	Power Electronics 1	EMI 5104		4					4					5	SU/Ü/Pr	TN Praktikum	schrP	90min.
EMI-23	Automotive Bus Systems	EMI 5105		4					4					5	SU/Ü/Pr	TN Praktikum	schrP	90min.
EMI-24	Subject-Specific Elective (FWP)	EMI 5106		4					4					5				
EMI-25	Internship	EMI 6101	Internship	x						x			23	25	Pr			
		EMI 6102	Practical seminar	2						2			2		S		(1) Presentation, (2) written report of at least 10 pages DIN A4	15min.
EMI-26	Practical Courses Taught as Seminars (PLV)	EMI 6103	PLV1	2						2			2.5	5	SU/Ü		eTN	
		EMI 6104	PLV2	2						2			2.5		SU/Ü		eTN	
EMI-27	Electrical Machines	EMI 7101		4							4			5	SU/Ü/Pr	TN Praktikum	schrP	90min.
EMI-28	Electromagnetic Compatibility	EMI 7102		4							4			5	SU/Ü/Pr	TN Praktikum	schrP	90min.
EMI 29	Image Processing	EMI 7103		4							4			5	SU/Ü/Pr	TN Praktikum	schrP	90min.
EMI-30	Bachelor's Module	EMI 8101	Bachelor's thesis	x								x	12	14	BA		BA	
		EMI 8102	Seminar	2								2	2		S		mP	30min.
EMI-31	Sensor Technology/Optics	EMI 8103		4								4		5	SU/Ü/Pr	TN Praktikum	schrP	90min.
EMI-32	General Elective of a General Academic Nature (AWP)	EMI 8104		2								2		2				
EMI-33	Key Qualifications	EMI 8105	Business Administration	2								2		3	SU		schrP	90min.
		EMI 8106	Scientific Working Methods	2								2		3	SU/ S		PStA	
		EMI 8107	Sustainable Mobility	2								2		3	SU/ S		PStA,schrP,mP	
Specialisation Electromobility																		
EMI-EM 34	Power Electronics 2	EMI-EM 7104		4							4			5	SU/Ü/Pr	TN Praktikum	schrP	90min.
EMI-EM-35	Battery Technologies	EMI-EM 7105		4							4			5	SU/Ü/Pr	TN Praktikum	schrP	90min.
EMI-EM 36	Charging Stations, Hydrogen Technology	EMI-EM 7106		4							4			5	SU/Ü/Pr	TN Praktikum	schrP	90min.
Specialisation Autonomous Driving / Mobile Robotics																		
EMI-MR 34	Model-based Controller Design and Validation	EMI-MR 7104		4							4			5	SU/Ü/Pr		schrP	90min.
EMI-MR 35	Autonomous Driving	EMI-MR 7105		4							4			5	SU/Ü/Pr		schrP	90min.
EMI-MR 36	Mobile Robots	EMI-MR 7106		4							4			5	SU/Ü/Pr	TN Praktikum	schrP	90min.
	Total SWS			172	25	24	27	29	23	6	24	14						
	Total ECTS			240	30	29	31	31	29	30	30	30		240				
as of	**09/10/2023**																	

Abbreviations:																	
ECTS	European Credit Transfer System	schrP	Written examination												S/SU/Ü	Seminar/seminar- based lesson, exercise class	
SWS	Semester hours per week	mP	Oral examination												S	Seminar	
ZV	Admission requirements	PStA	Written assignment												SU	seminar-style lesson	
1)	Basic modules	Präs	Presentation												Ü	exercise class	
2)	Language of instruction English	PB	internship report														
3)	In lieu of the German course, native speakers of German are required to select a language course from the Language Centre catalogue which, where English is concerned, must be a level higher than B2.	eTN	successful participation														
		BA	Bachelor's thesis														
		MA	Master's thesis														

Issued on the basis of the enactment passed by the Senate of Deggendorf Institute of Technology on 26 April 2023, the degree programme announcement lodged on 3 August 2023 with the Bavarian State Ministry for Science and Arts as well as the supervisory approval of the Vice-President of Deggendorf Institute of Technology of 01 October 2023.

Signed
Prof. Waldemar Berg
Vice-President

These by-laws were recorded at Deggendorf Institute of Technology on 01 October 2023. They were duly posted on 01 October 2023. Their day of announcement is therefore 01 October 2023.