

# **Examination Regulations**

for

## **Bioengineering, B.Sc.**

Faculty of Life Sciences

Rhine-Waal University of Applied Sciences

Dated 28 November 2018

In accordance with Section 2 (4) sentence 1 and Section 64 (1) of the Higher Education Act of North Rhine-Westphalia [*Hochschulgesetz NRW*], in the amended form produced by the Act for the Future Development of Universities [*Hochschulzukunftsgesetz*] of 16 September 2014 (GV.NRW. 2014, p. 547), last amended by the Act of 17 October 2017 (GV.NRW. 2017, p. 806) and the General Examination Regulations for Bachelor's and Master's Degree Programmes at Rhine-Waal University of Applied Sciences (RPO) from 3 January 2018 (Official Notices 07/2018), the Faculty Council of the Faculty of Life Sciences of Rhine-Waal University of Applied Sciences enacted the following examination regulations on 12 December 2018:

### **Contents**

- Section 1    Applicability
- Section 2    Academic Objectives and Purpose of Examination, Bachelor's Degree
- Section 3    General Admission Requirements
- Section 4    Basic Internship
- Section 5    Programme Structure; Volume of Instruction Hours; Progression of Studies
- Section 6    Scope of Examinations
- Section 7    Scope and Form of the Thesis
- Section 8    Admission to the Thesis and Colloquium
- Section 9    Credit Values for the Thesis and Colloquium
- Section 10    Awarding of the Bachelor's Degree
- Section 11    Entry into Force / Transitional Provisions
- Annex 1

## **Section 1**

### **Applicability**

These examination regulations shall apply to Bioengineering B.Sc., offered in English by the Faculty of Life Sciences of Rhine-Waal University of Applied Sciences, in conjunction with the General Examination Regulations for Bachelor's and Master's Degree Programmes ("RPO") of Rhine-Waal University of Applied Sciences. They govern the standard, seven-semester mode of study (full-time study), the dual-vocational, nine-semester mode of study (dual, or cooperative study) and the part-time, nine-semester mode of study for working professionals.

## **Section 2**

### **Academic Objectives and Purpose of Examination, Bachelor's Degree**

(1) The bachelor's examination forms the basis for this professionally-qualifying degree. Academic aims and objectives are outlined in Section 3 RPO. In particular, this degree programme aims to impart expert qualifications in the fields of bioengineering and biotechnology. This goal is achieved via a complex degree programme in which students delve not only into the natural sciences and engineering, but also acquire general and applied skills and knowledge in the areas of economics, project management, information technology and intercultural competence. A strong command of the English language is essential to success in this degree programme, as it is a necessary prerequisite for the overarching goal of consolidating and expanding students' technical language and communication skills.

(2) The academic degree "Bachelor of Science", abbreviated as "B.Sc.", is awarded upon successful completion of the bachelor's examination.

## **Section 3**

### **General Admission Requirements**

(1) General admission requirements are defined in Section 4 RPO.

(2) A "related or comparable programme of study" within the meaning of Section 4 (6) RPO is defined as any undergraduate (bachelor's or German "*Diplom*") degree programme at a university or university of applied sciences in Germany whose content largely and predominately falls under the mantle of biotechnology.

(3) For English language requirements, refer to Section 4 (5a) RPO.

(4) Applicants may request an exemption from the language certificate requirement defined in subsection 3 above. Requests are justified, for example, if an applicant is applying on the basis of secondary school examinations which were conducted in English and in one of the majority English-speaking countries defined in Annex 1. The Examination Board is responsible for deciding on these requests.

## **Section 4**

### **Basic Internship**

In accordance with Section 4 (3) RPO, students in this degree programme are required to complete an eight-week basic internship that is not located at the University – i.e. at an extramural company, public authority or other for-profit or not-for-profit organisation – that is relevant to the content of the curriculum, and that familiarises them with issues from the natural sciences or engineering. The internship may also be conducted in the area of manufacturing.

## **Section 5**

### **Programme Structure; Volume of Instruction Hours; Progression of Studies**

(1) This degree programme has a total volume of instruction of 139 SWS (combined hours per week from all lecture periods in the standard study duration).

(2) Curricular internships are mandatory parts of this degree programme.

(3) In accordance with the European Credit Transfer Accumulation System (ECTS), one credit point (CP) in this degree programme is equivalent to a workload of 30 hours. The modules of this degree programme comprise a total sum of 210 CP in accordance with Section 6 (5) RPO.

(4) On-the-job vocational training is an integrated part of the dual study programme and occurs concurrently over the course of the first four semester of study. Both the vocational training position and the company offering it must relate to the student's field of study. The Faculty of Society and Economics is responsible for judging the relevance of a dual study arrangement. In the "dual" phase of study, the contents of the first two semesters for full-time students are instead taught over four semesters. During this initial period, students attend two days of lectures at the University and spend the remaining three days in the workplace. The dual phase usually concludes before the fifth semester with a comprehensive examination (in German) at the regional Chamber of Industry and Commerce.

(5) In part-time study arrangement, professionals in the workforce can study on a part-time basis while continuing their career. In this mode of study, the regular content of the first two full-time semesters is taught instead over the course of four semesters; accordingly, the standard period of study is prolonged by two semesters to nine semesters total. During this initial period, part-time students attend two days of lectures at the University and spend the remaining three days in the workplace.

(6) Additional information about how this degree programme is organised and about the type, form and scope of modules can be found in the attached study and examination plan (see annex). Additional information about learning outcomes, qualification aims, contents and forms of examination can be found in the corresponding module guide, which is available for viewing in the faculty's central office.

(7) Examinations take place over the course of study. Registration for examinations requires proof of completion of any prerequisite modules / module examinations, insofar as prerequisites for a module and/or for lectures offered as part of a module are explicitly defined in the annex of these regulations.

(8) In addition to the general prerequisites for admission to the internship or study abroad semester (Section 21 (2) RPO), students in this degree programme must have successfully completed all modules and module examinations scheduled for the first year of study.

## **Section 6**

### **Scope of Examinations**

(1) The time allotted for a written examination depends on the number of weekly instruction hours (SWS) for the corresponding lecture. As a rule, 60 minutes shall be allotted for every two weekly instruction hours (SWS).

(2) An oral examination generally lasts between 30 and 45 minutes.

(3) The text portion of an assignment, term paper or project should not exceed 30 DIN A4 pages.

## **Section 7**

### **Scope and Form of the Thesis**

(1) The text portion of the thesis should generally be between 40 and 100 pages (DIN A4) in length. The thesis may also be supplemented with other media as well, provided their use is appropriate and helpful as additional documentation within the context of the assigned task. In this case the length of the text portion of the thesis may deviate from the aforementioned minimum requirement.

(2) The bachelor's thesis can also be admitted as group work if each student's individual contribution fulfils the requirements in Section 23 (1) RPO and is clearly distinguishable – and thus assessable – due to clear and distinct identification by section, page numbers or other criteria.

(3) Contrary to Section 25 (2) RPO, the allotted timeframe for completing the thesis for part-time students is six months.

## **Section 8**

### **Admission to the Thesis and Colloquium**

(1) In addition to the thesis admission requirements defined under Section 24 (1) RPO, students must also have obtained at least 180 credits.

(2) In addition to the colloquium admission requirements defined under Section 27 (2) RPO, candidates must also have obtained at least 207 CP.

## **Section 9**

### **Credit Values for the Thesis and Colloquium**

(1) Twelve credits are awarded for passing the bachelor's thesis.

(2) Three credits are awarded for passing the colloquium.

**Section 10**  
**Awarding of the Bachelor's Degree**

(1) The bachelor's degree specified in Section 2 (2) is officially conferred with the issuing of the bachelor's degree certificate referred to in Section 30 (1) RPO.

**Section 11**  
**Entry into Force / Transitional Provisions**

(1) These examination regulations shall enter into force on the day after their publication in the Official Notices of Rhine-Waal University of Applied Sciences. They apply to students who first enrolled in Bioengineering B.Sc. of the Faculty of Life Sciences of Rhine-Waal University of Applied Sciences in or after winter semester 2019-20.

(2) Students who first enrolled in Bioengineering B.Sc. before winter semester 2019-20 may continue their studies according to the examination regulations dated 13 January 2013 (Official Notices 03/2013) until 28 February 2026 at the latest. Accordingly, the examination regulations dated 9 July 2014 (Official Notices 26/2014) shall expire on 1 March 2026.

(3) Students currently studying under the examination regulations dated 13 January 2013 (Official Notices 03/2013) may submit a written request to Examination Services (ZSB) to switch to the examination regulations defined in this document. The Faculty Examination Board is responsible for all decisions relating to the recognition of previously earned credits.

Note: These examination regulations entered into force on 14 November 2019.

## **Annex 1**

### **Countries considered “English-speaking”**

- Antigua and Barbuda
- Australia
- Bahamas
- Barbados
- Belize
- Dominica
- Grenada
- Guyana
- Ireland
- Jamaica
- Canada
- New Zealand
- St. Kitts and Nevis
- St. Lucia
- St. Vincent and the Grenadines
- Trinidad and Tobago
- Great Britain and Northern Ireland
- United States of America

## Annex 2

### Recommended study and examination plan for Bioengineering B.Sc., full-time:

Module Nr./Modul- Nr.	Modules/Module	Module Requirements Modulvoraus- setzungen	CH SWS	L/V	S	Type E/U	LC/Pr	Pro	Ex/Prü graded/ benotet	attestati on/ Testat	CP*	WT / WS 1	ST / SS 2	WT / WS 3	SWS / CH ST / SS 4	WT / WS 5	ST / SS 6	WT / WS 7
BE_01	Cell Biology and Microbiology Zellbiologie und Mikrobiologie		4	2			2		P	T	5	4						*
BE_02	Fundamentals of Chemistry Grundlagen der Chemie		4	2			2		P	T	5	4						*
BE_03	Bioengineering Physics I Bioengineering Physik I		4	2		1	1		P	T	5	4						*
BE_04	Mathematics Mathematik		6	2	1	3			P		5	6						
BE_05	International Project Management Internationales Projektmanagement		5	1	3	1				T	5	5						
BE_06	Basics of Economic Sciences and Law Grundlagen der Wirtschafts- und Rechtswissenschaften		5	1	3	1			P		5	5						
BE_07	Genetics and Molecular Biology Genetik und Molekularbiologie	BE_01	4	2			2		P	T	5		4					*
BE_08	Applied Chemistry Angewandte Chemie	BE_02	6	2	1	2	1		P	T	5		6					*
BE_09	Biochemistry Biochemie	BE_02	4	2			2		P	T	5		4					*
BE_10	Bioengineering Physics II Bioengineering Physik II	BE_03	4	2		1	1		P	T	5		4					*
BE_11	Applied Microbiology Angewandte Mikrobiologie	BE_01	4	2			2		P	T	5		4					*
BE_12	Applied Mathematics Angewandte Mathematik	BE_04	4	2		2			P		5		4					
BE_13	Physical Chemistry Physikalische Chemie	BE_03 BE_10	4	2		1	1		P	T	5			4				*
BE_14	Instrumental Analytics Instrumentelle Analyse	BE_03	4	2		2			P		5			4				
BE_15	Measurement and Control Engineering Mess- und Regelungstechnik	BE_04	3	2		1			P		5			3				
BE_16	Process Engineering Chemische Verfahrenstechnik	BE_04	6	2		2	2		P	T	5			6				*
BE_17	Current Topics in Biology Aktuelle Themen der Biologie		4		4					T	5			4				
BE_18	Data Analysis and Applied Statistics Datenanalyse und angewandte Statistik		4		2			2	P		5			4				
BE_19	Bioprocess Engineering Bioverfahrenstechnik	BE_11 BE_16	4	2			2		P	T	5				4			*
BE_20	Enzyme Engineering Enzym Engineering	BE_09	4	2	1	1			P		5				4			
BE_21	Project Projekt	BE_05	4					4		T	5				4			
BE_22	Bioinformatics Bioinformatik	BE_04	4	2		2			P		5				4			
BE_23	Elective modules 1 Wahlpflichtkatalog 1		8	4	4				P		10				8			
BE_24	Downstream Processing Produktaufarbeitung	BE_09 BE_19	4	2	2				P		5					4		
BE_25	Industrial Biotechnology Industrielle Biotechnologie	BE_09 BE_11	4	2	2				P		5					4		
BE_26	Integrated Management Systems and Quality Management Integrierte Managementsysteme und Qualitätsmanagement		4	1	2	1			P		5					4		
BE_27	Elective modules 2 Wahlpflichtkatalog 2		12	4	4	4			P		15					12		
BE_28	Internship or study abroad Praxissemester oder Auslandsstudiensemester	min. 90 ECTS **								T	30						X	
BE_29	Academic Methods and Principles Wissenschaftliches Arbeiten		4		2	2				T	5							4
BE_30	Elective Modules 3 Wahlpflichtkatalog 3		8		4			4		T	10							8
BE_31	Bachelor Thesis Bachelorarbeit	min. 180 ECTS							P		12							X
BE_32	Colloquium Kolloquium	207 ECTS							P		3							X
total credit hours // Semesterwochenstunden			139	49	35	27	18	10				28	26	25	24	24	0	12
Credit Points												30	30	30	30	30	30	30
														150			60	
												210						

#### Abbreviations: // Abkürzungen

CH = credit hours per week // SWS = Semesterwochenstunden

WS = winter term // Wintersemester

SS = summer term // Sommersemester

Ex/Prü = type of examination // Prüfungsart

CP = credit points (= ECTS-points)

L/V = Lecture // Vorlesung

E/U = exercise // Übung

LC/Pr = lab course // Praktikum

Pro = project // Projekt

T = certificate // Testat (unbenotet)

P = examination (marked) // benotete Prüfung

\*ECTS will only be credited after completing all parts of the module.

ECTS werden erst nach vollständigem Ableisten aller Moduleile gutgeschrieben.

\*\* In addition to the General Examination Regulations for Bachelor's Degree Programmes regarding the admission to the internship or study abroad the student has to show the successful completion of all modules/module examinations of the first study year of the study programme.

Ergänzend zu den Voraussetzungen der Rahmenprüfungsordnung zur Zulassung zum Praxis- oder Auslandsstudiensemester hat der/die Studierende das erfolgreiche Ableisten sämtlicher

Module/Modulprüfungen der 1. Studienjahres des Studienganges nachzuweisen.

	gesamt	1.Sem	2.Sem	3.Sem	4.Sem	5.Sem	6.Sem	7.Sem
SWS	139	28	26	25	24	24	0	12
CP	210	30	30	30	30	30	30	30

# Elective Catalogue

				Type					Ex/Prü		CP*
				L/V	S	E/Ü	LC/Pr	Pro	graded/benotet	attestati on/ Testat	
<b>Elective modules 1</b>											
<b>Wahlpflichtkatalog 1</b>											
BE_23.1	Technical enzymology and Biocatalysis		CH	4		4			P		5
Technische Enzymologie und Biokatalyse											
BE_23.2	Agricultural Biotechnology and Biofuels			4		4			P		5
Grüne Biotechnologie und Biotreibstoffe											
BE_23.3	Nanobiotechnology			3	3				P		5
Nanobiotechnologie											
BE_23.4	Fluid Mechanics and Systems Dynamics			4	2		2		P	T	5
Strömungsmechanik und Systemdynamik											
BE_23.5	Module from any bachelor study course of Faculty of Life Sciences at Rhine-Waal University of Applied Sciences			4	4				P		5
Wahlmöglichkeit Angebot Fakultät Life Sciences											
Bachelorstudiengänge											
2 elective modules amount to				8							10

				Type					Ex/Prü		CP*
				L/V	S	E/Ü	LC/Pr	Pro	graded/benotet	attestati on/ Testat	
<b>Elective modules 2</b>											
<b>Wahlpflichtkatalog 2</b>											
BE_27.1	Metabolic Engineering		CH	4		4			P		5
Metabolic Engineering											
BE_27.2	Biological Physics			4	2		2		P	T	5
Biologische Physik											
BE_27.3	Environmental Biotechnology and Microalgae			4		4			P		5
Umweltbiotechnologie und Mikroalgen											
BE_27.4	Pharmaceutical Biotechnology and Immunology			4	4				P		5
Pharmazeutische Biotechnologie und Immunologie											
BE_27.5	Biopolymers			4	2	1	1		P	T	5
Biopolymere											
BE_27.6	Module from any bachelor study course of Faculty of Life Sciences at Rhine-Waal University of Applied Sciences			4	4				P		5
Wahlmöglichkeit Angebot Fakultät Life Sciences											
Bachelorstudiengänge											
3 elective modules amount to				12							15

				Type					Ex/Prü		CP*
				L/V	S	E/Ü	LC/Pr	Pro	graded/benotet	attestati on/ Testat	
<b>Elective modules 3</b>											
<b>Wahlpflichtkatalog 3</b>											
BE_30.1	Project reg. Academic Principles and Methods in preparation of Bachelor Thesis		SWS	8				8		T	10
Projekt zum Wissenschaftlichen Arbeit in der Vorbereitung der Bachelorarbeit											
BE_30.2	Language Course			4		4				T	5
Sprachkurs											
BE_30.3	Module from catalogue 1 and 2 of study programme			4	4				P		5
Wahlmöglichkeit aus Wahlpflichtkatalog 1 und 2 des Studiengangs											
BE_30.4	Module from any Bachelor Study Course at Rhine-Waal University of Applied Sciences			4	4				P		5
Wahlmöglichkeit Angebot HRW Bachelorstudiengänge											
1-2 elective modules amount to				8							10

The faculty reserves the right to determine a minimum number of participants for offering an elective subject. Admission to mandatory modules is subject to available capacities. The possibility to obtain the required number of credit points remains unaffected. / Die Fakultät behält sich das Recht vor, eine Mindestteilnehmerzahl für das Zustandekommen eines Wahlpflichtkurses festzulegen. Die Zulassung zu Pflichtmodulen erfolgt vorbehaltlich freier Kapazitäten. Die Möglichkeit des Erreichens der vorgeschriebenen

In case of new developments in the different fields of Bioengineering the faculty reserves the right to expand the range of elective modules by further study courses over the time. / Die Fakultät behält sich vor, das Wahlpflichtangebot im Laufe der Zeit bei neuen Entwicklungen in verschiedenen Feldern der Biotechnologie durch weitere Fächer zu erweitern.

\*\*\* The actual selection from any study programme of the Rhine-Waal University has to be approved by the Examination Committee of the Faculty of Life Sciences. / Die konkrete Auswahl aus dem Studienangebot bedarf der Zustimmung des Prüfungsausschussvorsitzenden.



## Recommended study and examination plan for Bioengineering B.Sc., part-time:

												part time study/berufsbegleitendes Studium									
Module Nr. /Modul- Nr.	Modules/Module	Module Requirements Modulvoraus- setzungen	CH SWS	Type						Ex/Prü graded/ benotet	attestati on/ Testat	CP*	SWS / CH								
				L/V	S	E/Ü	LC/Pr	Pro	WT / WS 1				ST / SS 2	WT / WS 3	ST / SS 4	WT / WS 5	ST / SS 6	WT / WS 7	ST / SS 8	WT / WS 9	
BE_01	Cell Biology and Microbiology Zellbiologie und Mikrobiologie		4	2			2		P	T	5	4									
BE_02	Fundamentals of Chemistry Grundlagen der Chemie		4	2			2		P	T	5	4									
BE_03	Bioengineering Physics I Bioengineering Physik I		4	2		1	1		P	T	5	4									
BE_04	Mathematics Mathematik		6	2	1	3			P		5	6									
BE_05	International Project Management Internationales Projektmanagement		5	1	3	1				T	5			5							
BE_06	Basics of Economic Sciences and Law Grundlagen der Wirtschafts- und Rechtswissenschaften		5	1	3	1			P		5				5						
BE_07	Genetics and Molecular Biology Genetik und Molekularbiologie	BE_01	4	2			2		P	T	5		4								
BE_08	Applied Chemistry Angewandte Chemie	BE_02	6	2	1	2	1		P	T	5				6						
BE_09	Biochemistry Biochemie	BE_02	4	2			2		P	T	5		4								
BE_10	Bioengineering Physics II Bioengineering Physik II	BE_03	4	2		1	1		P	T	5		4								
BE_11	Applied Microbiology Angewandte Mikrobiologie	BE_01	4	2			2		P	T	5				4						
BE_12	Applied Mathematics Angewandte Mathematik	BE_04	4	2		2			P		5		4								
BE_13	Physical Chemistry Physikalische Chemie	BE_03 BE_10	4	2		1	1		P	T	5			4							
BE_14	Instrumental Analytics Instrumentelle Analyse	BE_03	4	2		2			P		5					4					
BE_15	Measurement and Control Engineering Mess- und Regelungstechnik	BE_04	3	2		1			P		5			3							
BE_16	Process Engineering Chemische Verfahrenstechnik	BE_04	6	2		2	2		P	T	5			6							
BE_17	Current Topics in Biology Aktuelle Themen der Biologie		4		4					T	5							4			
BE_18	Data Analysis and Applied Statistics Datenanalyse und angewandte Statistik		4		2			2	P		5					4					
BE_19	Bioprocess Engineering Bioverfahrenstechnik	BE_11 BE_16	4	2			2		P	T	5				4						
BE_20	Enzyme Engineering Enzym Engineering	BE_09	4	2	1	1			P		5				4						
BE_21	Project Projekt	BE_05	4					4		T	5						4				
BE_22	Bioinformatics Bioinformatik	BE_04	4	2		2			P		5						4				
BE_23	Elective modules 1 Wahlpflichtkatalog 1		8	4	4				P		10						8				
BE_24	Downstream Processing Produktaufarbeitung	BE_09 BE_19	4	2	2				P		5					4					
BE_25	Industrial Biotechnology Industrielle Biotechnologie	BE_09 BE_11	4	2	2				P		5							4			
BE_26	Integrated Management Systems and Quality Management Integrierte Managementsysteme und Qualitätsmanagement		4	1	2	1			P		5							4			
BE_27	Elective modules 2 Wahlpflichtkatalog 2		12	4	4	4			P		15							4			8
BE_28	Internship or study abroad Praxissemester oder Auslandsstudiensemester	min. 90 ECTS **								T	30		X								
BE_29	Academic Methods and Principles Wissenschaftliches Arbeiten		4		2	2				T	5										4
BE_30	Elective Modules 3 Wahlpflichtkatalog 3		8		4			4		T	10										8
BE_31	Bachelor Thesis Bachelorarbeit	min. 180 ECTS							P		12								X		
BE_32	Kolloquium Kolloquium	207 ECTS							P		3										X
total credit hours // Semesterwochenstunden			139	49	35	27	18	10													
													18	16	18	18	17	16	16	0	20
													20	20	20	20	20	20	20	42	28
													80				60			70	
																210					

Abbreviations: // Abkürzungen  
 CH = credit hours per week // SWS = Semestervochenstunden  
 WS = winter term // Wintersemester  
 SS = summer term // Sommersemester  
 Ex/Prü = type of examination // Prüfungsart  
 CP = credit points (= ECTS-points)  
 L/V = Lecture // Vorlesung  
 E/Ü = exercise // Übung  
 LC/Pr = lab course // Praktikum  
 Pro = project // Projekt  
 T = certificate // Testat (unbenotet)  
 P = examination (marked) // benotete Prüfung

\* ECTS will only be credited after completing all parts of the module.  
 ECTS werden erst nach vollständigem Ableisten aller Modulteilte gutgeschrieben.  
 \*\* In addition to the General Examination Regulations for Bachelor's Degree Programmes regarding the admission to the internship or study abroad the student has to show the successful completion of all modules/module examinations of the first study year of the study programme.  
 Ergänzend zu den Voraussetzungen der Rahmenprüfungsordnung zur Zulassung zum Praxis- oder Auslandsstudiensemester hat der/die Studierende das erfolgreiche Ableisten sämtlicher Module/Modulprüfungen des 1. Studienjahres des Studiengangs nachzuweisen

	gesamt	1.Sem	2.Sem	3.Sem	4.Sem	5.Sem	6.Sem	7.Sem	8.Sem	9.Sem
SWS	139	18	16	18	18	17	16	16	0	20
CP	210	20	20	20	20	20	20	20	42	28

Electives are identical to the full-time study plan.

## Recommended study and examination plan for Bioengineering B.Sc., dual:

Module Nr./Modul- Nr.	Modules/Module	Module Requirements Modulvoraus- setzungen	CH SWS	L/V	S	E/U	LC/Pr	Pro	Ex/Prü graded/ benotet	attestati on/ Testat	CP*	DUAL				VOLLZEIT				
												Mo/Di	Mo/Di	Do/Fr	Do/Fr	SWS / CH				
												WT / WS 1	ST / SS 2	WT / WS 3	ST / SS 4	WT / WS 5	ST / SS 6	WT / WS 7	ST / SS 8	WT / WS 9
BE_01	Cell Biology and Microbiology Zellbiologie und Mikrobiologie		4	2			2		P	T	5	4								*
BE_02	Fundamentals of Chemistry Grundlagen der Chemie		4	2			2		P	T	5	4								*
BE_03	Bioengineering Physics I Bioengineering Physik I		4	2		1	1		P	T	5			4						*
BE_04	Mathematics Mathematik		6	2	1	3			P		5	6								
BE_05	International Project Management Internationales Projektmanagement		5	1	3	1				T	5			5						
BE_06	Basics of Economic Sciences and Law Grundlagen der Wirtschafts- und Rechtswissenschaften		5	1	3	1			P		5			5						
BE_07	Genetics and Molecular Biology Genetik und Molekularbiologie	BE_01	4	2			2		P	T	5		4							*
BE_08	Applied Chemistry Angewandte Chemie	BE_02	6	2	1	2	1		P	T	5				6					*
BE_09	Biochemistry Biochemie	BE_02	4	2			2		P	T	5		4							*
BE_10	Bioengineering Physics II Bioengineering Physik II	BE_03	4	2		1	1		P	T	5				4					*
BE_11	Applied Microbiology Angewandte Mikrobiologie	BE_01	4	2			2		P	T	5				4					*
BE_12	Applied Mathematics Angewandte Mathematik	BE_04	4	2		2			P		5		4							
BE_13	Physical Chemistry Physikalische Chemie	BE_03 BE_10	4	2		1	1		P	T	5					4				*
BE_14	Instrumental Analytics Instrumentelle Analyse	BE_03	4	2		2			P		5					4				
BE_15	Measurement and Control Engineering Mess- und Regelungstechnik	BE_04	3	2		1			P		5						3			
BE_16	Process Engineering Chemische Verfahrenstechnik	BE_04	6	2		2	2		P	T	5					6				*
BE_17	Current Topics in Biology Aktuelle Themen der Biologie		4		4					T	5					4				
BE_18	Data Analysis and Applied Statistics Datenanalyse und angewandte Statistik		4		2			2	P		5					4				
BE_19	Bioprocess Engineering Bioverfahrenstechnik	BE_11 BE_16	4	2			2		P	T	5						4			*
BE_20	Enzyme Engineering Enzym Engineering	BE_09	4	2	1	1			P		5						4			
BE_21	Project Projekt	BE_05	4					4		T	5						4			
BE_22	Bioinformatics Bioinformatik	BE_04	8	2		2			P		5						4			
BE_23	Elective modules 1 Wahlpflichtkatalog 1		4	4	4				P		10						8			
BE_24	Downstream Processing Produktaufarbeitung	BE_09 BE_19	4	2	2				P		5							4		
BE_25	Industrial Biotechnology Industrielle Biotechnologie	BE_09 BE_11	4	2	2				P		5							4		
BE_26	Integrated Management Systems and Quality Management Integrierte Managementsysteme und Qualitätsmanagement		4	1	2	1			P		5							4		
BE_27	Elective modules 2 Wahlpflichtkatalog 2		12	4	4	4			P		15							12		
BE_28	Internship or study abroad Praxissemester oder Auslandsstudiensemester	min. 90 ECTS **								T	30								X	
BE_29	Academic Methods and Principles Wissenschaftliches Arbeiten		4		2	2				T	5									4
BE_30	Elective Modules 3 Wahlpflichtkatalog 3		8		4			4		T	10									8
BE_31	Bachelor Thesis Bachelorarbeit	min. 180 ECTS							P		12									X
BE_32	Colloquium Kolloquium	207 ECTS							P		3									X
total credit hours // Semesterwochenstunden			139	49	35	27	18	10				14	12	14	14	25	24	24	0	12
Credit Points												15	15	15	15	30	30	30	30	60
												210								

Abbreviations: // Abkürzungen  
 CH = credit hours per week // SWS = Semesterwochenstunden  
 WS = winter term // Wintersemester  
 SS = summer term // Sommersemester  
 Ex/Prü = type of examination // Prüfungsart  
 CP = credit points (= ECTS-points)  
 L/V = Lecture // Vorlesung  
 E/U = exercise // Übung  
 LC/Pr = lab course // Praktikum  
 Pro = project // Projekt  
 T = certificate // Testat (unbenotet)  
 P = examination (marked) // benotete Prüfung

\* ECTS will only be credited after completing all parts of the module.  
 ECTS werden erst nach vollständigem Ableisten aller Modultelle gutgeschrieben.  
 \*\* In addition to the General Examination Regulations for Bachelor's Degree Programmes regarding the admission to the internship or study abroad the student has to show the successful completion of all modules/module examinations of the first study year of the study programme.  
 Ergänzend zu den Voraussetzungen der Rahmenprüfungsordnung zur Zulassung zum Praxis- oder Auslandsstudiensemester hat der/die Studierende das erfolgreiche Ableisten sämtlicher Module/Modulprüfungen des 1. Studienjahres des Studiennamens nachzuweisen

	gesamt	1.Sem	2.Sem	3.Sem	4.Sem	5.Sem	6.Sem	7.Sem	8.Sem	9.Sem
SWS	139	14	12	14	14	25	24	24	0	12
CP	210	15	15	15	15	30	30	30	30	30

Electives are identical to the full-time study plan.