

**Study and Examination Regulations  
for the Master's Degree Programme  
Applied Computer Science, M.Sc.  
at Deggendorf Institute of Technology**

**dated 19 February 2025**

Based on Art. 9, 80 para. 1, 84 para. 2 (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 dated 23 June 2023 (GVBl. p. 251) and by Section 2 of the Act of 24 July 2023 (GVBl. p. 455), Deggendorf Institute of Technology enacts the following by-laws:

**Section 1  
Aim of the degree programme**

- (1) The master's programme of Applied Computer Science is primarily designed to enable graduates of the bachelor's programmes of Applied Computer Science, Infotronics and other related technical *Diplom* or bachelor's programmes to substantiate the knowledge that they have acquired so far with theoretical and application-oriented knowledge in the field of embedded systems, to thereby be especially well-equipped to meet the challenges of modern development tasks in these high-tech areas. The programme imparts essential advanced technical knowledge in selected areas of computer science and electrical engineering that are necessary for the development of complex embedded electronic systems.
- (2) In addition, the course further qualifies the graduates to work independently and creatively in applied research and development in those areas.

**Section 2  
Admission requirements, programme-specific aptitude**

Eligibility for admission to the master's programme in Applied Computer Science is demonstrated by:

1. Successful completion of a bachelor's or *Diplom* programme in computer science 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 programme-specific aptitude as part of a process in accordance with Section 8 of these by-laws.

### **Section 3** **Proof of language proficiency**

Proof of the following language skills has to be provided for this degree programme:

- German: If German is not the native language, proof of A2 level German language skills as per the Common European Framework of Reference for Languages has to be provided by the end of the programme.
- English: If English is not the native language, proof of B2 level English language skills as per the Common European Framework of Reference for Languages has to be provided with the application.

Regarding the proof, the regulations set out in Section 3 of the general examination regulations for additional instruction in foreign languages and general academic elective subjects at Deggendorf Institute of Technology shall apply in the respective valid version.

### **Section 4** **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 credits have to be obtained.
- (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 5** **Proof of ECTS credits not yet obtained**

If 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. ECTS credits not yet obtained, which must be obtained by the start of the third semester, can be proven upon request to the Examination Committee by completing an additional internship or by participating in subject-relevant university courses. Proof for each variant may be furnished only once. Proof can be provided for a maximum of 30 ECTS credits.

The following conditions apply for the proof:

1. Internship:  
Successful completion of a relevant internship in the field of computer science with a duration of at least 20 weeks.
2. University courses:

Lectures and classes must stem from the subject-relevant undergraduate courses provided by the university. The applicant must consult the responsible academic advisor in advance. The advisor works out an individual concept together with the applicant.

## **Section 6**

### **Modules and courses**

- (1) The degree programme comprises modules that may consist of thematically-related courses. Each module is assigned ECTS credits which reflect the time of study required of the students.
- (2) The compulsory and elective modules, courses, the number of hours for these, the type of courses, the examinations, as well as the ECTS credits, are specified in the Appendix to these by-laws. Regulations of subject-specific compulsory elective modules and compulsory elective subjects of a general academic nature are supplemented by the curriculum.
- (3) All modules consist of compulsory modules, compulsory elective modules or optional modules:
  1. Compulsory modules are those modules of a programme that are mandatory for all students.
  2. Compulsory elective modules are modules that are offered individually or in groups. Students must select certain modules from these in accordance with these study and examination regulations. The selected modules will be treated as compulsory modules.
  3. Optional modules are modules that are not mandatory for achieving the study objective. They may be additionally selected from the courses offered by the Institute.
- (4) There is no guarantee that the scheduled specialisations, compulsory elective modules and optional modules will actually be offered. Similarly, no rights or entitlement exist to the accompanying courses of instruction taking place in the event of insufficient student numbers.
- (5) All compulsory lectures and their examinations are conducted in English. Additional optional modules may be offered in German.

## **Section 7**

### **Curriculum**

The responsible faculty, currently the Faculty of Computer Science, 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 within the university before the semester starts. Changes or new regulations, if any, must be announced at the latest at the beginning of the lecture period of the semester in which these changes are to be implemented for the first time. In particular, the curriculum contains regulations and information regarding:

1. the time allocated for the weekly semester hours, 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 semester hours;
3. 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 type of examination and its duration,
6. detailed provisions for proofs of performance and attendance.

## **Section 8**

### **Proof of programme-specific aptitude**

- (1) Programme-specific aptitude is determined through a written test that can also be conducted online. The test includes complex tasks on relevant topics from mathematics and computer science. The tasks are set and evaluated by a Selection Committee consisting of at least two faculty professors appointed by the Faculty Council of the Faculty of Computer Science for a period of two years. Programme-specific aptitude is considered proven if the test is completed "with success".
- (2) The Selection Committee can allow a candidate to take an aptitude test if they have successfully completed a bachelor's or *Diplom* programme in information technology or related disciplines with an overall examination result of at least 2.5, or if they can demonstrate above-average knowledge in mathematics and computer science.
- (3) The procedure for determining programme-specific aptitude is conducted every semester. Participants are invited for this via e-mail.
- (4) Applicants who are unable to furnish proof of programme-specific aptitude may take the test again once in the next semester. In justifiable cases of exception, students may take the test at a later point in time. The test cannot be repeated thereafter.

## **Section 9**

### **Assessment of examination performance; overall examination grade**

- (1) ECTS credits are awarded for each successfully passed examination. The number of attainable points per exam is shown in the Appendix.
- (2) A student's overall examination grade is calculated using a weighted arithmetic average of their individual grades. The weighting of an individual grade is equal to the number of ECTS credits assigned to the course for which the grade was awarded.
- (3) In addition to the overall grade assigned as per para. 2, a relative grade is awarded based on the numerical value attained, in keeping with the ECTS User Guide, as per the provisions of Section 8(6) 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 10**

### **Master's thesis and colloquium**

- (1) Attainment of the master's degree is contingent on a master's thesis being written. The aim of the thesis is to enable students to demonstrate, through a self-written academic paper, their ability to apply the knowledge and skills acquired during the course to tasks of a complex nature.
- (2) Students who have obtained at least 30 ECTS credits can register for the master's thesis.
- (3) The period between choosing a topic and submission is six months. The 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 can be repeated once if not passed in the first attempt.
- (5) The master's thesis is written in German or English.
- (6) It is followed by a master's colloquium (oral examination). As part of the colloquium, students have to explain their master's thesis and discuss the content and approach. The colloquium is held in front of two examiners. As a rule, these should be the supervisors of the master's thesis. The duration of the colloquium is 30 minutes; the colloquium can be repeated once if not passed in the first attempt.

## **Section 11**

### **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 12**

### **Academic degree and diploma supplement**

- (1) Upon successful completion of the master's examination, the academic degree of "Master of Science", abbreviated "M.Sc.", will be awarded.
- (2) A certificate granting the academic degree shall be issued in accordance with the respective template 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 13**

#### **Coming into effect**

These study and examination regulations enter into force on 15 March 2025. They shall apply for students who will start their studies from the 2025 summer semester.

## Appendix to the study and examination regulations for the M.Sc. Applied Computer Science at Deggendorf Institute of Technology

### Start of studies in the summer semester

M.Sc. Applied Computer Science				Weekly semester hours (SWS)							Examinations		
Module no.	Module name	Course no.	Course name	SWS	1st Sem.	2nd Sem.	3rd Sem.	ECTS per course	ECTS	Form of teaching	Prerequisites for admission (ZV)	Type of examination	Duration of examination
MAI-01	Theoretical Computer Science			6	6				8	SU/Ü		schrP	90 min.
MAI-02	Practical Computer Science			6	6				8	SU/Ü		PoP	
MAI-03	Selected Topics of Embedded Software Development			4	4				5	SU/Ü		PoP	
MAI-04	Special Mathematical Methods			4		4			5	SU/Ü		schrP	90 min.
MAI-05 - MAI-9	Elective 1*) - 5*)					4 each			5 each				
MAI-10	Elective 6*)						4		5			PoP	
MAI-11	FPGA Programming			4	4				5	SU/Ü		PoP	
MAI-12	Elective (AWP) module		Elective (AWP) course I**)	2	2				2				
			Elective (AWP) course II**)			2			2				
MAI-13	Master's module		Master's thesis					23	23			Master's thesis	
			Seminar				2	2	2			mdIP	30 min.
	Total SWS				22	26	6						
	Total ECTS			90	28	32	30						
As of	18 December 2024												

\*) A separate range of courses is usually not offered in the programme in the winter semester. Here, modules from other degree programmes are to be taken according to the curriculum. A total of six elective modules, each worth 5 ECTS credits, must be taken (options and restrictions are set out in the electives list published at the beginning of each semester). In this respect, the study and examination regulations for these and the curricula shall apply as amended.

\*\*) International students will receive their ECTS starting from German level B1 / Part 1 + 2. Native speakers of German or international students with German language skills of level B2 as per the Common European Reference Framework for Languages can select any elective (AWP) courses from the Language Centre course catalogue.

Abbreviations:					
ECTS	European Credit Transfer System		schrP	Written examination	
SWS	Weekly semester hours		mdIP	Oral examination	
ZV	Admission requirement		PoP	Portfolio examination	
			Master's thesis	Master's thesis	
SU	Seminar-based lesson				
S	Seminar				

## Start of studies in the winter semester

M.Sc. Applied Computer Science				Weekly semester hours (SWS)							Examinations		
Module no.	Module name	Course no.	Course name	SWS	1st Sem.	2nd Sem.	3rd Sem.	ECTS per course	ECTS	Form of teaching	Prerequisites for admission (ZV)	Type of examination	Duration of examination
MAI-01	Theoretical Computer Science			6		6			8	SU/Ü		schrP	90 min.
MAI-02	Practical Computer Science			6		6			8	SU/Ü		PoP	
MAI-03	Selected Topics of Embedded Software Development			4		4			5	SU/Ü		PoP	
MAI-04	Special Mathematical Methods			4	4				5	SU/Ü		schrP	90 min.
MAI-05 - MAI-9	Elective 1*) - 5*)				4 each				5 each				
MAI-10	Elective 6*)						4		5			PoP	
MAI-11	FPGA Programming			4		4			5	SU/Ü		PoP	
MAI-12	AW P		AWP II**)	2	2				2				
			AW P I***)			2			2				
MAI-13	Master's module		Master's thesis					23	23			Master's thesis	
			Seminar				2	2	2			mdIP	30 min.
	Total SWS				26	22	6						
	Total ECTS			90	32	28	30						
As of	18 December 2024												

\*) A separate range of courses is usually not offered in the programme in the winter semester. Here, modules from other degree programmes are to be taken according to the curriculum. A total of six elective modules, each worth 5 ECTS credits, must be taken (options and restrictions are set out in the electives list published at the beginning of each semester). In this respect, the study and examination regulations for these and the curricula shall apply as amended.

\*\*) International students will receive their ECTS starting from German level B1 / Part 1 + 2. Native speakers of German or international students with German language skills of level B2 as per the Common European Reference Framework for Languages can select any elective (AWP) courses from the Language Centre course catalogue.

<u>Abbreviations:</u>					
ECTS	European Credit Transfer System		schrP	Written examination	
SWS	Weekly semester hours		mdIP	Oral examination	
ZV	Admission requirement		PoP	Portfolio examination	
			Master's thesis	Master's thesis	
SU	Seminar-based lesson				
S	Seminar				



Issued based on the resolution of the Faculty Council of the Faculty of Computer Science of Deggendorf Institute of Technology dated 22 January 2025, the approval of the university management dated 19 February 2025 and the regulatory approval of the Vice President of Deggendorf Institute of Technology dated 20 February 2025.

Signed by  
Prof. Dr. Marcus Herntrei  
Vice President

These by-laws were recorded at Deggendorf Institute of Technology on 20 February 2025. The recorded by-laws were duly posted on the notice boards on 20 February 2025. Their day of announcement is therefore 20 February 2025.