

These degree programme and examination regulations have been worded carefully to be up to date; however, errors cannot be completely excluded. The official German text available at the Examinations Office is the version that is legally binding.

Note: Students who started their studies before the latest amendment came into effect are also requested to comply with previous amendments and the respective transitory provisions.

**Degree Programme and Examination Regulations
for the Bachelor's and Master's Degree Programme in
Chemical and Biological Engineering at the
Faculty of Engineering of Friedrich-Alexander-Universität
Erlangen-Nürnberg (FAU)
– FPOCBI –
Dated 5 December 2008**

amended by statutes of
2 December 2009
6 May 2010
7 July 2010
7 June 2011
30 July 2012
31 July 2012
3 July 2015
26 January 2016
6 March 2019

Based on Section 13 (1)(2), Section 43 (5)(2), Section 58 (1) and Section 61 (2)(1) of the Bavarian Higher Education Act (Bayerisches Hochschulgesetz, BayHSchG), FAU enacts the following examination regulations:

Part I: General Provisions

Section 35 Scope

¹The degree programme and examination regulations cover examinations for the Bachelor's and consecutive Master's degree programmes in Chemical and Biological Engineering leading to a Bachelor of Science or Master of Science. ²They complement the current version of the General Examination Regulations for the Bachelor's and Master's Degree Programmes of the Faculty of Engineering at FAU – **ABMPO/Tech-Fak** – dated 18 September 2007.

Section 36 Bachelor's Degree Programme, Standard Duration of Studies

The standard duration of studies for the Bachelor's degree programme in Chemical and Biological Engineering shall be six semesters, including the period for the Bachelor's thesis.

Section 37 Master's Degree Programme, Standard Duration of Studies, Start of Degree Programme, Teaching and Examination Language

(1) The Master's degree programme in Chemical and Biological Engineering shall include a three-week project development course, an industrial internship lasting a minimum of twelve weeks and a period for completing the Master's thesis.

(2) The standard duration of studies for the Master's degree programme in Chemical and Biological Engineering shall be four semesters.

(3) The Master's degree programme may be started in the winter semester or in the summer semester.

(4) ¹Notwithstanding Section 4 (5) **ABMPO/TechFak**, the teaching and examination language in the Master's degree programme is German and English. ²This shall not affect Section 4 (5) **ABMPO/TechFak**.

Part II: Special Provisions

1. Bachelor's Examination

Section 38 Scope of the Grundlagen- und Orientierungsprüfung

(1) ¹The Grundlagen und Orientierungsprüfung, GOP shall consist of the modules set forth in **Appendix 1**

1. B1: Mathematics for CB11
2. B4: Experimental physics
3. B5: General and inorganic chemistry
4. B11: Statics and strength of materials
5. B13: Materials science
6. B14: Chemical and biological process technology with introductory project.

²The ECTS credits allocated to each module and the type and scope of the examinations are stipulated in **Appendix 1**.

(2) The GOP shall have been passed if at least 30 ECTS credits (from a total of 40 ECTS credits) have been earned from the modules listed in paragraph 1.

Section 39 Scope and Structure of the Bachelor's Examination

¹The Bachelor's examination shall consist of the modules set forth in **Appendix 1**. ²The length and type of examination for each module is also specified in **Appendix 1**.

Section 39a Compulsory Elective Modules – Modules B26 and B27

(1) ¹The learning outcome of the compulsory elective modules (modules B26 and B27) is for students to expand their subject-related skills in a technical and scientific area of their choice. ²The aim is also to allow students to tailor and expand their profile in view of their career plans and/or personal development.

(2) ¹The type and scope of the examination are dependent on the skills for the relevant module according to paragraph 1 and the module handbook. ²Possible examination achievements per module are: written examination (60 mins, 90 mins or 120 mins) or oral examination (30 mins) or (graded) seminar achievement pursuant to Section 6 (3) sentence 6 **ABMPO/TechFak**.

(3) ¹Compulsory elective modules usually consist of a lecture (2 SWS) and a tutorial (2 SWS) or a lecture (3 SWS) and a tutorial (1 SWS). ²Any exceptions are detailed in the module handbook.

Section 40 Bachelor's Thesis

(1) ¹The Bachelor's thesis enables students to learn to solve problems independently in the field of chemical and biological engineering. ²Requirements for the thesis shall be such that it can be completed with a workload of approximately 360 hours. ³The results of the Bachelor's thesis shall be presented in a presentation with a maximum length of 30 minutes followed by a discussion. ⁴The date of the presentation shall be determined by the supervising lecturer either after the student has submitted their Bachelor's thesis or during the final stage of thesis work and the student shall be informed of the date in good time. ⁵12 ECTS credits shall be awarded for the Bachelor's thesis and 3 ECTS credits shall be awarded for the presentation.

(2) The subject of the Bachelor's thesis shall be allocated by a full-time university lecturer teaching Chemical and Biological Engineering at the Faculty of Engineering.

(3) The student shall choose whether to write the Bachelor's thesis in German or English.

2. Master's degree programme

Section 41 Qualification for a Master's Degree, Certificates and Admission Requirements

(1) ¹A subject-specific degree within the meaning of Section 29 (1)(1) **ABMPO/TechFak** is a Bachelor's degree completed according to these examination regulations or an equivalent degree that leads to a qualification equivalent to the Bachelor's degree in Chemical and Biological Engineering completed according to these examination regulations. ²In accordance with paragraph 5 (4) of **Appendix 1 ABMPO/TechFak**, applicants with a degree that differs from the degree specified in sentence 1 but is a related subject within the meaning of Section 29 (1)(1) **ABMPO/TechFak** shall only be admitted to the Master's degree programme after passing an oral admission examination according to paragraph 4.

(2) ¹Applicants shall be required to submit evidence of proficiency in German and English equivalent to level B2 of the Common European Framework of Reference as a further document within the meaning of paragraph 2 (4)(3) **Appendix 1 ABMPO/TechFak** in conjunction with Section 29 (1)(2) **ABMPO/TechFak**. ²Applicants who have completed their university entrance qualifications or their first degree in English are not required to provide proof of proficiency in English.

(3) Applicants shall be deemed as qualified for the Master's degree programme in Chemical and Biological Engineering at the Faculty of Engineering at FAU (FPOCBI) according to paragraph 5 (2)(3) of **Appendix ABMPO/TechFak** if they have passed at least four of the modules B15, B17 and B20 to B24 of the Bachelor's degree programme in Chemical and Biological Engineering at FAU with an average module grade of 3.0 or better.

(4) ¹In the oral admission examination according to paragraph 5 (3) et seq of **Appendix ABMPO/TechFak**, applicants shall be evaluated according to the following criteria:

1. Ability to analyse complex issues from the area of chemical and biological engineering taking relevant process and measuring techniques into consideration, work out solutions and critically discuss results (40 percent),
2. Standard of fundamental knowledge acquired during the Bachelor's degree programme corresponding to a subject specialisation in the Master's degree programme (30 percent),
3. Ability to give an opinion on issues relating to current research using the correct technical terms (30 percent).

²The admission examination does not affect the student's choice of specialisation in the Master's degree programme.

Section 41a Scope and Structure of the Master's Examination

¹The Master's examination consists of the modules pursuant to **Appendix 2** (full-time) or **Appendix 3** (part-time). ²The length and type of examination for each module is also specified in **Appendix 2** or **3**.

Section 41b Specialisation Modules – M1 - M4

(1) ¹The learning outcome of the specialisation modules M1 to M4 is for students to expand their subject-related skills and gain more advanced knowledge in the areas of chemical and biological engineering by using scientific methods in theory and in laboratory practice. ²Students should acquire practical skills relevant for research which can be used in industry. ³The learning outcome for the specialisation modules M1 to M4 is to give students the opportunity to choose their individual focus and tailor their profile in view of their future career and/or personal development. ⁴The laboratory courses allow students to put the theory they have covered into practice. ⁵In specialisation modules M1 to M4, students study a subject introduced in modules B15 to B17 and B20 to B24 in the Bachelor's degree programme in more detail; further details are stipulated in **Appendix 4**.

(2) ¹The type and scope of the examination are dependent on the skills for the relevant module according to (1) and the module handbook. ²Students have to complete one (ungraded) laboratory achievement and one examination achievement (written examination, 120 mins, or oral examination, 30 mins) for each module, depending on the specific manner in which the module is taught.

(3) ¹The specialisation modules usually consist of a lecture (3 SWS), a tutorial (1 SWS) and a laboratory course (3 SWS). ²Any exceptions are detailed in the module handbook.

Section 41c Compulsory Elective Modules – M5 - M8

(1) ¹The learning outcome of the compulsory elective modules M5 to M8 is for students to expand their subject-related skills and gain more advanced knowledge in the theory and practice of chemical and biological engineering. ²The choice of elective compulsory modules, in particular in combination with the choice of specialisation modules M1 to M4, gives students the opportunity to tailor their profile in view of their future career. ³The laboratory courses allow students to put the theory they have covered into practice.

(2) ¹The type and scope of the examination are dependent on the skills for the relevant module according to (1) and the module handbook. ²Students have to complete one (ungraded) laboratory achievement and one examination achievement (written examination, 120 mins, or oral examination, 30 mins) in module M7 and module M8, depending on the specific manner in which the module is taught.

(3) ¹The compulsory elective modules usually consist of a lecture (2 SWS) and a tutorial (1 SWS), with an additional laboratory course (3 SWS) in modules M7 and M8. ²Any exceptions are detailed in the module handbook.

(4) ¹Specialisation modules and supplementary modules (M1 to M4 and M9 to M12) that have not already been chosen as specialisation modules and supplementary modules may also be chosen as elective compulsory modules (M5 to M8). ²Other elective compulsory modules which fit into the context of the degree programme may be approved by the chairperson of the Degree Programme Committee upon the student's request.

Section 41d Supplementary modules – M9 - M12

(1) ¹The learning outcome of the supplementary modules M9 to M12 is for students to expand their subject-related skills and/or gain more advanced knowledge of chemical and biological engineering. ²The choice of specialisation modules M9 to M12 should allow students to steer their own career prospects by specialising in one or several areas of chemical and biological engineering.

(2) ¹The type and scope of the examination are dependent on the skills for the relevant module according to (1) and the module handbook. ²Possible examination achievements are: written examination (120 mins) or oral examination (30 mins). ³The module handbook is published before the beginning of the seminar in accordance with local practice.

(3) ¹The supplementary modules usually consist of a lecture (2 SWS) and a tutorial (1 SWS). ²Any exceptions are detailed in the module handbook.

Section 42 Master's Examination, Admission Requirements for the Master's Thesis

¹In order to qualify for admission to the Master's thesis (Module M15 in **Appendix 2**), students shall be required to successfully complete modules M1 to M14 worth 90 ECTS credits. ²The chairperson of the Degree Programme Committee may grant exceptions upon the student's request.

Section 43 Master's Thesis

(1) ¹The topic of the Master's thesis shall be allocated by a full-time university lecturer teaching Chemical and Biological Engineering at the Faculty of Engineering. ²Deviations from this shall be subject to the Degree Programme Committee's approval.

(2) ¹The results of the Master's thesis shall be presented in a presentation with a maximum length of 30 minutes followed by a discussion. ²The date of the presentation shall be determined by the supervising lecturer either after the student has submitted their Master's thesis or during the final stage of thesis work and the student shall be informed of the date in good time. ³27 ECTS credits shall be awarded for the thesis and 3 ECTS credits shall be awarded for the presentation.

(3) The student shall choose whether to write the Master's thesis in German or English.

Section 44 Degree Certificate

[revoked]

III. Transitory and Final Provisions

Section 45 Legal Validity and Transitory Provisions

(1) ¹These degree programme and examination regulations shall come into effect on the day after their publication. ²They shall apply to all students who enter the degree programme in the winter semester 2008/2009 or later.

(2) ¹All students studying a Diplom, Bachelor's or Master's degree programme in Chemical and Biological Engineering at FAU in the winter semester 2008/2009 shall complete their studies under the Degree Programme and Examination Regulations for the Diplom Degree Programme in Chemical and Biological Engineering (FPOCBI-Diplom) from 17 November 2004 or the Degree Programme and Examination Regulations for the Bachelor's and Master's Degree Programme in Chemical and Biological Engineering (FPOCBI) from 1 February 2005.

(3) ¹The Preliminary (Vordiplom) and Diplom examinations for students of the Diplom degree programme shall be held for the last time in the following examination periods:

1. Preliminary (Vordiplom) examination after the summer semester 2010
2. Diplom examination after the summer semester 2014.

²The Bachelor's examination for students studying under FPOCBI from 1 February 2005 shall be held for the last time at the beginning of the lecture period of the summer semester 2013. ³The last Master's examination for students who started the degree programme before these degree programme and examination regulations came into effect shall be held at the beginning of the lecture period of the summer semester 2011. ⁴Examinations after these examination periods shall be conducted according to these degree programme and examination regulations.

(4) At the same time as these degree programme and examination regulations come into effect, subject to the provision in paragraph 2, the Degree Programme and Examination Regulations for the Diplom, Bachelor's and Master's Degree Programme Chemical Engineering at the Faculty of Engineering of the University of Erlangen-Nürnberg (FPOCIW) from 1 December 1998 (KWMBI 1999 II, p. 190), amended by statute from 13 July 1999 (KWMBI II, p. 882) and the Degree Programme and Examination Regulations for the Bachelor's and Master's Degree Programme Chemical and Biological Engineering (FPOCBI) from 1 February 2005 shall cease to be in force.

(5) ¹The ninth amendment statute shall come into effect on the day it is published. ²It shall apply to all students starting a degree programme from the summer semester 2019 onwards.

Appendix 1: Structure of the Bachelor's Degree Programme

No.	Module title	Teaching unit	SWS (semester hours)			ECTS Credits	Distribution of workload per semester in ECTS credits						Type and scope of the examination/course achievement	
			L	T	E		1	2	3	4	5	6		
B1	Mathematics for CBI 1 (GOP)		4	2		7.5	7.5							EA (WE, 90 mins) + CA (TA)
B2	Mathematics for CBI 2		4	2		7.5		7.5						EA (WE, 90 mins) + CA (TA)
B3	Mathematics for CBI 3		4	2		7.5			7.5					EA (WE, 90 mins) + CA (TA)
B4	Experimental physics (GOP)		4	1		7.5	7.5							EA (WE, 120 mins)
B5	General and inorganic chemistry (GOP)		4	1	2	7.5	7.5							EA (WE, 180 mins) + CA (LA)
B6	Physical chemistry		2	1		5		5						EA (WE, 90 mins)
B7	Organic chemistry		4	1	3	7.5			7.5					EA (WE, 180 mins) + CA (LA)
B8	Microbiology		3			5			5					EA (WE, 90 mins)
B9	Biochemistry	Biochemistry 1	2			7.5			2.5					EA (WE, 120 mins or WE, 60 mins + WE, 60 mins) ¹⁾ + CA (LA)
		Biochemistry 2	2							2.5				
		Laboratory: Biochemistry			3					2.5				
B10	Metrology and instrumental analysis		2	1	2	7.5				7.5				EA (WE, 90 mins) + CA (LA)
B11	Statics and strength of materials (GOP)		3	2		7.5	7.5							EA (WE, 90 mins)
B12	Machine design	Machine design	2	1		7.5		5						EA (WE, 120 mins) + CA (TA)
		Technical drawing		3				2.5						
B13	Materials science (GOP)		2	1		5		5						EA (WE, 90 mins)
B14	Chemical and biological process technology with introductory project (GOP)		2		3	5		5						EA (WE, 120 mins) + CA (SA)
B15	Technical thermodynamics		3	3		7.5			7.5					EA (WE, 120 mins)
B16	Computational methods in process engineering 1		2	2	1	5				5				EA (WE, 90 mins)
B17	Fluid mechanics		2	2		5				5				EA (WE, 120 mins)

No.	Module title	Teaching unit	SWS (semester hours)			ECTS Credits	Distribution of workload per semester in ECTS credits						Type and scope of the examination/course achievement
			L	T	E		1	2	3	4	5	6	
B18	Basics of process engineering 1: Phase equilibrium and interfaces		4	3		7.5				7.5			EA (WE, 120 mins)
B19	Basics of process engineering 2: Heat and mass transfer		2	1		5					5		EA (WE, 120 mins)
B20	Mechanical process engineering		2	2		5					5		EA (WE, 120 mins)
B21	Bioreaction and bioprocess engineering for CBI		2	2		5					5		EA (WE, 120 mins) or EA (o, 30 mins) ²⁾
B22	Separation science and technology		2	2		5					5		EA (WE, 120 mins)
B23	Process and apparatus technology		2	2		5						5	EA (WE, 120 mins)
B24	Chemical reaction engineering		2	2		5						5	EA (WE, 120 mins)
B25	Internship chemical and biological engineering				5	5					5		CA (LA) ³⁾
B26	Compulsory elective module 1, see Section 39a		2	1		5					5		EA ⁴⁾
B27	Compulsory elective module 2, see Section 39a		2	1		5						5	EA ⁴⁾
B28	Bachelor's thesis with presentation	Bachelor's thesis				15						12	EA (Bachelor's thesis) + EA (presentation, max. 30 mins with discussion)
		Presentation										3	
Total SWS and ECTS credits			71	41	19	180	30	30	30	30	30	30	
Total ECTS credits			131										

Key:

EA = examination achievement (graded);

CA = course achievement (ungraded);

WE = written examination;

o = oral examination;

LA = laboratory achievement;

SA: seminar achievement;

TA: tutorial achievement.

¹⁾ Students may choose to take either one written examination lasting 120 minutes or two separate written examinations on the individual areas (Biochemistry 1 and Biochemistry 2) lasting 60 minutes each; Section 28 (1)(2) and (2)(1) **ABMPO/TechFak** apply.

²⁾ The type and length of the examination depend on the specific manner in which the chosen module is taught in the respective semester and are stipulated in the module handbook.

³⁾ Details on experiments that must be completed and the type of examination can be found in the module handbook.

⁴⁾ see Section 39a. The type and scope of the examination depend on the specific manner in which the respective module is taught; see module handbook for details.

Appendix 2: Structure of the Full-time Master's Degree Programme

No.	Module title	Teaching unit	SWS (semester hours)			ECTS Credits	Distribution of workload per semester in ECTS credits				Type and scope of the examination/course achievements
			L	T	E		1	2	3	4	
M1	Specialisation module 1, see Appendix 4	Lecture and tutorial in specialisation module 1	3	1		7.5	5				EA (o, 30 mins or WE, 120 mins) ¹⁾ + CA (LA)
		Laboratory course for specialisation module 1			3		2.5				
M2	Specialisation module 2, see Appendix 4	Lecture and tutorial in specialisation module 2	3	1		7.5	5				EA (o, 30 mins or WE, 120 mins) ¹⁾ + CA (LA)
		Laboratory course for specialisation module 2			3		2.5				
M3	Specialisation module 3, see Appendix 4	Lecture and tutorial in specialisation module 3	3	1		7.5		5			EA (o, 30 mins or WE, 120 mins) ¹⁾ + CA (LA)
		Laboratory course for specialisation module 3			3			2.5			
M4	Specialisation module 4, see Appendix 4	Lecture and tutorial in specialisation module 4	3	1		7.5		5			EA (o, 30 mins or WE 120 mins) ¹⁾ + CA (LA)
		Laboratory course for specialisation module 4			3			2.5			
M5	Compulsory elective module 1		2	1		5	5				EA (o, 30 mins or WE, 120 mins) ¹⁾
M6	Compulsory elective module 2		2	1		5		5			EA (o, 30 mins or WE, 120 mins) ¹⁾
M7	Compulsory elective module 3	Lecture and tutorial in compulsory elective module 3	2	1		7.5			5		EA (o, 30 mins or WE, 120 mins) ¹⁾ + CA (LA)
		Laboratory course for compulsory elective module 3			3				2.5		
M8	Compulsory elective module 4	Lecture and tutorial in compulsory elective module 4	2	1		7.5			5		EA (o, 30 mins or WE, 120 mins) ¹⁾ + CA (LA)
		Laboratory course for compulsory elective module 4			3				2.5		
M9	1st Supplementary module		2	1		5	5				CA ¹⁾
M10	2nd Supplementary module		2	1		5	5				CA ¹⁾
M11	3rd Supplementary module		2	1		5		5			CA ¹⁾
M12	4th Supplementary module		2	1		5			5		CA ¹⁾

No.	Module title	Teaching unit	SWS (semester hours)			ECTS Credits	Distribution of workload per semester in ECTS credits				Type and scope of the examination/course achievements
			L	T	E		1	2	3	4	
M13	Project development course				5	5		5			CA (SA) ²⁾
M14	Industrial internship		min. 12 weeks			10			10		CA (LA)
M15	Master's thesis with presentation	Master's thesis				30				27	EA (Master's thesis) and EA (presentation, 20-30 mins with discussion)
		Presentation								3	
Total SWS and ECTS credits			28	12	23	120	30	30	30	30	
Total ECTS credits			63								

Key:

EA = examination achievement (graded);

CA = course achievement (ungraded);

WE = written examination;

o = oral examination;

LA = laboratory achievement;

SA = seminar achievement.

¹⁾ see Section 41b, 41c and 41d respectively. The type and length of the examination depend on the specific manner in which the respective module is taught; see module handbook for details. As a rule, the examination achievement in modules M1 to M8 and the course achievement in modules M9 to M12 takes the form of an oral examination lasting 30 minutes.

²⁾ The seminar achievement for the project development course consists of a report and a presentation completed in a group.

Appendix 3: Structure of the Part-time Master's Degree Programme

No.	Module title	Teaching unit	SWS (semester hours)			ECTS Credits	Distribution of workload per semester in ECTS credits								Type and scope of the examination/course achievements
			L	T	E		1	2	3	4	5	6	7	8	
M1	Specialisation module 1 see Appendix 4	Lecture and tutorial in specialisation module 1	3	1		7.5	5								EA (o, 30 mins or WE, 120 mins) ¹⁾ + CA (LA)
		Laboratory course for specialisation module 1			3		2.5								
M2	Specialisation module 2 see Appendix 4	Lecture and tutorial in specialisation module 2	3	1		7.5	5							EA (o, 30 mins or WE, 120 mins) ¹⁾ + CA (LA)	
		Laboratory course for specialisation module 2			3		2.5								
M3	Specialisation module 3 see Appendix 4	Lecture and tutorial in specialisation module 3	3	1		7.5		5						EA (o, 30 mins or WE, 120 mins) ¹⁾ + CA (LA)	
		Laboratory course for specialisation module 3			3			2.5							
M4	Specialisation module 4 see Appendix 4	Lecture and tutorial in specialisation module 4	3	1		7.5		5						EA (o, 30 mins or WE, 120 mins) ¹⁾ + CA (LA)	
		Laboratory course for specialisation module 4			3			2.5							
M5	Compulsory elective module 1		2	1		5			5					EA (o, 30 mins or WE, 120 mins) ¹⁾	
M6	Compulsory elective module 2		2	1		5			5					EA (o, 30 mins or WE, 120 mins) ¹⁾	
M7	Compulsory elective module 3	Lecture and tutorial in compulsory elective module 3	2	1		7.5				5				EA (o, 30 mins or WE, 120 mins) ¹⁾ + CA (LA)	
		Laboratory course for compulsory elective module 3			3					2.5					
M8	Compulsory elective module 4	Lecture and tutorial in compulsory elective module 4	2	1		7.5				5				EA (o, 30 mins or WE, 120 mins) ¹⁾ + CA (LA)	
		Laboratory course for compulsory elective module 4			3					2.5					
M9	1st Supplementary		2	1		5			5					CA ¹⁾	

No.	Module title	Teaching unit	SWS (semester hours)			ECTS Credits	Distribution of workload per semester in ECTS credits								Type and scope of the examination/course achievements	
			L	T	E		1	2	3	4	5	6	7	8		
M10	2nd Supplementary module		2	1		5					5				CA ¹⁾	
M11	3rd Supplementary module		2	1		5					5				CA ¹⁾	
M12	4th Supplementary module		2	1		5					5				CA ¹⁾	
M13	Project development course				5	5						5			CA (SA) ²⁾	
M14	Industrial internship		min. 12 weeks			10						10			CA (LA)	
M15	Master's thesis with presentation	Master's thesis				30							27		EA (Master's thesis) and EA (presentation, 20-30 mins with discussion)	
		Presentation												3		
Total SWS and ECTS credits			28	12	23	120	15	15	15	15	15	15	15	15		
Total ECTS credits			63				Total ECTS credits								120	

Key:

EA = examination achievement (graded);

CA = course achievement (ungraded);

WE = written examination;

o = oral examination;

LA = laboratory achievement;

SA = seminar achievement.

¹⁾ see Section 41b, 41c and 41d respectively. The type and length of the examination depend on the specific manner in which the respective module is taught; see module handbook for details. As a rule, the examination achievement in modules M1 to M8 and the course achievement in modules M9 to M12 takes the form of an oral examination lasting 30 minutes.

²⁾ The seminar achievement for the project development course consists of a report and a presentation completed in a group.

Appendix 4: Specialisation modules in the Master's degree programme

Bachelor's degree module	Master's degree specialisation module
B15: Technical thermodynamics	Specialisation: Technical thermodynamics
B16: Computational methods in process engineering 1	Simulation of granular and molecular systems
B17: Fluid mechanics	Specialisation: Fluid mechanics
B20: Mechanical process engineering	Specialisation: Mechanical process engineering
B21: Bioreaction and bioprocess engineering for CBI	Specialisation: Bioreaction and bioprocess engineering
B22: Separation science and technology	Specialisation: Separation science and technology
B23: Process and apparatus technology	Specialisation: Process and apparatus technology
B24: Chemical reaction engineering	Specialisation: Chemical reaction engineering