Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject
Computational Mathematics as a Bachelor's with 1 major
with the degree "Bachelor of Science" (180 ECTS credits)

Responsible: Institute of Mathematics   Examination regulations version: 2013

Abbreviations used:	Course types: **E** = field trip, **K** = colloquium, **O** = conversatorium, **P** = placement/lab course, **R** = project, **S** = seminar, **T** = tutorial, **Ü** = exercise, **V** = lecture
	Term: **SS** = summer semester, **WS** = winter semester
	Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed
	Regulations: **(L)ASPO** = general academic and examination regulations (for teaching-degree programmes), **FSB** = subject-specific provisions, **SFB** = list of modules
	Other: **A** = thesis, **LV** = course(s), **PL** = assessment(s), **TN** = participants, **VL** = prerequisite(s)
Conventions for the modules in this SFB:	Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.
Information on assessment procedures:	Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.
	Should a module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.
	Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with   the general regulations governing the degree subject described in this module catalogue:

ASPO2009

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

08-Apr-2013 (2013-53)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.

Every module will be described using the following form:

Abbreviation	**Module title**						
	ECTS		Duration	(in semesters)	Method of grading		Module level	
	Courses		To be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y				
	Method of assessment						
	Only after successful completion of	if applicable					
	Other prerequisites	if applicable					
	Participants and allocation of places	if applicable					
	Additional information	if applicable					
	Referred to in LPO I	if applicable (examination regulations for teaching-degree programmes)					

Compulsory Courses (99 ECTS credits)							

10-M-ANA-122-m01	**Analysis**						
	ECTS	20	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate

	Courses	This module comprises 3 module components. Information on courses will be listed separately for each module component. • 10-M-ANA-1-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-ANA-2-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-ANA-P-122: M (no information on SWS (weekly contact hours) and course language available)

	Method of assessment	Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. **Assessment in module component 10-M-ANA-1-122:** Analysis 1 Analysis 1 • 8 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. **Assessment in module component 10-M-ANA-2-122:** Analysis 2 Analysis 2 • 8 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. **Assessment in module component 10-M-ANA-P-122:** Examination in Analysis • 4 ECTS, Method of grading: numerical grade • oral examination of one candidate each (approx. 30 minutes); assessment will have reference to the contents of modules 10-M-ANA-1 and 10-M-ANA-2 • Language of assessment: German, English if agreed upon with the examiner • Only after successful completion of module components: Successful completion of the written examination in any one of the other two module components is a prerequisite for participation in module component 10-M-ANA-P.

	Other prerequisites	By way of exception, additional prerequisites are listed in the section on assessments.
	Referred to in LPO I	§ 73 (1) 1. Mathematik Analysis

10-M-LNA-122-m01	**Linear Algebra**						
	ECTS	20	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate

Courses	This module comprises 3 module components. Information on courses will be listed separately for each module component. • 10-M-LNA-1-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-LNA-2-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-LNA-P-122: M (no information on SWS (weekly contact hours) and course language available)
Method of assessment	Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. **Assessment in module component 10-M-LNA-1-122:** Linear Algebra 1 Linear Algebra 1 • 8 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. **Assessment in module component 10-M-LNA-2-122:** Linear Algebra 2 Linear Algebra 2 • 8 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. **Assessment in module component 10-M-LNA-P-122:** Examination in Linear Algebra • 4 ECTS, Method of grading: numerical grade • oral examination of one candidate each (approx. 30 minutes); assessment will have reference to the contents of modules 10-M-LNA-1 and 10-M-LNA-2 • Language of assessment: German, English if agreed upon with the examiner • Only after successful completion of module components: Successful completion of the written examination in any one of the other two module components is a prerequisite for participation in module component 10-M-LNA-P.
other prerequisites	By way of exception, additional prerequisites are listed in the section on assessments.

10-M-VAN-122-m01	**Advanced Analysis**						
	ECTS	9	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 90 to 180 minutes) if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner				
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.				
10-M-MWR-122-m01	**Modelling and Computational Science**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 90 to 180 minutes) if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English if agreed upon with the examiner				
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.				

10-M-NUM-122-m01	**Numerical Mathematics**						
	ECTS	20	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate

	Courses	This module comprises 3 module components. Information on courses will be listed separately for each module component. • 10-M-NUM-1-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-NUM-2-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-NUM-P-122: M (no information on SWS (weekly contact hours) and course language available)
	Method of assessment	Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. **Assessment in module component 10-M-NUM-1-122:** Numerical Mathematics 1 Numerical Mathematics 1 • 8 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. **Assessment in module component 10-M-NUM-2-122:** Numerical Mathematics 2 Numerical Mathematics 2 • 8 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. **Assessment in module component 10-M-NUM-P-122:** Examination in Numerical Mathematics • 4 ECTS, Method of grading: numerical grade • oral examination of one candidate each (approx. 30 minutes); assessment will have reference to the contents of modules 10-M-NUM-1 and 10-M-NUM-2 • Language of assessment: German, English if agreed upon with the examiner • Only after successful completion of module components: Successful completion of the written examination in any one of the other two module components is a prerequisite for participation in module component 10-M-NUM-P.
	other prerequisites	By way of exception, additional prerequisites are listed in the section on assessments.

		• 10-M-NUM-P-122: -- • 10-M-NUM-1-122: Additional information on module duration: 1 to 2 semesters. • 10-M-NUM-2-122: Additional information on module duration: 1 to 2 semesters.

10-M-VTC-122-m01	**Advanced Computational Mathematics**						
	ECTS	20	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate

Courses	This module has 6 components; information on courses listed separately for each component. • 10-M-STO-1-122, 10-M-DGL-1-122, 10-M-FTH-1-122, 10-M-GAN-1-122, and 10-M-FAN-1-122: V + Ü (no information on language and number of weekly contact hours available) • 10-M-VTC-P-122: M (no information on language and number of weekly contact hours available)
Method of assessment	This module has the following 6 assessment components. To pass this module, students must pass two out of the 5 assessment components that are first in the list below and the assessment component that is last in the list below. **Assessment in module component 10-M-STO-1-122:** Stochastik 1 (Stochastics 1), **in module component 10-M-DGL-1-122:** Gewöhnliche Differentialgleichungen (Ordinary Differential Equations), **in module component 10-M-FTH-1-122:** Einführung in die Funktionentheorie (Introduction to Complex Analysis), **in module component 10-M-GAN-1-122:** Geometrische Analysis (Geometric Analysis), and **in module component 10-M-FAN-1-122:** Einführung in die Funktionalanalysis (Introduction to Functional Analysis) **:** • 8 ECTS credits, pass / fail • written examination (approx. 90 to 180 minutes). If announced by the lecturer, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 30 minutes). The module component will also be considered successfully completed if it is selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination is passed. • Language of assessment: German; English if agreed upon with examiner(s) • Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. **Assessment in module component 10-M-VTC-P-122:** Prüfung in Vertiefung Computational Mathematics (Assessment in Advanced Computational Mathematics) • 4 ECTS credits, numerical grading • oral examination of one candidate each (approx. 30 minutes). Assessment will have reference to the topics covered in the two module components selected by students. • Language of assessment: German; English if agreed upon with examiner(s) • Only after successful completion of module components: Module component 10-M-VTC-P can only be taken by students who passed the written examination in one of the other five module components.
other prerequisites	By way of exception, additional prerequisites are listed in the section on assessments.
Additional Information	Additional information on module duration: 1 to 2 semesters.

Compulsory Electives (50 ECTS credits)							

Computational Mathematics							

10-M-MKG-122-m01	**Mathematics in Culture and Society**						
	ECTS	8	Duration	2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	This module has 4 components; information on courses listed separately for each component. • 10-M-GES-1-122, 10-M-MSC-1-122, and 10-M-SCH-1-122: V + Ü (no information on language and number of weekly contact hours available) • 10-M-PRO-1-122: S (no information on language and number of weekly contact hours available)						
	Method of assessment	This module has the following 4 assessment components. To pass the module as a whole students must pass two of the four assessment components. **Assessment in module component 10-M-GES-1-122:** Ausgewählte Kapitel aus der Geschichte der Mathematik (Selected Topics from the History of Mathematics), **in module component 10-M-MSC-1-122:** Mathematisches Schreiben (Mathematical Writing), and **in module component 10-M-SCH-1-122:** Schulmathematik vom höheren Standpunkt (School Mathematics from a Higher Perspective) **:** • 4 ECTS credits, pass / fail • project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course) • Assessment will be offered in the semester in which the course is offered and in the subsequent semester. • Language of assessment: German; English if agreed upon with examiner(s) • Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. **Assessment in module component 10-M-PRO-1-122:** Proseminar Mathematik (Proseminar Mathematics) • 4 ECTS credits, pass / fail • talk (approx. 60 to 180 minutes) • Assessment will be offered in the semester in which the course is offered and in the subsequent semester. • Language of assessment: German; English if agreed upon with examiner(s) • Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.						
	other prerequisites	By way of exception, additional prerequisites are listed in the section on assessments.						
	Additional Information	Additional information on module duration: 1 to 2 semesters.						

10-M-SE2-122-m01	**Additional Seminar in Mathematics**						
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		talk (approx. 60 to 180 minutes) Language of assessment: German, English if agreed upon with the examiner				
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.				

10-M-ERC-122-m01	**Selected Topics from Computational Mathematics**						

ECTS	10	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate

Courses	This module has 13 components; information on courses listed separately for each component. • 10-M-STO-1-122, 10-M-ALG-1-12, 10-M-DGE-1-122, 10-M-DGL-1-122, 10-M-FTH-1-122, 10-M-GAN-1-122, 10-M-PGE-1-122, 10-M-DIM-1-122, 10-M-FAN-1-122, 10-M-ORS-1-122, 10-M-ZTH-1-122, and 10-M-MMP-2-122: V + Ü (no information on language and number of weekly contact hours available) • 10-M-ERC-P-122: M (no information on language and number of weekly contact hours available)

Method of assessment	This module has the following 13 assessment components. To pass this module, students must pass one out of the 12 assessment components that are first in the list below and the assessment component that is last in the list below. **Assessment in module component 10-M-STO-1-122:** Stochastik 1 (Stochastics 1), **in module component 10-M-ALG-1-122:** Einführung in die Algebra (Introduction to Algebra) **in module component 10-M-DGE-1-122:** Einführung in die Differentialgeometrie (Introduction to Differential Geometry), **in module component 10-M-DGL-1-122:** Gewöhnliche Differentialgleichungen (Ordinary Differential Equations), **in module component 10-M-FTH-1-122:** Einführung in die Funktionentheorie (Introduction to Complex Analysis), **in module component 10-M-GAN-1-122:** Geometrische Analysis (Geometric Analysis), **in module component 10-M-PGE-1-122:** Einführung in die Projektive Geometrie (Introduction to Projective Geometry), **in module component 10-M-DIM-1-122:** Einführung in die Diskrete Mathematik (Introduction to Discrete Mathematics), **in module component 10-M-FAN-1-122:** Einführung in die Funktionalanalysis (Introduction to Functional Analysis), **in module component 10-M-ORS-1-122:** Operations Research, **in module component 10-M-ZTH-1-122:** Einführung in die Zahlentheorie (Introduction to Number Theory), and **in module component 10-M-MMP-2-122:** Mathematik in der Mathematischen Physik 2 (Mathematics in Mathematical Physics 2) **:** • 8 ECTS credits, pass / fail • written examination (approx. 90 to 180 minutes). If announced by the lecturer, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 30 minutes). The module component will also be considered successfully completed if it is selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination is passed. • Language of assessment: German; English if agreed upon with examiner(s) • Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. **Assessment in module component 10-M-ERC-P-122:** Prüfung in Ergänzung Computational Mathematics (Assessment in Selected Topics from Computational Mathematics) • 2 ECTS credits, numerical grading • oral examination of one candidate each (approx. 30 minutes). Assessment will have reference to the topics covered in the module component selected by students. • Language of assessment: German; English if agreed upon with examiner(s) • Only after successful completion of module components: Module component 10-M-ERC-P can only be taken by students who passed the written examination in one of the other 12 module components.

other prerequisites	By way of exception, additional prerequisites are listed in the section on assessments.
Additional Information	Additional information on module duration: 1 to 2 semesters.

Application-oriented Subject

Students must take one of the application-oriented subjects (Biologie (Biology), Chemie (Chemistry), Informatik (Computer Science) and Physik (Physics)) with the specified mandatory courses and/or mandatory electives.

Application-oriented Subject Biology

Application-oriented Subject Biology Compulsory Electives 1

07-2A2GN-V-072-m01	**Genetics, Neurobiology, Behaviour**						
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		This module comprises 3 module components. Information on courses will be listed separately for each module component. • 07-2A2GNV-1G-072: V + Ü (no information on SWS (weekly contact hours) and course language available) • 07-2A2GNV-2N-072: V + Ü (no information on SWS (weekly contact hours) and course language available) • 07-2A2GNV-3V-072: V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. **Assessment in module component 07-2A2GNV-1G-072:** Basic Genetics Basic Genetics • 2 ECTS, Method of grading: numerical grade • written examination (approx. 30 minutes) • Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course. **Assessment in module component 07-2A2GNV-2N-072:** Basic Neurobiology Basic Neurobiology • 2 ECTS, Method of grading: numerical grade • written examination (approx. 30 minutes) • Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course. **Assessment in module component 07-2A2GNV-3V-072:** Behavioural Biology Behavioural Biology • 2 ECTS, Method of grading: numerical grade • written examination (approx. 30 minutes, word problems and/or multiple choice questions) • Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.				
	other prerequisites		By way of exception, additional prerequisites are listed in the section on assessments.				
	Participants and allocation of places		Only as part of "spezielles Studienangebot": 10 places.				
07-2BM-072-m01	**Mathematical Biology and Biostatistics**						
	ECTS	4	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 45 minutes) including multiple choice questions				
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.				
	Participants and allocation of places		Only as part of "spezielles Studienangebot": 30 places.				

07-2A2TP-NF-082-m01	**Basic Physiology of Animals for minor field of study**							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 60 minutes, word problems and/or multiple choice questions)					
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.					
07-2A2PPR-NF-082-m01	**Basic Physiology of Prokaryotes for minor field of study**							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 60 minutes) including multiple choice questions					
07-2A2PPF-NF-082-m01	**Basic Physiology of Plants for minor field of study**							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 45 minutes)					
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.					
07-3A3OE-102-m01	**Plant and Animal Ecology**							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		This module comprises 2 module components. Information on courses will be listed separately for each module component. • 07-3A3OE-1-102: V + Ü (no information on SWS (weekly contact hours) and course language available) • 07-3A3OE-2-102: V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. **Assessment in module component 07-3A3OE-1-102:** Animal Ecology Animal Ecology • 3 ECTS, Method of grading: numerical grade • written examination (approx. 45 minutes) • Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course. **Assessment in module component 07-3A3OE-2-102:** Plant Ecology Plant Ecology • 3 ECTS, Method of grading: numerical grade • written examination (approx. 45 minutes) • Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.					
	other prerequisites		By way of exception, additional prerequisites are listed in the section on assessments.					
	Participants and allocation of places		Only as part of pool of general key skills (ASQ): 15 places. Places will be allocated by lot.					

07-3A3GM-T-102-m01	**Genes, Molecules, Technologies**						
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		This module has 4 components; information on courses listed separately for each component. • 07-3A3GMT-1-102, 07-3A3GMT-2-102, 07-3A3GMT-3-102, and 07-3A3GMT-4-102: V (no information on language and number of weekly contact hours available)					
	Method of assessment		This module has the following 4 assessment components. Unless stated otherwise, students must pass all of these assessment components to pass the module as a whole. **Assessment in module component 07-3A3GMT-1-102:** Genetik (Genetics), **in module component 07-3A3GMT-2-102:** Bioinformatik (Bioinformatics), **in module component 07-3A3GMT-3-102:** Biotechnologie (Biotechnology), and **in module component 07-3A3GMT-4-102:** Pharmakokinetik (Pharmacokinetics) **:** • 1.5 ECTS credits, numerical grading • written examination (approx. 30 minutes, including multiple choice questions)					
07-1A1ZO-NF-102-m01	**From Cells to Organisms for minor field of study**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		This module has 4 components; information on courses listed separately for each component. • 07-1A1ZO-3P-072, 07-1A1ZO-4T-072, and 07-1A1ZO-2E-102: V + Ü (no information on language and number of weekly contact hours available) • 07-1A1ZO-NF-1Z-082: V (no information on language and number of weekly contact hours available)					
	Method of assessment		This module has the following 4 assessment components. Unless stated otherwise, students must pass all of these assessment components to pass the module as a whole. **Assessment in module component 07-1A1ZO-3P-072:** Das Pflanzenreich (The Plant Kingdom) • 4 ECTS credits, numerical grading • written examination (approx. 60 minutes) • Additional prerequisites: admission prerequisite to assessment: regular attendance of exercises as well as successful completion of the respective exercises. **Assessment in module component 07-1A1ZO-4T-072:** Das Tierreich (The Animal Kingdom) • 4 ECTS credits, numerical grading • written examination (approx. 60 minutes) • Additional prerequisites: admission prerequisite to assessment: regular attendance of and participation in exercises as well as successful completion of the respective exercises as specified at the beginning of the course. **Assessment in module component 07-1A1ZO-NF-1Z-082:** Die Zelle für das Nebenfach Biologie (The Cell for Biology Minors) • 1 ECTS credit, numerical grading • written examination (approx. 60 minutes) including multiple choice questions **Assessment in module component 07-1A1ZO-2E-102:** Evolution • 1 ECTS credit, pass / fail • written examination (approx. 30 minutes, including multiple choice questions) • Additional prerequisites: admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.					
	other prerequisites		By way of exception, additional prerequisites are listed in the section on assessments.					

07-3A3EBI- OT-102-m01	**Developmental Biology of Animals**						
	ECTS	4	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 30 to 60 minutes) including multiple choice questions				
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.				
07-3A3E- BIOP-102-m01	**Developmental Biology of Plants for minor field of study**						
	ECTS	4	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 30 to 60 minutes) including multiple choice questions				
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.				

Application-oriented Subject Biology Compulsory Electives 2

When taking up their studies, students are highly recommended to consult with the course advisory service Biology that will help them choose appropriate modules from the list below. Modules from the areas "Spezielle Biowissenschaften I / II" ("Specific Biosciences I / II") may only be used by students who achieved no less than 32 ECTS credits in the area of mandatory electives 1 beforehand.

07-4S1N-VO3-092-m01	**Functional Morphology of arthropods**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		term paper (approx. 5 to 10 pages)				
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.				
	Participants and allocation of places		Number of places: 20. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.				
07-3A3B-C-102-m01	**Principles of Biochemistry**						
	ECTS	4	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 30 to 60 minutes) including multiple choice questions				
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.				

07-4A4FL-102-m01	**The Flora of Germany**						
	ECTS	7	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate

Courses	This module comprises 2 module components. Information on courses will be listed separately for each module component. • 07-4A4FL-1-102: V + Ü (no information on SWS (weekly contact hours) and course language available) • 07-4A4FL-2-102: E (no information on SWS (weekly contact hours) and course language available)
Method of assessment	Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. **Assessment in module component 07-4A4FL-1-102:** Introduction to the Flora of Germany Introduction to the Flora of Germany • 4 ECTS, Method of grading: numerical grade • written examination (approx. 45 minutes) and practical identification assignment (approx. 45 minutes), weighted 1:1 • Assessment offered: once a year, summer semester • Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises (particular emphasis to be placed on the setting up a herbarium) as specified at the beginning of the course. **Assessment in module component 07-4A4FL-2-102:** Field Excursions on the Flora of Germany • 3 ECTS, Method of grading: (not) successfully completed • log (approx. 1 to 2 pages per field trip) • Assessment offered: once a year, summer semester
other prerequisites	By way of exception, additional prerequisites are listed in the section on assessments.
Participants and allocation of places	Number of places: 180. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allo-

ces will be allocated according to the selection process of group 1.

07-4A4FA-102-m01	**The Fauna of Germany**						
	ECTS	7	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate

Courses	This module comprises 2 module components. Information on courses will be listed separately for each module component. • 07-4A4FA-1-102: V + Ü (no information on SWS (weekly contact hours) and course language available) • 07-4A4FA-2-102: E (no information on SWS (weekly contact hours) and course language available)
Method of assessment	Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. **Assessment in module component 07-4A4FA-1-102:** Introduction to the Fauna of Germany Introduction to the Fauna of Germany • 4 ECTS, Method of grading: numerical grade • written examination (approx. 45 minutes) and practical identification assignment (approx. 45 minutes), weighted 1:1 • Assessment offered: once a year, summer semester • Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises (particular emphasis to be placed on the setting up a herbarium) as specified at the beginning of the course. **Assessment in module component 07-4A4FA-2-102:** Field Excursions on the Fauna of Germany • 3 ECTS, Method of grading: (not) successfully completed • log (approx. 1 to 2 pages per field trip) • Assessment offered: once a year, summer semester
other prerequisites	By way of exception, additional prerequisites are listed in the section on assessments.
Participants and allocation of places	Number of places: 180. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant;

	cation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

07-4S1N-VO1-102-m01	**Neurobiology 1**					
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		P (no information on SWS (weekly contact hours) and course language available)			
	Method of assessment		methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course			
	other prerequisites		Admission prerequisite to assessment: regular attendance of lab course as specified at the beginning of the course.			
	Participants and allocation of places		Number of places: 20. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.			

07-4S1N-VO2-102-m01	**Integrative Behavioral Biology**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + S (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course					
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.					
	Participants and allocation of places		Number of places: 20. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.					

07-4S1M-Z1-102-m01	**Basics in Light- and Electron-Microscopy**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 30 to 60 minutes)				
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.				
	Participants and allocation of places		Number of places: 18. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.				

07-4S1M-Z2-102-m01	**Analysis of Chromosomes**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 30 to 60 minutes)				
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.				
	Participants and allocation of places		Number of places: 18. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.				

07-4S1M-Z6-102-m01	**Special Bioinformatics 1**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		log (approx. 10 to 20 pages) Language of assessment: German or English				
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.				
	Participants and allocation of places		Number of places: 20. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.				

07-4S1PS1-102-m01	**Molecular modelling - From DNA to protein**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		computerised practical examination (approx. 6 hours)				
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.				
	Participants and allocation of places		Number of places: 18. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.				

07-4S1PS2-102-m01	**Introduction to Methods in Plant Ecophysiology**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		Ü + S (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		log (approx. 10 to 20 pages)					
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and seminar as well as successful completion of the respective exercises as specified at the beginning of the course.					
	Participants and allocation of places		Number of places: 15. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.						

07-4S1PS3-102-m01	**Pharmaceutical Drugs in Plants**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		Ü + S (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course				
	other prerequisites		Admission prerequisite to assessment: regular attendance of exercises and seminar as well as successful completion of the respective exercises as specified at the beginning of the course.				
	Participants and allocation of places		Number of places: 6. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.				

07-S1-LP1-102-m01	**Laboratory practical course I**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		P (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course				
	other prerequisites		Admission prerequisite to assessment: regular attendance of lab course as specified at the beginning of the course; please consult with academic advisory service in advance.				
07-S1-Ex1-102-m01	**Excursion I**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		E (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course				
	other prerequisites		Admission prerequisite to assessment: regular attendance of field trip as specified at the beginning of the course; please consult with academic advisory service in advance.				
07-S1-IP1-102-m01	**Interdisciplinary Project I**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		R (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course				
	other prerequisites		Admission prerequisite to assessment: regular attendance of project sessions as specified at the beginning of the course; please consult with academic advisory service in advance.				
07-5EP-102-m01	**External Practical Course**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		P (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course				
	other prerequisites		Admission prerequisite to assessment: regular attendance of lab course as specified at the beginning of the course; please consult with academic advisory service in advance.				

07-S2-EX2-102-m01	**Excursion II**							
	ECTS	10	Duration		1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		E (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course					
	other prerequisites		Admission prerequisite to assessment: regular attendance of field trip as specified at the beginning of the course; please consult with academic advisory service in advance.					
07-S2-IP2-102-m01	**Interdisciplinary Project II**							
	ECTS	10	Duration		1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		R (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course					
	other prerequisites		Admission prerequisite to assessment: regular attendance of project sessions as specified at the beginning of the course; please consult with academic advisory service in advance.					
07-S2-LP2-102-m01	**Laboratory Practical Course II**							
	ECTS	10	Duration		1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		P (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		methods of assessment: a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes); students will be informed about the method and length of the assessment prior to the course					
	other prerequisites		Admission prerequisite to assessment: regular attendance of lab course as specified at the beginning of the course; please consult with academic advisory service in advance.					

07-SQF-OSB-102-m01	**Organisation and Safety in Biosciences**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + S (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		a) written examination (30 to 60 minutes) and b) presentation (approx. 10 minutes) or term paper (approx. 5 to 10 pages)				
	Participants and allocation of places		Number of places: 15. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.				

Application-oriented Subject Chemistry

Application-oriented Subject Chemistry Compulsory Courses (26 ECTS credits)

11-EFNF-072-m01	**Introduction to Physics for Students of Non-physics-related Minor Subjects**						
	ECTS	7	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + V (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 120 minutes)				
	Participants and allocation of places		Only as part of pool of general key skills (ASQ): 10 places. Places will be allocated by lot.				

08-PC1-092-m01	**Physical Chemistry 1**						
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü + V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: 60 or 90 minutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)				
	other prerequisites		Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).				
08-CM1-112-m01	**Introduction to Inorganic Chemistry for Students of Mathematics and other Subjects**						
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 90 minutes)				
08-OC1-092-m01	**Organic Chemistry 1**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: 60 or 90 minutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)				
	other prerequisites		Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).				
	Referred to in LPO I		§ 62 (1) 2. Chemie "Organische und Bioorganische Chemie"				

Application-oriented Subject Chemisty Compulsory Electives

08-TC-092-m01	**Theoretical Models in Chemistry**						
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)				
	other prerequisites		Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).				

08-PC3-092-m01	**Physical and Theoretical Chemistry 3: Symmetry and Quantum Chemistry**						
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü + V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment	a) 1 to 3 written examinations (1 written examination: 90 minutes; 2 written examinations: 60 or 90 minutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)					
	other prerequisites	Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).					

08-OC2-102-m01	**Organic Chemistry 2**						
	ECTS	9	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment	a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German, English					
	Modules successfully completed	08-OC1					
	other prerequisites	Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).					

Application-oriented Subject Computer Science

10-I-AGT-122-m01	**Algorithmic Graph Theory**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment	written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: English, German if agreed upon with the examiner					
	other prerequisites	Where applicable, prerequisites as specified by the lecturer at the beginning of the course (e. g. completion of exercises).					

10-I-ADS-102-m01	**Algorithm and data structures**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 80 to 90 minutes). If announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups. A 80 to 90 minute written examination is equivalent to a 20 minute (approx.) oral examination of one candidate each, a 30 minute (approx.) oral examination in groups of 2 and a 40 minute (approx.) oral examination in groups of 3.				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				
	Referred to in LPO I		§ 49 (1) 1. a) Informatik Theoretische Informatik, Algorithmen und Datenstrukturen § 69 (1) 1. a) Informatik Theoretische Informatik, Algorithmen und Datenstrukturen				

10-I-ST-102-m01	**Software Technology**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 80 to 90 minutes). If announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups. A 80 to 90 minute written examination is equivalent to a 20 minute (approx.) oral examination of one candidate each, a 30 minute (approx.) oral examination in groups of 2 and a 40 minute (approx.) oral examination in groups of 3.				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				
	Referred to in LPO I		§ 49 (1) 1. b) Datenbanksysteme und Softwaretechnologie § 69 (1) 1. b) Datenbanksysteme und Softwaretechnologie				

10-I-PP-102-m01	**Practical Course in Programming**						
	ECTS	10	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 80 to 90 minutes). If announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups. A 80 to 90 minute written examination is equivalent to a 20 minute (approx.) oral examination of one candidate each, a 30 minute (approx.) oral examination in groups of 2 and a 40 minute (approx.) oral examination in groups of 3.				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				
	Additional Information		Additional information on module duration: 1 to 2 semesters.				
	Referred to in LPO I		§ 49 (1) 1. c) Informatik Praktische Softwareentwicklung § 69 (1) 1. d) Informatik Praktische Softwareentwicklung				

10-I-SWP-102-m01	**Practical course in software**						
	ECTS	10	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		completion of project assignments, presentation				
	Referred to in LPO I		§ 49 (1) 1. c) Informatik Praktische Softwareentwicklung § 69 (1) 1. d) Informatik Praktische Softwareentwicklung				
10-I-RAL-102-m01	**Digital computer systems**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 80 to 90 minutes). If announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups. A 80 to 90 minute written examination is equivalent to a 20 minute (approx.) oral examination of one candidate each, a 30 minute (approx.) oral examination in groups of 2 and a 40 minute (approx.) oral examination in groups of 3.				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				
	Referred to in LPO I		§ 69 (1) 1. c) Informatik Technische Informatik				
10-I-IÜ-102-m01	**Information Transmission**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 80 to 90 minutes). If announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups. A 80 to 90 minute written examination is equivalent to a 20 minute (approx.) oral examination of one candidate each, a 30 minute (approx.) oral examination in groups of 2 and a 40 minute (approx.) oral examination in groups of 3.				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				
	Referred to in LPO I		§ 69 (1) 1. c) Informatik Technische Informatik				
10-I-TI-102-m01	**Theoretical informatics**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 80 to 90 minutes). If announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups. A 80 to 90 minute written examination is equivalent to a 20 minute (approx.) oral examination of one candidate each, a 30 minute (approx.) oral examination in groups of 2 and a 40 minute (approx.) oral examination in groups of 3.				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				
	Referred to in LPO I		§ 49 (1) 1. a) Informatik Theoretische Informatik, Algorithmen und Datenstrukturen § 69 (1) 1. a) Informatik Theoretische Informatik, Algorithmen und Datenstrukturen				

10-I-LOG-102-m01	**Logic for informatics**						
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				

10-I-DB-102-m01	**Databases**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 50 to 60 minutes) if announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: German, English if agreed upon with the examiner				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				
	Referred to in LPO I		§ 49 (1) 1. b) Datenbanksysteme und Softwaretechnologie § 69 (1) 1. b) Datenbanksysteme und Softwaretechnologie				

10-I-OOP-102-m01	**Object-oriented Programming**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: German, English if agreed upon with the examiner				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				

10-I-KT-102-m01	**Theory of Complexity**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: German, English if agreed upon with the examiner				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				

10-I-AR-102-m01	**Automation and Control Technology**						
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 80 to 90 minutes). If announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups. A 80 to 90 minute written examination is equivalent to a 20 minute (approx.) oral examination of one candidate each, a 30 minute (approx.) oral examination in groups of 2 and a 40 minute (approx.) oral examination in groups of 3. Language of assessment: German, English if agreed upon with the examiner				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				

10-I-RAK-102-m01	**Computer Architecture**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes) Language of assessment: German, English if agreed upon with the examiner				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				
	Referred to in LPO I		§ 69 (1) 1. c) Informatik Technische Informatik				

10-I-RK-102-m01	**Computer Networks and Communication Systems**						
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 80 to 90 minutes). If announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups. A 80 to 90 minute written examination is equivalent to a 20 minute (approx.) oral examination of one candidate each, a 30 minute (approx.) oral examination in groups of 2 and a 40 minute (approx.) oral examination in groups of 3. Language of assessment: German, English if agreed upon with the examiner				
	other prerequisites		Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).				

Application-oriented Subject Physics

Application-oriented Subject Physics Compulsory Electives 1: Basics

11-ENNF1-062-m01	**Introduction to Physics Part 1 for students of Physics Related Minor Subjects**						
	ECTS	7	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 120 minutes)				
	Participants and allocation of places		Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot.				

11-ENNF2-062-m01	**Introduction to Physics Part 2 for students of Physics Related Minor Subjects**						
	ECTS	7	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 120 minutes)				
	Participants and allocation of places		Only as part of pool of general key skills (ASQ): 20 places. Places will be allocated by lot.				
11-KP-092-m01	**Classical Physics (Mechanics, Thermodynamics, Waves, Oscillations, Electricity, Magnetism and Optics)**						
	ECTS	16	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		Klassische Physik 1 (Mechanik, Wellen, Wärme) (Classical Physics 1 (Mechanics, Waves, Heat)): V (4 weekly contact hours) + Ü (2 weekly contact hours), once a year (winter semester) Klassische Physik 2 (Elektromagnetismus, Optik) (Classical Physics 2 (Electromagnetism, Optics)): V (4 weekly contact hours) + Ü (2 weekly contact hours), once a year (summer semester)				
	Method of assessment		This module has the following assessment components 1. Topics covered in lectures and exercises in part 1 (Klassische Physik 1 (Classical Physics 1)): written examination (approx. 120 minutes). 2. Topics covered in lectures and exercises in part 2 (Klassische Physik 2 (Classical Physics 2)): written examination (approx. 120 minutes). 3. Topics covered in lectures and exercises in parts 1 and 2: oral examination of one candidate each (approx. 30 minutes, usually chosen) or written examination (approx. 120 minutes). Assessment component 3 will be offered in German; English if agreed upon with examiner(s). Successful completion of approx. 50% of practice work each is a prerequisite for admission to assessment components 1 and 2. To qualify for admission to assessment component 3, students must pass assessment component 1 and/or 2. Students are highly recommended to attend both courses Klassische Physik 1 (Classical Physics 1) and Klassische Physik 2 (Classical Physics 2). The topics discussed in these two courses will be covered in assessment component 3. Students must register for assessment components 1 through 3 online (details to be announced). To pass this module, students must first pass assessment component 1 or 2 and must then pass assessment component 3. The grade achieved in assessment component 1 or 2 (whichever is better) and the grade achieved in assessment component 3 will each count 50% towards the overall grade awarded for the module.				
	other prerequisites		Bridge course Mathematische Rechenmethoden der Physik (Mathematical Methods of Physics) for first-semester students.				

Application-oriented Subject Physics Compulsory Electives 2: Lab Course
Exactly one of the two modules 11-P-PA Physikalisches Praktikum Teil A (Physics Practical Course A) and 11-PNNF Physikalisches Praktikum für Studierende eines physiknahen Nebenfachs (Physics Practical Course for Students of Physics-related Minors) must be taken; students are not permitted to take both of these modules.

11-PNNF-062-m01	**Physics Laboratory Course for students of Physics Related Minor Subjects**						
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		a) oral test (approx. 15 minutes) during experiment and b) ungraded written examination (approx. 90 minutes)				
	Participants and allocation of places		Only as part of pool of general key skills (ASQ): 15 places. Places will be allocated by lot.				

11-P-PA-112-m01	**Lab Course A**						
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Auswertung von Messungen und Fehlerrechnung (Measurements and Data Analysis): V (1 weekly contact hour) + Ü (1 weekly contact hour), once a year (winter semester) Beispiele aus Mechanik, Wärmelehre und Elektrik (Examples from Mechanics, Thermodynamics and Electricity, BAM): P (2 weekly contact hours)				
	Method of assessment		This module has the following assessment components 1. Topics covered in lectures and exercises: written examination (approx. 120 minutes) 2. Lab course: a) Preparing, performing and evaluating the experiments will be considered successfully completed if a Testat (exam) is passed. b) Talk (with discussion) to test the students' understanding of the physics-related contents of the course (approx. 30 minutes). Successful completion of approx. 50% of practice work is a prerequisite for admission to assessment component 1 . To pass assessment component 2, students must pass both elements a) and b). Students will be offered one opportunity to retake element a) and/or element b). Students must register for assessment components 1 and 2 online (details to be announced). Students must attend Auswertung von Messungen und Fehlerrechnung (Measurements and Data Analysis) before attending Beispiele aus Mechanik, Wärmelehre und Elektrik (Examples from Mechanics, Thermodynamics and Electricity). To pass this module, students must pass both assessment component 1 and assessment component 2.				
	Referred to in LPO I		§ 53 (1) 1. a) Physik Mechanik, Wärmelehre, Elektrizitätslehre, Optik, der speziellen Relativitätstheorie § 53 (1) 1. c) Physik physikalische Grundpraktika § 77 (1) 1. a) Physik "Grundlagen der Experimentalphysik" § 77 (1) 1. d) Physik "physikalische Praktika"				
11-P-NFB-122-m01	**Basic Practical Course B (Minor Studies)**						
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		a) Preparing, performing and evaluating (lab report) the experiments will be considered successfully completed if a Testat (exam) is passed. Experiments that were not successfully completed can be repeated once. And b) talk (with discussion; approx. 30 minutes) to test the candidate's understanding of the physics-related contents of the module component. Talks that were not successfully completed can be repeated once. Both components of the assessment have to be successfully completed.				
	Modules successfully completed		11-P-PA				
	Additional Information		Additional information on module duration: 1 to 2 semesters.				

Application-oriented Subject Physics Compulsory Electives 3
Out of several module components covering the same contents, students may only use one each. This means that the following combinations are not permitted:
- 11-KM may neither be combined with 11-QAM nor with 11-FKP.
- 11-STE may neither be combined with 11-ST nor with 11-ED.

- 11-TQM may neither be combined with 11-TM nor with 11-QM.						

11-KM-092-m01	**Condensed Matter (Quanta, Atoms, Molecules, Solid State Physics)**					
	ECTS	16	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate

Courses	Kondensierte Materie 1 (Quanten, Atome, Moleküle) (Condensed Matter 1 (Quanta, Atoms, Molecules)): V (4 weekly contact hours) + Ü (2 weekly contact hours), once a year (winter semester) Kondensierte Materie 2 (Festkörperphysik 1) (Condensed Matter 2 (Solid State Physics)): V (4 weekly contact hours) + Ü (2 weekly contact hours), once a year (summer semester)
Method of assessment	This module has the following assessment components 1. Topics covered in lectures and exercises in part 1 (Kondensierte Materie 1 (Condensed Matter 1)): written examination (approx. 120 minutes). 2. Topics covered in lectures and exercises in part 2 (Kondensierte Materie 2 (Condensed Matter 2)): written examination (approx. 120 minutes). 3. Topics covered in lectures and exercises in parts 1 and 2: oral examination of one candidate each (approx. 30 minutes, usually chosen) or written examination (approx. 120 minutes). Assessment component 3 will be offered in German; English if agreed upon with examiner(s). Successful completion of approx. 50% of practice work each is a prerequisite for admission to assessment components 1 and 2. To qualify for admission to assessment component 3, students must pass assessment component 1 and/or 2. Students are highly recommended to attend both courses Kondensierte Materie 1 (Condensed Matter 1) and Kondensierte Materie 2 (Condensed Matter 2). The topics discussed in these two courses will be covered in assessment component 3. Students must register for assessment components 1 through 3 online (details to be announced). To pass this module, students must first pass assessment component 1 or 2 and must then pass assessment component 3. The grade achieved in assessment component 1 or 2 (whichever is better) and the grade achieved in assessment component 3 will each count 50% towards the overall grade awarded for the module.

11-STE-092-m01	**Statistical Mechanics, Thermodynamics and Electrodynamics**						
	ECTS	16	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate

Courses	Statistische Mechanik und Thermodynamik (Statistical Mechanics and Thermodynamics): V (4 weekly contact hours) + Ü (2 weekly contact hours), once a year (winter semester) Theoretische Elektrodynamik (Theoretical Electrodynamics): V (4 weekly contact hours) + Ü (2 weekly contact hours), once a year (summer semester)
Method of assessment	This module has the following assessment components 1. Topics covered in lectures and exercises in part 1 (Statistische Mechanik und Thermodynamik (Statistical Mechanics and Thermodynamics)): written examination (approx. 120 minutes). 2. Topics covered in lectures and exercises in part 2 (Theoretische Elektrodynamik (Theoretical Electrodynamics)): written examination (approx. 120 minutes). 3. Topics covered in lectures and exercises in parts 1 and 2: oral examination of one candidate each (approx. 30 minutes, usually chosen) or written examination (approx. 120 minutes). Assessment component 3 will be offered in German; English if agreed upon with examiner(s). Successful completion of approx. 50% of practice work each is a prerequisite for admission to assessment components 1 and 2. Students are highly recommended to attend both courses Statistische Mechanik und Thermodynamik (Statistical Mechanics and Thermodynamics) and Theoretische Elektrodynamik (Theoretical Electrodynamics). The topics discussed in these two courses will be covered in assessment component 3. Students must register for assessment components 1 through 3 online (details to be announced). To pass this module, students must first pass assessment component 1 or 2 and must then pass assessment component 3. The grade achieved in assessment component 1 or 2 (whichever is better) and the grade achieved in assessment component 3 will each count 50% towards the overall grade awarded for the module.
other prerequisites	10-M1-PHY and 10-M2-PHY or 10-M1-NST and 10-M2-NST

11-TQM-092-m01	**Theoretical Mechanics and Quantum Mechanics**						
	ECTS	16	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		Theoretische Mechanik (Theoretical Mechanics): V (4 weekly contact hours) + Ü (2 weekly contact hours), once a year (winter semester) Quantenmechanik (Quantum Mechanics): V (4 weekly contact hours) + Ü (2 weekly contact hours), once a year (summer semester)				
	Method of assessment		This module has the following assessment components 1. Topics covered in lectures and exercises in part 1 (Theoretische Mechanik (Theoretical Mechanics)): written examination (approx. 120 minutes). 2. Topics covered in lectures and exercises in part 2 (Quantenmechanik (Quantum Mechanics)): written examination (approx. 120 minutes). 3. Topics covered in lectures and exercises in parts 1 and 2: oral examination of one candidate each (approx. 30 minutes, usually chosen) or written examination (approx. 120 minutes). Successful completion of approx. 50% of practice work each is a prerequisite for admission to assessment components 1 and 2. To qualify for admission to assessment component 3, students must pass assessment component 1 and/or 2. Students are highly recommended to attend both courses Theoretische Mechanik (Theoretical Mechanics) and Quantenmechanik (Quantum Mechanics). The topics discussed in these two courses will be covered in assessment component 3. Students must register for assessment components 1 through 3 online (details to be announced). To pass this module, students must first pass assessment component 1 or 2 and must then pass assessment component 3. The grade achieved in assessment component 1 or 2 (whichever is better) and the grade achieved in assessment component 3 will each count 50% towards the overall grade awarded for the module.				
	other prerequisites		10-M1-PHY, 10-M2-PHY and 11-MPI-3 or 10-M1-NST, 10-M2-NST and MPI-3				
11-ED-092-m01	**Theoretical Electrodynamics**						
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.				
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.				

11-FKP-092-m01	**Solid State Physics 1**					
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)			
	Method of assessment		written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.			
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.			
11-TM-092-m01	**Theoretical Mechanics**					
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)			
	Method of assessment		written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.			
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.			
11-QAM-092-m01	**Quanta, Atoms, Molecules**					
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		Ü + Ü (no information on SWS (weekly contact hours) and course language available)			
	Method of assessment		written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.			
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.			

11-QM-092-m01	**Quantum Mechanics**							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.					
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.					
11-ST-092-m01	**Statistical Mechanics and Thermodynamics**							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 120 minutes, for modules with less than 4 ECTS credits approx. 90 minutes; unless otherwise specified) Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.					
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.					
11-KET-122-m01	**Nuclear and Elementary Particle Physics**							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		written examination (approx. 120 minutes)					
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.					

Thesis (11 ECTS credits)

10-M-BAC-122-m01	Thesis Computational Mathematics (Bachelor Thesis)						
	ECTS	11	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses			no courses assigned			
	Method of assessment			written thesis Language of assessment: German, English if agreed upon with the examiner			

Subject-specific Key Skills (16 ECTS credits)

10-M-MCO-122-m01	Mathematics and Computer						
	ECTS	7	Duration	2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses			This module comprises 2 module components. Information on courses will be listed separately for each module component. • 10-M-COM-1-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-PRG-1-122: P (no information on SWS (weekly contact hours) and course language available)			
	Method of assessment			Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. **Assessment in module component 10-M-COM-1-122:** Computational Mathematics Computational Mathematics • 4 ECTS, Method of grading: (not) successfully completed • project in the form of programming exercises (type and expenditure of time to be specified by the lecturer at the beginning of the course) • Language of assessment: German, English if agreed upon with the examiner • Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. **Assessment in module component 10-M-PRG-1-122:** Programming course for students of Mathematics and other subjects • 3 ECTS, Method of grading: (not) successfully completed • project in the form of programming exercises (type and expenditure of time to be specified by the lecturer at the beginning of the course) • Language of assessment: German, English if agreed upon with the examiner • Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.			
	other prerequisites			By way of exception, additional prerequisites are listed in the section on assessments.			

10-M-MDA-122-m01	**Introduction into mathematical thinking and working**						
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate

Courses	This module comprises 2 module components. Information on courses will be listed separately for each module component. • 10-M-MDA-1-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-MDA-2-122: V + Ü (no information on SWS (weekly contact hours) and course language available)
Method of assessment	Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments. **Assessment in module component 10-M-MDA-1-122:** Basic Notions and Methods of Mathematical Reasoning Basic Notions and Methods of Mathematical Reasoning • 2 ECTS, Method of grading: (not) successfully completed • project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course) • Language of assessment: German, English if agreed upon with the examiner • Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. **Assessment in module component 10-M-MDA-2-122:** Reasoning and Writing in Mathematics Reasoning and Writing in Mathematics • 2 ECTS, Method of grading: (not) successfully completed • project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course) • Language of assessment: German, English if agreed upon with the examiner • Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.
other prerequisites	By way of exception, additional prerequisites are listed in the section on assessments.
Referred to in LPO I	§ 73 (1) 5. Mathematik Angewandte Mathematik

10-M-SEM-122-m01	**Seminar Mathematics**						
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate

Courses	S (no information on SWS (weekly contact hours) and course language available)
Method of assessment	talk (approx. 60 to 180 minutes) Language of assessment: German, English if agreed upon with the examiner
other prerequisites	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.