

**Study and Examination Regulations for the
Master's Degree Programme in
Healthy and Sustainable Buildings (HSB)
at Deggendorf Institute of Technology
Dated 15 March 2022**

On the basis of Art. 13 Para. 2 Clause 2, 58 Para. 1, 61 Para. 2 Clause 1 of the Bavarian Higher Education Act (BayHSchG) dated 23 May 2006 (GVBl. p. 245, Bay RS 2210-1-1-WK), as last amended by Section 1 of the law dated 24 July 2020 (GVBl. p. 382), Deggendorf Institute of Technology enacts the following by-laws:

**Section 1
Aim of the study programme**

- (1) ¹The master's programme in HSB makes it possible to acquire a second degree based on a first higher education degree qualifying for entry into a profession. ²It is intended to qualify students in methods and technologies in the fields of healthy and sustainable buildings, combined with applications in various areas of the construction and real estate industries, and to familiarise them with the different application areas of professional engineering practice. ³It takes into account the existing experience of students from undergraduate courses and their professional practice, and reinforces these experiences.
- (2) ¹The master's programme in HSB is intended to enable graduates of the Diploma or bachelor's programme to deepen the knowledge they have acquired so far with theoretical knowledge so as to be particularly well-equipped to meet the requirements of modern planning, research and development tasks. ²The training is offered by the Faculty European Campus Rottal-Inn.
- (3) ¹The programme deals with what is taught in a bachelor's or Diploma programme in greater depth. ²The aim is to enable graduates to work creatively in planning offices, as well as in research and development departments. ³In addition, particularly qualified students should acquire theoretical foundations that enable them to pursue a doctorate or work in academic fields. ⁴In particular, the programme is geared towards the goal of enabling students to independently work on specific planning, development and application tasks in the field of architecture and engineering in the working environment of a globalised economy.

- (4) ¹The master's programme is designed to prepare students for an international field of activity. ²The courses and examinations of their studies are therefore conducted in English.

Section 2 Structure of the programme

The standard period of study is four semesters.

The programme comprises three theory semesters and concludes with the master's thesis in the fourth semester.

Section 3 Qualification requirements

- (1) ¹Qualification for the master's programme in HSB is demonstrated by
- completing an undergraduate programme at a domestic or foreign university with a minimum of 180 ECTS credits in the disciplines of civil and environmental engineering or architecture, or a degree which is equivalent to such a university degree. ²The Examination Committee decides on the equivalence of degrees.
 - Proof of programme-specific aptitude as part of a process in accordance with Section 4 of these by-laws.
- (2) Additionally, the following language skills are required for this programme:
1. English language skills at level B2 according to the Common European Framework of Reference for Languages.
 2. Knowledge of the German language at level A1 according to the Common European Framework of Reference for Languages must be demonstrated during the course of study and can be acquired while pursuing the programme. Completing the A2 level in German by the end of the master's programme is desired and encouraged.

²Regarding the proof, the regulations set out in Section 3 of the Framework Examination Regulations for additional training in foreign languages and general elective subjects at Deggendorf Institute of Technology shall apply as amended.

Section 4

Proof of programme-specific aptitude

- (1) The proof of programme-specific aptitude consists of four selection criteria:
a) the final grade of the bachelor's thesis, b) professional experience, c) a written test and d) an personal selection interview. The weight of the four criteria is as follows:
a) 30 points, b) 10 points, c) 30 points and d) 30 points.
- (2) The points system for the bachelor's grade is as follows: Grades from 1,0 – 1,7 correspond to 30 points. Grades from 1,8 – 2,5 correspond to 15 points. There are no points for grades from 2,5.
The points system for professional experience is as follows: Professional experience of two or more years corresponds to 10 points. Professional experience of one to two years corresponds to 5 points.
- (3) The two-part test is supplementary to the assessment of the bachelor's final grades, the relevant professional experience, in particular, the proof of the ability to conduct scientific work, and thus to determining whether the student fulfils the special qualitative requirements that are necessary for the successful completion of the master's programme in "Healthy and Sustainable Buildings".
- (4) Applicants, who fulfil the formal criteria of qualification for the degree programme, are invited to participate in the procedure for determining programme-specific aptitude. The invitation is sent by e-mail. The procedure for determining programme-specific aptitude consists of a 60-minute written exam, which can be conducted online if necessary, and a selection interview of max. 20-minutes, which can also be carried out virtually if required. ²The entire procedure is conducted by two lecturers of Deggendorf Institute of Technology, at least one of whom performs duties related to the master's programme of "Healthy and Sustainable Buildings". ³The final appointment is made by the Examination Committee.
- (5) ¹The object of the written examination is a synopsis of the bachelor's thesis, which should present the hypothesis, methodology, conclusions and the discussion of conclusions. ²Alternatively, a topic can be specified, which focusses on the identification and evaluation of challenges in the area of sustainability, particularly in the construction sector, as well as on the ability to present and discuss solutions. ³The third way is to ask multiple-choice questions related to the subject area. ⁴A student is deemed to have passed the written examination "successfully" if they obtained at least 20 of the 30 maximum points to be awarded.

The following assessment criteria are used for the written examination:

- a) Structure (max. 5 points)
- b) Linguistic quality (max. 5 points)
- c) Quality of the technical content (max. 10 points)
- d) Consistency of presentation and discussion of conclusions (max. 10 points)

- (6) ¹Applicants, for whom the sum of points for the selection criteria a), b) and c) is at least 50 of the 70 maximum points to be obtained, are invited for a selection interview. A total of 30 points are awarded here. ²A student must receive at least 20 points to pass the selection interview successfully.

The following assessment criteria are applied:

- a) Expert discussion (max. 15 points)
 - b) Motivation for the master's programme (max. 5 points)
 - c) Expectations from the master's programme (max. 5 points)
 - d) Relevance to future profession (max. 5 points)
- (7) ¹Programme-specific aptitude is considered as proven if the sum of points of all four selection criteria is at least 70.
- (8) ¹Programme-specific aptitude assessment is carried out once a year in the winter semester for the following summer semester. ²Applications for admission to the assessment must be submitted to Deggendorf Institute of Technology along with the application documents through the online application process by the end of the application period for the following summer semester (cut-off period).
- (9) ¹Applicants who have not furnished proof of programme-specific aptitude can re-register for the test once on the date decided for the following year. ²In justifiable cases of exception, students may also be allowed to register at a later point in time. ³Re-registration cannot be done again thereafter.
- (10) ¹Minutes of the oral examination must be recorded and these must indicate, in particular, the date and place of examination, names of applicants, subject matter of the examination, as well as the principles of assessment for individual examination performances and for the determination of examination results by the members of the Selection Committee.
- (11) The result of the procedure for determining programme-specific aptitude is communicated in writing. A rejection must be justified.
- (12) ¹The Examination Committee may waive participation in the oral examination if the applicant demonstrates above-average knowledge in the programmes specified in Section 3 Para. 1 No. 1. ²Above-average scores are 2,0 and higher.

Section 5

Modules and proof of performance

- (1) ¹The programme comprises modules that can be composed of thematically-related courses. ²Each module

is assigned ECTS credits that take into account the time required by students to complete the module.

- (2) ¹The compulsory and elective modules, their number of hours, form of teaching, examinations, as well as ECTS credits are set out in the annex to these by-laws.
- (3) ¹All courses comprise compulsory modules, elective modules or optional modules:
 1. Compulsory modules are binding for all students.
 2. ¹Elective modules are offered as alternatives. ²Students must select certain modules from these in accordance with these study and examination regulations. ³Selected modules are treated as compulsory modules. ⁴When selecting elective modules, students must ensure that the total ECTS credits per semester is 30. This applies in particular to the third semester, in which one FWP (subject-specific elective module) of 6 SWS and one FWP of 4 SWS must be selected.
 3. Optional modules are modules that are not mandatory for achieving the study objective. Students can choose these from the courses offered by the university.
- (4) ¹There is no guarantee that all planned specialisations, elective modules and optional modules will actually be offered. ²Likewise, there is no entitlement to such courses being held when the number of participants is insufficient.

Section 6 Curriculum

¹The responsible faculty, European Campus Rottal Inn, 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. ²The curriculum is determined by the Faculty Council and must be announced within the university before the semester starts. ³Changes 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 distribution of weekly semester hours per module and semester including ECTS credits,
2. the description of compulsory and elective modules, as well as the weekly semester hours, form of teaching, study objectives and course content of these modules,
3. subject-specific elective modules with their number of hours, the course form in individual modules, if they have not been definitively set out in the annex.

Section 7
**Assessment of examination performance, overall
examination grade**

- (1) ¹There is an examination for each module. ²If a module examination consists of several examinations, the module grade is calculated from the arithmetic mean of the grades of the individual examinations, which is rounded down to one decimal place. ³Individual examination performances are weighted according to the allotted ECTS credits.
- (2) ¹If a module examination consists of several examinations, the grade "nicht ausreichend" (non-sufficient/fail) in one partial examination cannot be compensated by a better grade in another partial examination.
- (3) ¹The overall grade is calculated by a weighted arithmetic mean of the individual grades. ²The weight of an individual grade is the same as the number of ECTS credits allocated to the subject for which the grade was awarded.
- (4) ¹In addition to the overall examination grade in accordance with Para. 3, a relative grade based on the numerical value attained is shown according to the ECTS user guide as per regulations contained in Section 8 Para. 6 of the general examination regulations of Deggendorf Institute of Technology.

Section 8
Master's thesis

- (1) ¹A master's thesis has to be written to obtain a master's degree. ²It must demonstrate the student's ability to apply the knowledge acquired during studies on the basis of independent scientific work in engineering projects.
- (2) ¹The period from choosing a topic to submission must be appropriate to the scope of the topic and is six months.
- (3) ¹The master's thesis may be written in English or German with the approval of the Examination Committee. ²Ultimately, it must be presented within the university. The presentation is included in the evaluation of the master's thesis.
- (4) Registration for the master's thesis requires that at least 80 ECTS credits have been obtained.

Section 9 Certificate

A certificate indicating the successful completion of the master's examination is issued in accordance with the respective template in the annex to the general examination regulations of Deggendorf Institute of Technology.

Section 10 Academic degree and diploma supplement

- (1) Upon successful completion of the master's examination, the academic degree of "Master of Engineering", abbreviated as "M.Eng.", is awarded.
- (2) A certificate granting the academic degree is issued in accordance with the respective template in the annex to the general examination regulations of 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.

Section 11 Coming into effect

These study and examination regulations enter into force effect on 15 March 2022. They shall apply for all students commencing their studies from the 2022 summer semester.

Master's in Healthy and Sustainable Buildings		Semester hours/week (SWS)					ECTS	Course Type	Examination
		SWS	Se m.	Se m.	Se m.	Se m.			
Overview Module Numbers, Module Titles, SWS and ECTS									
Module no.	Modules								
HSB-1	Environmental Psychology Umweltpsychologie	4	4				5	SU/Ü Schr. r. Ex. 90 min.	
HSB-2	Sustainable Buildings & Neighbourhoods Nachhaltige Gebäude & Stadtteile	8	8				10	SU/Ü Portfolio	
HSB-3	Smart Buildings Intelligente Gebäude	8	8				10	SU/Ü Portfolio	
HSB-4	Quantitative and Qualitative Research Methods Quantitative und qualitative Forschungsmethoden	4	4				5	SU/Ü RP*	
HSB-5	Environmental Hygiene and Medicine Umwelthygiene und Medizin	4		4			5	SU Wr. Ex. 90 min.	
HSB-6	Evidence-Based Design 1 Evidenz basiertes Entwerfen	4		4			5	SU/Ü Portfolio	
HSB-7	Standards & Green Building Certification Systems Normen und Zertifizierung nachhaltiger Gebäude	4		4			5	SU/Ü Portfolio	
HSB-8	Building Performance Simulations Gebäudesimulationen	4		4			5	SU/Ü Wr. Ex. 90 min.	
HSB-9	Sustainable Energy Supply Systems Nachhaltige Energieversorgungssysteme	4		4			5	SU Wr. Ex. 90 min.	
HSB-10	Ambient-Assisted Working & Living Umgebungsunterstütztes Arbeiten & Wohnen	4		4			5	SU/Ü Portfolio	
HSB-11	International Project Management and Implementation Internationales Projektmanagement und -durchführung	4			4		5	SU/Ü Portfolio	
HSB-12	Building Safety & Security Gebäudesicherheit und -sicherung	4			4		5	SU/Ü Portfolio	
HSB-13	Evidence-Based Design 2 Evidenzbasiertes Entwerfen 2	4			4		5	SU/Ü Portfolio	
HSB-14	Refurbishment and Renovation Sanierung, Renovierung	4			4		5	SU/Ü Portfolio	
HSB-15	Evidence-Based Design - Consolidation (FWP) Evidenz basiertes Entwerfen - Vertiefung	6			6		5	SU/Ü Portfolio	
HSB-16	Selected chapters Healthy & Sustainable Buildings & Neighbourhoods (FWP) Ausgewählte Kapitel Gesunde & Nachhaltige Gebäude & Stadtteile	4			4		5	SU/Ü Oral exam, max. 25 min.	
HSB-17	Smart Infrastructure & Artificial Intelligence (FWP) Smarte Infrastruktur & künstliche Intelligenz	4			4		5	SU/Ü Wr. Ex. 90 min. (0.8) + 15 min. presentation (0.2)	
HSB-18	R&D Project (FWP) F&E Projekt	6			6		5	Ü RP + Presentation (0.7 + 0.3)	
HSB-19	Master's Thesis incl. Presentation Masterarbeit mit Präsentation						30	Master's thesis	
	Total SWS	74	24	24	26	0	74		
	Total ECTS	120	30	30	30	30	120		

Abbreviations:

Wr. Ex.	Written Examination
RP	Research Paper, during semester *limit: 25 DIN A 4 pages, time to edit: 6 weeks
Portfolio	Portfolio see module handbook
Master thesis	Master's thesis
SU	course teaching/exercises/tutorials
Ü	exercise
SWS	semester periods per week
ECTS	European Credit Transfer System

Issued based on the resolution of the Senate of Deggendorf Institute of Technology dated 28 July 2021 and the regulatory approval of the Vice President of Deggendorf Institute of Technology dated 1 October 2021.

Signed by
Prof. Waldemar Berg,
Vice President

These by-laws were recorded on 1 October 2021 at Deggendorf Institute of Technology. This was announced by means of a notice on 1 October 2021. Day of announcement is therefore 1 October 2021.

Annex 2

Compulsory attendance for the master's programme in Healthy and Sustainable Buildings at Deggendorf Institute of Technology/European Campus Rottal Inn

Module	Course	Reason for compulsory attendance	Required attendance	Consequences
HSB-6 HSB-13	Evidence-Based Design 1 Evidence-Based Design 2	Projects and practical set-ups can be executed only if active participation is guaranteed.	Minimum 75% of the offered courses. Substitution tasks are possible in justified cases of absence.	Project work will be graded as failed
HSB-18	R&D Project	Research and development projects can be executed only if continuous, active participation is guaranteed.	Minimum 75% of the offered courses. Substitution tasks are possible in justified cases of absence. If the project is executed in cooperation with other partners (industry or research institutes, other universities), then the regulations agreed upon between the lecturer and the partners shall apply.	Project work will be graded as failed