

Study and examination regulations for the Master's degree programme in Hydrogen Technology at Rosenheim Technical University of Applied Sciences, based in Burghausen

of 21 June 2022

Amended by statute of 6 March 2023

On the basis of Article 13 (1) Sentence 2, (2) Sentence 2, Article 43 (5), Article 61 (2 and 3) and Article 66 (1) of the Bavarian Higher Education Act (BayHSchG), Rosenheim Technical University of Applied Sciences issues the following rules:

Section 1 Purpose of the study and examination regulations

These study and examination regulations serve as a supplement to the current versions of the Basic Examination Regulations for Universities of Applied Sciences in Bavaria (*Rahmenprüfungsordnung für die Fachhochschulen in Bayern – RaPO*) of 17 October 2001 and the General Examination Regulations of Rosenheim Technical University of Applied Sciences (*Allgemeine Prüfungsordnung der Technical Hochschule Rosenheim – APO*) of 2 August 2016.

Section 2 Study objectives

- (1) The Master's degree programme in Hydrogen Technology is devised as an application-focused, engineering course. The aim is to deepen and specialise knowledge in technologies for the production, storage, transport and industrial application of hydrogen and related areas on a scientific basis.
- (2) The consecutive Master's degree programme is designed to prepare students for demanding engineering tasks and a fast track into specialist, project and leadership responsibility in a technical field, in particular, in international companies. The international focus of the course is demonstrated by the fact that its lectures are offered in English.
- (3) The students should build up their skills in depth and in an application-oriented way. This includes offering modules with a specialist as well as application and skill-oriented focus. The knowledge acquired is to be applied and further deepened by working on current topics from applied research and development in the field of hydrogen within the scope of a project. In this way, complex interrelationships from the degree modules are linked and transferred to practical applications.

Section 3 Admission requirements

- (1) Admission to the Master's degree programme requires a Bachelor's degree in the natural sciences or engineering field, such as Chemical Engineering, Chemistry, Process Automation Systems, Environmental Technology, Mechanical Engineering, Process Engineering, Energy Technology, Physics, Materials Science, Materials Engineering, Electrical Engineering or an equivalent qualification obtained in Germany or abroad.
- (2) Admission to the degree programme requires a good command of the English language. Sufficient English language skills can be assumed if at least one criterion from the following list is met:
 1. Native language is English
 2. At least 6 years of English lessons at school
 3. Passing a "Technical English" module or a comparable English module in a previous degree programme
 4. Completion of a degree programme in which modules amounting to at least 20 ECTS have been successfully completed and in which the language of instruction was "English" (evidence by a "Medium of Instruction" confirmed by the relevant higher education institution)

5. TOEFL with 550 or more points
6. CBTOEFL with 213 or more points
7. Internet-based TOEFL with 72 or more points
8. IELTS with a band score of 6.0 or higher
9. Cambridge CEFR CPE at Grade C or higher
10. Cambridge CEFR CAE at Grade B or higher

In cases of doubt or non-submission of proof, applicants may be required additionally/alternatively to pass a language test comparable to those listed above at the TH Rosenheim.

(3) Another requirement for admission to studies is a good command of the German language. Sufficient German language skills can be assumed if one or more points from the following list are met:

1. Native language is German
 2. At least 3 years of German lessons at school
 3. Passing a "Technical German" module or a comparable German module in a previous degree programme
 4. Completion of a degree programme in which modules amounting to at least 20 ECTS have been successfully completed and in which the language of instruction was "German" (evidence by a "Medium of Instruction" confirmed by the relevant higher education institution)
 5. Deutsches Sprachdiplom Level 1 (level GER A2/B1)
 6. Goethe certificate at level A2
 7. TELC certificate at level A2.
- (4) Proof of language skills can be submitted until the end of the 1st semester.
- (5) If previous language qualifications cannot be clearly assigned to the listed points (e.g. if modules have been taken at a non-European university without the ECTS system), the Examination Committee of the degree programme decides on the fulfilment of the language admission requirement.
- (6) If applicants submit proof of a qualification required for admission that is worth less than 210 ECTS credit points but at least 180 ECTS credit points or equivalent, they must acquire the missing credit points from relevant undergraduate courses at Rosenheim Technical University of Applied Sciences. On admission, the Examination Committee shall determine which courses and examinations need to be taken in the individual case. Catch-up examinations must be taken before the Master's thesis is issued. Section 19 of the General Examination Regulations of Rosenheim Technical University of Applied Sciences (Allgemeine Prüfungsordnung der Hochschule Rosenheim - APO) applies accordingly to opportunities to resit failed examinations.
- (7) The Examination Committee shall decide on the equivalence and relevance of qualifications required for admission and the fulfilment of other admission requirements.

Section 4 Course structure

- (1) The Master's degree programme covers a standard period of study of three semesters of full-time study or a maximum of 6 semesters of part-time study. It includes a Master's thesis and a project.
- (2) Only those students who have achieved the evidence in accordance with Section 3 (3) and (4) are entitled to start the second semester and continue with further studies.

Section 5 Modules and examinations

- (1) The modules, their number of hours, credit points, type of lecture as well as type and scope of examinations are set out in the Appendix to these rules. The regulations defined in these rules are supplemented by the study plan.
- (2) All modules are either required modules, specialist required elective modules or application and skill-oriented required elective modules

1. Required modules are those modules of the degree programme which must be completed by all students. They are categorised as “required module” in the appendix
 2. Specialist required elective modules are modules that have to be chosen according to these study and examination regulations. The specialist required elective modules are defined in the study plan. The modules selected are treated as required modules.
 3. Application and skill-oriented required elective modules are modules that have to be chosen according to these study and examination regulations. The application and skill-oriented required elective modules are defined in the study plan. The modules selected are treated as required modules.
 4. Upon request, other modules from the range of courses offered by Rosenheim Technical University of Applied Sciences or other universities can also be selected and credited as required elective modules. The Examination Committee decides on the request and the allocation as a specialist required or application and skill-oriented required elective module.
- (3) A required module consists of applied research and development work as a project.
- (4) The regulations defined in these rules are supplemented by the study plan.

Section 6 Study plan

- (1) The Faculty of Chemical Technology and Economics produces a study plan containing individual details of the degree programme, in order to secure the range of courses on offer and to provide the students with information. It is approved by the Faculty Council and is published within the university. New regulations must be published at the latest at the start of the semester in which the regulations come into force for the first time. In particular, the study plan includes regulations and information on:
1. Objectives, content, hours per week per semester, credit points and types of lecture used in individual modules, if this is not regulated conclusively in these rules, and, in particular, a list of current required elective modules, including conditions and restrictions regarding student numbers.
 2. More detailed conditions relating to examinations, certificates of attendance and admission requirements.
- (2) No assertion is made that all required elective modules shall actually be available. Equally, no assertion is made that associated lectures shall be conducted if there are insufficient attendees. The Examination Committee can also set requirements for attendance as well as maximum numbers of attendees for certain lectures.

Section 7 Master's thesis

- (1) The prerequisite for issuing the topic of the Master's thesis is the completion of subjects from this degree programme amounting to at least 30 ECTS.
- (2) Full-time students have nine months to complete the Master's thesis and part-time students have eighteen months.
- (3) The Master's thesis is assessed and graded by two examiners. At least one of these two examiners should be a full-time professor at the Faculty of Chemical Technology and Economics at Rosenheim Technical University of Applied Sciences.
- (4) The Master's thesis may be written in German or English. A summary in German and English must be included, however.
- (5) The Master's thesis must be orally presented and defended in person within a 30-minute time period. The defence is subject to the provisions in Section 21 (9) as well as the terms and conditions for oral examinations set out in Section 16 of the General Examination Regulations (APO).
- (6) The regulations defined in these rules are supplemented by the study plan.

Section 8 Academic Advising

If students do not obtain at least 30 credit points after two semesters of full-time study, or four semesters of part-time study, they are required to seek assistance from Academic Advising.

Section 9 Examination Committee

The Examination Committee consists of at least three professors from the Faculty of Chemical Technology and Economics.

Section 10 Overall examination grade

The overall examination grade is the arithmetic average of significant individual grades weighted with credit points, rounded off to one decimal point.

Section 11 Academic title

On passing the Master's examination, the student shall be awarded the academic title of "Master of Science", or "M.Sc." for short.

Section 12 Effective date

These study and examination regulations come into force on ... They apply to students enrolling in the 2022/2023 winter semester.

The changes marked in red apply to students who begin their studies in the summer semester 2023.

Issued on the basis of the resolution by the Senate of Rosenheim Technical University of Applied Sciences of 1 June 2022 and the approval of the President of Rosenheim Technical University of Applied Sciences.

Rosenheim, 21 June 2022

Prof. Heinrich Köster,
President

These rules were laid down on 21 June 2022 at Rosenheim Technical University of Applied Sciences. This was published within the university on 21 June 2022. The publication date is therefore 21 June 2022.

Anlage zur Studien- und Prüfungsordnung für den Masterstudiengang Hydrogen Technology an der Technischen Hochschule Rosenheim

Appendix to the study and examination regulations for the Master's degree programme in Hydrogen Technology at Rosenheim Technical University of Applied Sciences.

1. Theoretische Studiensemester (theoretical semester)

Modul Nr. <i>Module no.</i>	Modulbezeichnung <i>Modules</i>	Rubrik <i>Category</i>	SWS	Leistungs- punkte <i>ECTS</i>	Art der Lehrver- anstaltung 1) <i>Type of lecture</i>	Prüfungen <i>Examinations</i> 1) 2) 3) 4)		Ergänzende Regelungen 1) <i>Supplementary regulations</i>
						Art u. Dauer <i>Type and Duration</i>	ZV	
HTF 01	Wasserstoff: Grundlagen und Sicherheit <i>Fundamentals of Hydrogen and Safety</i>	Pflichtmodul <i>required module</i>	4	5	SU, Ü	schrP (60 – 180 Min) oder/or mdIP (20 – 30 Min)	TN	
HTF 02	Wissenschaftliches Arbeiten <i>Scientific Methods and Writing</i>	Pflichtmodul <i>required module</i>	4	5	SU, Pr	PStA, 2-12 Wochen/weeks		
HTS	Fachwissenschaftliche und Applikations- & kompetenzorientierte Wahlpflichtmodule <i>Specialist required and application & skill- oriented required elective modules</i>	Wahl- pflicht- modul <i>required elective module</i>		40	SU, Ü, Pr	P	TN	5) 6) 7)
HTM 01	Projektarbeit mit Projektseminar <i>Project including seminar</i>	Pflichtmodul <i>required module</i>	2 (Seminar)	10	PA, S	PStA, 2-6 Monate/months	TN	
HTM 02	Masterarbeit <i>Master's Thesis</i>	Pflichtmodul <i>required module</i>	-	30	MA	MA, mdIP (30 Min)		MA: 0,90 mdIP: 0,10
				90				

- 1) The Faculty Council sets out the details in the study plan.
- 2) A minimum grade of "sufficient" for all significant examinations is required to successfully complete the programme. 3) Submission on time is necessary to pass. (for PStA, P, MA)
- 4) Individual details will be announced with the examination notice at the start of the semester.
- 5) At least 10 credit points must be taken from each of the specialist required and application and skill-oriented required elective modules listed in the study plan.
- 6) The catalogue of specialist required elective modules is determined by the Faculty Council for each semester according to the criteria in Section 5, and set out in the study plan at the start of each semester.
- 7) The catalogue of application and skill-oriented required elective modules is determined by the Faculty Council for each semester according to the criteria in Section 5, and set out in the study plan at the start of each semester.

2. Erklärung der Abkürzungen (*Abbreviations*):

SWS = Semesterwochenstunden *hours per week per semester*

ECTS = European Credit Transfer System

Ü = Übung *practical exercise*

SU = Seminaristischer Unterricht *seminar-based lectures*

ZV = Zulassungsvoraussetzung *admission requirements*

MA = Masterarbeit *Master's thesis*

P = Prüfung *examination*

schrP = schriftliche Prüfung *written examination*

PStA = Prüfungsstudienarbeit *coursework (such as a work experience report, or a colloquium for group work with an additional, individual examination)*

S = Seminar *seminar*

eIP = elektronische Prüfung *electronic examination*

prP = praktische Prüfung *practical examination*

mE = mit Erfolg abgelegt *pass*

PA = Projektarbeit *project work*

Pr = Praktikum *work experience*

TN = Teilnahmenachweis *Certificate of attendance*

