

**Study and Examination Regulations for the Master
programme of Electrical Engineering and
Information Technology at the Deggendorf
Institute of Technology**

Dated 1st October 2020

On the basis of Art. 13 Para. 2 Clause 2, 58 Para. 1, 61 Para. 2 Clause 1 of the Bavarian University and College Act (BayHSChG) of 23rd May 2006 (GVBl. p. 245, Bay RS 2210-1-1-WK), last amended by § 1 Para. 186 of the Ordinance of 26th March 2019 (GVBl. p. 98), the Deggendorf Institute of Technology enacts the following by-laws:

**§ 1
Aim of the study programme**

The Master programme of Electrical Engineering and Information Technology is intended to enable graduates of the Diploma or Bachelor programmes to substantiate the knowledge that they have acquired so far with theoretical and application-oriented knowledge, and thereby be especially well-equipped to meet the requirements of modern development tasks in high-tech areas. The course builds on the previous courses and imparts a balanced set of essential further technical skills in sub-areas of electrical engineering. This should further qualify the graduates to work creatively in applied research and development.

**§ 2
Structure of the course, standard period of study**

- (1) The standard period of study is three semesters. A total of 90 ECTS credits, i.e., credits as per the European Credit Transfer and Accumulation System (ECTS) will be awarded on successful completion of the studies. The course ends with a Master's thesis.
- (2) Two major subjects are offered, which will enable students to align themselves individually with the desired professional area of work. Students have to choose between the two major subjects of
 - Electronics and Communications Engineering Systems (ENS) and
 - Automation Engineering (AT)

at the start of the programme.

§ 3

Qualification requirements

- (1) The qualification requirements for admission to the Master programme are as follows:
 1. Successful completion of a Bachelor or Diploma programme in the disciplines of electrical engineering, information technology or related disciplines with 210 ECTS credits or an equivalent degree. The Examination Committee decides on the equivalence of degrees and grades

and
 2. Proof of eligibility for the specific study programme as part of a process, in accordance with § 5 of this by-law.
- (2) Proof of the following language skills has to be provided for this study programme:
 1. German: If German is not the mother tongue, proof of German language skills of level A2 as per the Common European Framework of Reference for Languages has to be provided.
 2. English: If English is not the mother tongue, proof of English language skills of level B2 as per the Common European Framework of Reference for Languages has to be provided.

Regarding the proof, the regulations set out in § 3 of the framework examination regulations for additional training in foreign languages and general academic elective subjects at the Deggendorf Institute of Technology shall apply as amended.

§ 4

Proof of ECTS credits not yet obtained

- (1) ¹If applicants provide evidence of an admission-substantiating university degree, for which less than 210 ECTS credits but at least 180 ECTS credits have been awarded or are to be regarded as equivalent, then proof of the ECTS credits not yet obtained is a prerequisite for passing the Master's examination. ²ECTS credits not yet obtained, which must be obtained by the start of the third semester, can be proven upon request to the Examination Committee through an additional relevant professional experience or by participating in relevant university courses. ³Proof for each variant may be furnished only once. Proof can be provided for a maximum of 30 ECTS credits.

⁴The following conditions apply for the proof:

1. relevant professional experience
2 years of relevant professional experience in the field corresponds to up to 30 ECTS credits.
The professional experience should be relevant and related to the subject.

The contents of the profession should be in line with the completed or desired university degree.

2. specialised internship

Completion of a 6 month full-time internship in the fields of electrical engineering or information technology or related areas corresponds to up to 30 ECTS credits and can be taken into account for the course after discussion with the concerned Subject Support.

3. relevant college modules

Specific modules can be selected from the range of courses offered under the study programme of Electrical Engineering and Information Technology after consultation with the Subject Support, provided their content does not essentially overlap with the content of the Bachelor programme. This regulation pertains exclusively to the initial degree that the applicant has submitted.

The relevant study and examination regulations are decisive.

§ 5

Aptitude assessment

- (1) Programme-specific aptitude is decided through a written test that can also be conducted online. The test consists of complex tasks in the relevant topics of mathematics, physics and the basics of electrical engineering and information technology. The tasks are set and evaluated by a Selection Committee consisting of at least two professors of the faculty, and is appointed by the Faculty Council of the Faculty of Electrical Engineering and Media Technology for a period of two years.
Programme-specific aptitude is considered as proven if the test is completed "successfully".
- (2) The Selection Committee can allow a candidate to take an aptitude test if he/she has successfully completed a Bachelor or diploma programme in electrical engineering, information technology or related disciplines with an overall examination result of at least 2.5 or has above-average knowledge in mathematics, physics and the basics of electrical engineering.
- (3) The procedure for determining programme-specific aptitude is conducted every semester. Participants are invited to this via email.
- (4) Applicants who are unable to furnish proof of programme-specific aptitude may take the test once again in the next semester. In justifiable cases of exception, taking the test at a later point in time will also be allowed. The test cannot be repeated thereafter.

§ 6

Modules and proof of performance

- (1) The course is modular in structure. A module is a cluster of temporally connected teaching and learning units that are complete in themselves and that can be reviewed; they are put together considering technical and methodical aspects. A module can consist of sub-modules. Modules and sub-modules carry ECTS credits.
- (2) Compulsory and elective modules, their weekly semester hours and ECTS credits, the type of courses and nature of examinations are set out in the annexes to these study and examination regulations. Details are regulated by the curriculum.
- (3) All modules are either compulsory modules or elective modules:
 1. Compulsory modules are those modules of a programme that are mandatory for all students;
 2. Elective modules are modules that are offered as alternatives to individuals or groups. Each student must select certain modules from these in accordance with these study and examination regulations. The selected modules are treated as compulsory modules.
- (4) Courses and examinations in compulsory subjects are conducted in English.
- (5) The Master's programme may not be offered if the number of participants is insufficient.

§ 7

Curriculum

- (1) The Faculty of Electrical Engineering and Media Technology 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 decided by the Faculty Council and must be announced within the university. New regulations, if any, must be announced at the latest at the beginning of the lecture period of the semester in which these regulations are to be implemented for the first time.
- (2) In particular, the curriculum contains regulations and information regarding:
 1. the distribution and number of weekly semester hours and ECTS credits per module/sub-module and semester
 2. the catalogue of compulsory modules and subject-specific elective modules
 3. the qualification goals and teaching contents of the modules/sub-modules
 4. the structure and organisation of courses in individual modules/sub-modules
 5. detailed regulations for examinations and proofs of attendance
- (3) All key aspects, elective modules and optional modules may not actually be offered.

Likewise, such courses may not be conducted if the number of participants is insufficient.

§ 8

Evaluation of individual examination performances, computation of the final grade, overall examination result, Examination Committee

- (1) For the transfer of credits that have been acquired at other universities, please refer to § 4 of the General Examination Regulations of the Deggendorf Institute of Technology.
- (2) The Master's examination is considered as passed if the minimum grade of "satisfactory" or the grade "completed successfully" is obtained in all modules including the Master's thesis, and hence the 90 ECTS credits necessary for passing the Master's examination are obtained.

§ 9

ECTS credits, overall examination grade

- (1) For successfully completed exams, ECTS credits are awarded in accordance with the annex.
- (2) The overall examination grade is calculated by taking the weighted arithmetic mean of individual grades. The weight of an individual grade is the same as the number of ECTS credits allocated to the subject for which the grade was awarded.
- (3) In addition to the overall examination grade in accordance with Para. 2, a relative grade based on the numerical value attained is shown according to the ECTS user guide in accordance with the regulations contained in § 8 Para. 6 of the General Examination Regulations of the Deggendorf Institute of Technology.

§ 10

Master's thesis

- (1) In the master's thesis, students should demonstrate their ability to work independently on practical engineering problems in the areas of electrical engineering and information technology using the skills that were acquired during the course, within a specified period of time and by applying scientific principles and methods.
- (2) The interval between the announcement of the topic and the submission of the Master's thesis is six months. Upon request, this term can be extended for good cause in special cases by the Examination Committee.
- (3) The Master's thesis can be written in a foreign language with the consent of the Faculty Council.

- (4) 25 ECTS credits should have been obtained as a pre-requisite for the Master's thesis.

§ 11

Master's examination certificate, academic degree and diploma supplement

- (1) A certificate indicating the successful completion of the Master's examination and a Master's degree certificate are issued in the amended templates specified in the General Examination Regulations of the Deggendorf Institute of Technology. The certificate template will be filled according to these study and examination regulations.
- (2) Based on the successfully completed Master's examination, the Deggendorf Institute of Technology will award the degree of "Master of Science", abbreviated as "M.Sc.". A certificate will be issued as per the respective template in the annex to the General Examination Regulations of the Deggendorf Institute of Technology.
- (3) A diploma supplement, which describes in particular the essential course content underlying the degree, the course of studies and the qualification obtained with the degree, is enclosed with the certificate.

§ 12

Entry into force and transitional provisions

These study and examination regulations enter into force on 1st October 2020. They shall apply for all students who start their studies in the 2020/21 winter semester.

Annex

to the Study and Examination Regulations for the Master programme of Electrical Engineering and Information Technology at the Deggendorf Institute of Technology

Overview of the modules

Overview of module/course numbers, module/course descriptions, SWS and ECTS			Module	1st Sem.	2nd Sem.	3rd Sem.	ECTS	Weighting for module grade	Type of course	Pre-requisites for admission/examination performances
Module	Course no.	Module/course	Weekly semester hours (SWS)							
ET-01	ET 1101	Advanced programming techniques	4	4			5		SU/Ü	GMP schrP 90 min.
ET-02	ET 1102	Numerical methods	4	4			5		SU/Ü	GMP schrP 90 min.
ET-03	ET 2101	Special mathematical methods	4		4		5		SU/Ü	GMP schrP 90 min.
ET-04	ET-2102	Elective subjects *	12	8	4		15		SU/Ü/Pr	
ET-06	ET 3101	Selected topics in operations management and HR	4			4	5		SU/Ü	GMP schrP 90 min.
ET-07	ET 3102	Foreign language course Master **	4	4			5		SU/Ü	GMP schrP 60/90 min.
ET-08		Master module	2			2	25			
	ET 3103	Master seminar				2		2	S	mdIP
	ET 3104	Master's thesis				X		23		
Major Subject Electronics and Communications Engineering Systems (ENS)										
ET-09	ET 2103	Selected topics in micro-electronics and nano-electronics	4		4		5		SU/Ü/Pr	TN of internship/GMP
ET-10	ET 1105	Selected topics in opto-electronics and laser technology	4	4			5		SU/Ü/Pr	TN of internship/GMP
ET-11	ET 2104	High frequency and radio engineering systems	4		4		5		SU/Ü	GMP schrP 90 min.
ET-12	ET 2105	Special devices and circuits	4		4		5		SU/Ü	GMP schrP 90 min.
ET-13	ET 2106	Signals and systems in communications engineering	4		4		5		SU/Ü	GMP schrP 90 min.
Or										
Major subject Automation Engineering (AT)										
ET-14	ET 1106	Advanced modelling and simulation	4	4			5		SU/Ü/Pr	TN of internship/GMP
ET-15	ET 2107	Selected topics in control techniques	4		4		5		SU/Ü/Pr	GMP schrP 90 min.
ET-16	ET 2108	Selected topics in non-contact sensor systems	4		4		5		SU/Ü/Pr	TN of internship/GMP
ET-17	ET 2109	Automobile and industrial electrical drive systems	4		4		5		SU/Ü	GMP schrP 90 min.
ET-18	ET 2110	Advanced automation engineering	4		4		5		SU/Ü/Pr	TN of internship/GMP
Total weekly semester hours per semester				24	24	6				
Total ECTS credits per semester				30	30	30				

*: Students who select the major subject "ENS" but have not studied the subjects "High Frequency Electronics" and "Communications Engineering 2" from "Communications Engineering" during the Bachelor's programme will have to clear these subjects from the Bachelor's programme in Electrical Engineering and Information Technology (harmonisation courses) to consolidate their basic knowledge.

Students who select the major subject "AT" but have not studied the subjects "Power Electronics" and "Control Techniques 2" from "Automation Engineering" during the Bachelor's programme will have to clear these subjects from the Bachelor's programme in Electrical Engineering and Information Technology (harmonisation courses) to consolidate their basic knowledge.

All other students, who have not acquired a Bachelor's degree in Electrical Engineering and Information Technology from the DIT will have to select elective subjects from the list of elective subjects in the curriculum.

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International students will receive their ECTS starting from level German B1/1st + 2nd part. 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 and Electives Centre.

Abbreviations

BA	Bachelor's thesis
ECTS	European Credit Transfer System
GMP	Examination for the complete module
LN	Coursework-related proof of performance,
mdIP	Oral exam
Pr	Internship
PstA	Student research
project S	Seminar
schrP	Written exam
SU	Seminar-based class
SWS	Weekly semester hours
TN	Proof of attendance
Ü	Tutorial
ZV	Pre-requisites for admission

Issued based on the resolution of the Senate of the Deggendorf Institute of Technology dated 29.04.2020 and the regulatory approval of the Vice President of the Deggendorf Institute of Technology dated 01.10.2020.

Signed by
Prof. Waldemar Berg,
Vice President

These by-laws were laid down on 01.10.2020 at the Deggendorf Institute of Technology. This was announced by means of a notice on 01.10.2020. Day of announcement is thus 01.10.2020.