Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

Subdivided Module Catalogue

for the Subject

Biochemistry

as a Bachelor's with 1 major

with the degree "Bachelor of Science"

(180 ECTS credits)

Examination regulations version: 2022
Responsible: Faculty of Medicine
Responsible: Faculty of Chemistry and Pharmacy

Learning Outcomes

German contents and learning outcome available but not translated yet.

Wissenschaftliche Befähigung

- Die AbsolventInnen beherrschen die grundlegenden Kenntnisse der Basis-Wissenschaften, vor allem der Allgemeinen, Anorganischen, Organischen und Physikalischen Chemie, der Molekular- und Zellbiologie, sowie der Mathematik, Physik und Bioinformatik. Die Grundlagen hierfür werden in den entsprechenden Vorlesungen und Übungen der verschiedenen Fächer vermittelt und mittels Klausuren überprüft.
- Die AbsolventInnen haben darüber hinaus solide Kenntnisse und praktische Fertigkeiten in den experimentellen Techniken der Biochemie, Bioanalytik, Molekularbiologie und Strukturbiologie. Vermittelt werden diese Fähigkeiten im Rahmen von Laborpraktika während des Studiums. Die Überprüfung der Zielerreichung findet durch die Versuchsdurchführung und das Verfassen von Protokollen statt.
- Die AbsolventInnen können sich mit Hilfe von Fachliteratur in neue Fragestellungen und Aufgabengebiete einarbeiten, konkrete experimentelle oder theoretische Aufgabenstellungen verstehen, Lösungswege nachvollziehen und die Ergebnisse interpretieren und bewerten. Sie besitzen die Fähigkeit, eine thematisch und zeitlich eng umgrenzte biochemische Fragestellung unter Anleitung mit den erlernten Methoden und unter wissenschaftlich-analytischer Vorgehensweise weitgehend eigenständig zu bearbeiten, die gewonnenen Daten zu analysieren, zusammenzufassen und einem Fachpublikum zu präsentieren. Diese Fähigkeiten werden in Seminaren während des Studiums und vor allem im Rahmen der Vorbereitung und Anfertigung der Bachelorarbeit sowie des Kolloquiums zur Bachelor-Arbeit vermittelt und überprüft.

Befähigung zur Aufnahme einer Erwerbstätigkeit

- Die AbsolventInnen besitzen Abstraktionsvermögen, Problemlösungskompetenz und die Fähigkeit, komplexe Zusammenhänge in analytischer Herangehensweise zu strukturieren. Die Grundlagen hierfür werden in Vorlesungen und Übungen der Chemie, Mathematik, Physik, Biologie und der Lebenswissenschaften vermittelt und mittels Klausuren überprüft.
- Die AbsolventInnen sind auch in der Lage, ihr theoretisches Wissen in der Praxis anzuwenden und können mit den erlernten wissenschaftlichen Methoden auch unbekannte Probleme aus unterschiedlichen fachlichen Perspektiven analysieren und bearbeiten. Sie sind es dabei gewohnt, in einem Team aus KommilitonInnen, KollegInnen und/oder WissenschaftlerInnen konstruktiv und zielorientiert zusammenzuarbeiten. Der Praxisbezug ist durch einen hohen Anteil an Laborpraktika sowohl als Kurspraktika, individuelle Forschungspraktika und nicht zuletzt der Bachelor-Arbeit gegeben, deren erfolgreiche Absolvierung durch Protokolle bzw. die Bachelor-Thesis überprüft wird.
- Die interdisziplinäre Ausrichtung des Studiengangs zwischen den Fachbereichen Chemie und Medizin, sowie der Import verschiedener Module aus der Mathematik, Physik und Biologie, fördert von Beginn an fachübergreifendes Lernen, Denken und Verstehen. Diese solide naturwissenschaftliche Wissensbasis und Methodenkompetenz sowie die eingeübte Teamfähigkeit können die AbsolventInnen gewinnbringend in ihrer Berufspraxis einsetzen.

Persönlichkeitsentwicklung

- Die Absolventinnen und Absolventen kennen die Regeln guter wissenschaftlicher Praxis und beachten sie. Die Lehrenden fördern zudem die Selbstverantwortung für den Wissenserwerb sowie ein an wissenschaftlichen Werten orientiertes Denken und Handeln. Dies beinhaltet das Streben nach Erkenntnis und Wahrheit, Eindeutigkeit, Transparenz, Objektivität, Wertefreiheit, überpersönliche Gültigkeit, Überprüfbarkeit, Verlässlichkeit, Offenheit, Selbstreflexion und Redlichkeit sowie Neuigkeit. Insbesondere die Laborarbeit und das Erstellen von Protokollen sowie deren anschließende Korrektur stellt die Vermittlung guter wissenschaftlicher Praxis sicher.

Befähigung zum gesellschaftlichen Engagement

- Die Absolventinnen haben ihr Wissen bezüglich naturwissenschaftlicher Fragestellungen erweitert und erkennen deren wirtschaftliche, rechtliche und gesellschaftliche Implikationen und können begründet Position beziehen. Durch die Behandlung aktueller Forschungsthemen in den Lehrveranstaltungen und die Absolvierung von Vorlesungen zu Gentechnik und biologischer Sicherheit sowie Toxikologie und Gefahrstoffkunde werden Bezüge zu wirtschaftlichen, rechtlichen und gesellschaftlichen Fragestellungen hergestellt. Im Rahmen der Bachelorarbeit befassen sich die Studierenden ebenfalls mit aktuellen medizinisch, gesellschaftlich und wirtschaftlich relevanten biochemischen Fragestellungen, deren Kenntnisse sowie die Fähigkeit begründet Position zu beziehen im Kolloquium überprüft werden.

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

Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.

Notes

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 the 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:

ASPO2015

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

22-Mar-2022 (2022-13)

??-???-2024 (2024-??)

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.

The subject is divided into

Abbreviation	Module title	ECTS credits	Method of grading	page
Compulsory Courses (115 ECTS credits)				
03-5S2ST-BC-152-m01	Structural Biology	10	NUM	11
07-1A1ZO-BC-152-m01	General Biology for Biochemistry Students	5	NUM	25
08-AC1-152-m01	Principles of Inorganic Chemistry	8	NUM	32
08-ACP1-BC-152-m01	Inorganic Chemistry 1 (lab) for Biochemistry students	6	B/NB	36
08-OC1-152-m01	Organic Chemistry 1	5	NUM	86
08-OC2-152-m01	Organic Chemistry 2 and analytical methods in organic chemistry	9	NUM	91
08-OCP1-BC-152-m01	Organic chemistry - laboratory course for Biochemistry students	7	B/NB	95
08-PC-MBS-152-m01	Molecular structure and spectroscopy	5	NUM	97
08-PC-TKE-152-m01	Thermodynamics, Kinetics, Electrochemistry	9	NUM	106
08-PCP-BC-152-m01	Practical course of Physical Chemistry for Biochemistry Students	6	B/NB	104
08-BAN-222-m01	Bioanalytics	7	NUM	50
08-BC1-152-m01	Biochemistry 1	5	NUM	51
08-BC2-152-m01	Biochemistry 2	5	NUM	53
08-BCP-152-m01	Practical course of Biochemistry	5	B/NB	62
08-BC-MOL-222-m01	Molecular Biology	5	NUM	59
08-BC-ELW-222-m01	Ethics and Legal Regulations of Molecular Life Sciences	3	NUM	56
10-M-MCH-172-m01	Mathematics for students in Chemistry and Biochemistry	5	NUM	112
11-EFNF-152-m01	Introduction to Physics for Students of other Disciplines	7	NUM	113
11-PFNF-152-m01	Laboratory Course Physics for Students of other Disciplines	3	B/NB	119
Compulsory Electives (30 ECTS credits)				
03-4S1IMM-BC-152-m01	Immunology for biochemistry students	5	NUM	8
03-4S1VIR-BC-152-m01	Virology for biochemistry students	5	NUM	9
03-VIR2-BC-171-m01	Virology 2 for Biochemistry Students	5	NUM	18
08-BGV-202-m01	Imaging methods in life-sciences	5	NUM	68
03-4S1HUG-BC-152-m01	Human genetics for biochemistry students	5	NUM	7
03-PBC-152-m01	Pathobiochemistry	5	NUM	14
08-BC-MOLP-172-m01	Molecular Biology laboratory course	10	NUM	60
03-ZBP-152-m01	Cell biology	5	NUM	19
07-5S2MiZ2-BC-152-m01	Specific Microbiology 2 for Students in Biochemistry	10	NUM	29
08-OC4-152-m01	Organic Chemistry 4	5	NUM	93
08-OCP2-152-m01	Organic Chemistry - advanced laboratory course for students of chemistry	5	B/NB	96
07-4BFMZ4-BC-152-m01	Bioinformatics for advanced Students in Biochemistry	5	NUM	28
03-98-PGN-202-m01	Introduction to Neurobiology	5	NUM	12
08-BC-AMP-152-m01	Current Methods of Protein Chromatography	5	NUM	55
08-AVP5-BC-152-m01	Advanced lab (abridged)	5	NUM	47
08-AVP10-BC-152-m01	Advanced lab	10	NUM	46

08-BC-SFBM-212-m01	Structure and Function of Biological Membranes and Membrane Proteins	10	NUM	64
Transferable Skills (20 ECTS credits)				
General Key Skills (5 ECTS credits) Students may select any of the modules offered as part of the pool of general transferable skills (ASQ) of JMU.				
Subject-specific Key Skills (15 ECTS credits)				
07-M-BST-152-m01	Mathematical Biology and Biostatistics	4	NUM	30
41-IK-BM-152-m01	Information Literacy (Basic Level)	2	B/NB	125
06-Ph-B-P2/1-152-m01	Philosophical principles of sciences I	5	B/NB	20
07-3A3BI-152-m01	Bioinformatics	2	NUM	27
03-TR-152-m01	Toxicology and legal studies	3	NUM	16
03-FOR-BC-152-m01	Contemporary research in biochemistry	2	B/NB	13
03-Phys-152-m01	Physiology	3	NUM	15
08-EP-152-m01	Practical Course - external	10	B/NB	73
08-EPK-152-m01	Practical Course - external (abridged)	5	B/NB	74
08-AP-152-m01	Practical Course - abroad	10	B/NB	42
08-APK-152-m01	Practical Course - abroad (abridged)	5	B/NB	43
08-LP-152-m01	Practical Lab Course	10	B/NB	84
08-LPK-152-m01	Practical Lab Course (abridged)	5	B/NB	85
08-WIRE1-152-m01	Scientific lecturing 1	5	B/NB	110
08-WIRE2-152-m01	Scientific lecturing 2	5	B/NB	111
08-AFBC1-152-m01	Contemporary Research in Biochemistry 1	3	NUM	38
08-AFBC2-152-m01	Contemporary Research in Biochemistry 2	3	NUM	39
08-AFBC3-152-m01	Contemporary Research in Biochemistry 3	3	NUM	40
08-BPS1-152-m01	Biochemical Practical Seminar 1	1	B/NB	70
08-BPS2-152-m01	Biochemical Practical Seminar 2	1	B/NB	71
08-BPS3-152-m01	Biochemical Practical Seminar 3	1	B/NB	72
08-AWA-152-m01	Guidance in scientific practice	5	B/NB	48
08-AC-ELO-152-m01	Elemental Organic Chemistry	5	NUM	34
08-ACP2-172-m01	Inorganic Chemistry 2 (lab)	5	B/NB	37
08-PC-SBL-152-m01	Symmetry, chemical bonding and light	9	NUM	105
08-AS1-152-m01	Inorganic Chemistry of the Elements	6	NUM	44
08-ANP-152-m01	Analytical Chemistry (lab)	6	B/NB	41
08-OC4-152-m01	Organic Chemistry 4	5	NUM	93
08-TC-152-m01	Quantum Chemistry	3	NUM	108
08-GC-242-m01	Green and sustainable (organic) chemistry	5	NUM	75
08-BC-PHIL-212-m01	Philosophical Aspects of the Sciences	3	NUM	63
08-BC-ZQN3-152-m01	Additional Qualification in Natural Sciences 3	3	B/NB	66
08-BC-ZQN5-152-m01	Additional Qualification in Natural Sciences 5	5	B/NB	67
08-BC-EQN3-152-m01	Completive Qualification in Natural Sciences 3	3	NUM	57
08-BC-EQN5-152-m01	Completive Qualification in Natural Sciences 5	5	NUM	58
Thesis Area (15 ECTS credits)				
08-BA-BC-152-m01	Bachelor Thesis in Biochemistry	12	NUM	49
08-KOLL-BC-152-m01	Defense of the Bachelor Thesis in Biochemistry	3	NUM	83

Module title			Abbreviation
Human genetics for biochemistry students			03-4S1HUG-BC-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of of Human Genetics		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Fundamentals of and analytical methods in human and vertebrate cytogenetics. Characterisation of the normal human karyotype and chromosome aberrations. Introduction to chromosome evolution.

Intended learning outcomes

Students who complete this module will acquire the theoretical basis of and practical experience in human cytogenetics. They will learn how to prepare and identify human chromosomes and critically interpret cytogenetic findings.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + Ü (1.5) + S (0.5)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 30 minutes)

Allocation of places

Biochemie (Biochemistry), Bachelor's: 5 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third 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. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Immunology for biochemistry students			03-4S1IMM-BC-152-m01
Module coordinator		**Module offered by**	
holder of the Professorship of Immunogenetics		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module gives an introduction to immunology. The following questions will be addressed: How does the body recognise and eliminate pathogens and tumour cells? How can the immune system damage its own body (allergies, autoimmunity)? Organs, cells and molecules of the immune system will be presented with an emphasis on genetic and molecular mechanisms of recognition and elimination of foreign substances by the immune system. The most important immunological techniques will be introduced and applied.

Intended learning outcomes

The students acquire a practical knowledge of cellular and molecular techniques for the analysis of the immune system. The are familiar with the mechanisms of self and non-self discrimination by the adaptive and innate immune systems. They acquire a fundamental knowledge of lymphocyte development as well as major immune effector cell functions and molecules.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + Ü (1) + P (3)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 45 minutes)
Assessment offered: Once a year, summer semester

Allocation of places

Biochemie (Biochemistry), Bachelor's: 16 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third 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. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Virology for biochemistry students			03-4S1VIR-BC-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Virology		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Introduction to virology; the infectious cycle; virus structure and assembly; adsorption and entry; genomes and genetics; RNA-viruses: mRNA-synthesis and RNA-genome replication; retroviruses: reverse transcription and integration; DNA-viruses: transcription and genome replication. Foundations of cell biology. Introduction to the scientific method and scientific approach; principles of antiviral therapy and vaccination; introduction to clinical virology; HIV and AIDS. Safe work in a BSL-2 laboratory; cell culture; virus production, titre test; virus sequencing, phylogenetic analysis of viral quasispecies.

Intended learning outcomes

Fundamental knowledge of molecular virology, the structure and replication of viruses and virus-host interactions; principles of antiviral vaccines and chemotherapeutics; principal techniques in cell and molecular biology for virological research.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + S (1) + P (3)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German and/or English
Assessment offered: Once a year, summer semester

Allocation of places

Biochemie (Biochemistry), Bachelor's: 18 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third 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. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in
Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Structural Biology			03-5S2ST-BC-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Structural Biology		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module provides a brief introduction to crystallography and commonly used biophysical techniques as well as the fundamental principles of macromolecular architectures. Building on this, the structure and function of selected biological macromolecules are presented. In small groups, participants will analyse one specific macromolecule in silico with respect to its structure and biological function and will present their results in a talk. The various macromolecules in their entirety reflect a number of important biological problems.

Intended learning outcomes

On the basis of individually assigned model proteins, the students will acquire the ability to explore common problems in structural biology and to analyse structure-function relationships. They will also acquire skills in the oral presentation of scientific results as well as in the in silico analysis of biological macromolecules.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (6)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Introduction to Neurobiology			03-98-PGN-202-m01
Module coordinator		**Module offered by**	
holder of the Chair of Clinical Neurobiology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Students participating in this module will receive fundamental knowledge in neurobiology. This includes topics such as synaptic plasticity, ion channels, RNA biology in neuroscience, neural stem cells, various diseases of the nervous system: symptoms, diagnosis, therapeutic options. Methodological competence with regard to experimental approaches will be discussed and strengthened in accompanied seminars and practical lessons. Presentations of current research topics related to lecture topics further strengthens the acquired knowledge of neurobiological topics.

Intended learning outcomes

Students who successfully completed this module are able to remember a fundamental knowledge about the structure and function of the nervous system. Using oral presentations, students have received the competence to critical reflect current research topics and to classify data of current publications into the right context.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (3)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (90 minutes) and successful completion of seminar/exercise

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biomedicine (2020)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Contemporary research in biochemistry			03-FOR-BC-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
2	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
2 semester	undergraduate	--	

Contents

Presentation of current research results in the Biocentre colloquium and discussion of recent literature.

Intended learning outcomes

Students are introduced to the topics of current research in the life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Wrap-up report (approx. 1 page)

Allocation of places

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Additional information

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Workload

60 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Pathobiochemistry			03-PBC-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Clinical Biochemistry and Pathobiochemistry		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Fundamentals of selected topics in pathobiochemistry and pathophysiology.

Intended learning outcomes

Students are familiar with the fundamentals of pathobiochemistry and pathophysiology.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + Ü (1) + P (3)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German and/or English
Assessment offered: Once a year, summer semester

Allocation of places

Biochemie (Biochemistry), Bachelor's: 6 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third 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. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Physiology			03-Phys-152-m01
Module coordinator		**Module offered by**	
Managing Director of the Institute of Physiology		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Neurophysiology, cardiac/circulatory function, kidney, blood, respiration, acid/base homeostasis, endocrinology, nutrition and digestion, liver function.

Intended learning outcomes

Students are familiar with the fundamental principles of human physiology.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 minutes)

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Toxicology and legal studies			03-TR-152-m01
Module coordinator		**Module offered by**	
lecturer of lecture "Toxikologie und Rechtskunde"		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Basics of legal regulations for chemists (handling and transportation of hazardous materials), fundamentals of toxicology.

Intended learning outcomes

The students master the basics of legal regulations for chemists (handling and transport of hazardous substances) as well as the fundamentals of toxicology.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + V (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 90 minutes)

Allocation of places

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Additional information

according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. II 2nd letter g) and i) and No. II 1st letter d) of annex 1 to the APOLmCh and No. 5 and 6 of annex 3 to the APOLmCh

Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 22 II Nr. 1 h)
§ 22 II Nr. 2 f)
§ 22 II Nr. 3 f)

Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Food Chemistry (2015)
First state examination for the teaching degree Grundschule Chemistry (2015)
First state examination for the teaching degree Grundschule Didactics in Chemistry (Primary School) (2015)
First state examination for the teaching degree Realschule Chemistry (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2015)
First state examination for the teaching degree Mittelschule Chemistry (2015)
First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2015)
Master's degree (1 major) Chemistry (2016)
Bachelor's degree (1 major) Food Chemistry (2016)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)

Master's degree (1 major) Chemistry (2018)
Bachelor's degree (1 major) Food Chemistry (2019)
First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2020 (Prüfungsordnungsversion 2015))
Bachelor's degree (1 major) Food Chemistry (2021)
Bachelor's degree (1 major) Biochemistry (2022)
Master's degree (1 major) Chemistry (2024)
Bachelor's degree (1 major) Food Chemistry (2025)

Module title			Abbreviation
Virology 2 for Biochemistry Students			03-VIR2-BC-171-m01
Module coordinator		**Module offered by**	
holder of the Chair of Virology		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

In the lecture the basic knowledge of virology is deepened by means of different virus groups. Simple molecular mechanisms of virus replication will be discussed on the basis of different viruses. The focus is on the understanding of the molecular host-virus interactions. The lecture should lead from clinical virology to molecular virology. In the practical part basic viral techniques such as virus purification, expression of recombinant viruses and determination of viral cell tropisms will be learned and applied in small groups. This course is based on the knowledge of Virology 1 for Bachelor.

Intended learning outcomes

The students will understand the molecular basis of viral replication and virus-host interaction and will be able to apply basic virological techniques independently.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + P (3)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German and/or English
Assessment offered: Once a year, winter semester

Allocation of places

Biochemie (Biochemistry) Bachelor's: 255 places.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Cell biology			03-ZBP-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Medical Radiation and Cell Research		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Becoming familiar with basic cell biological principles via hands-on training and seminars. Major topics are the structural organisation of eukaryotic cells, cell-cell and cell-matrix interactions, proliferation, differentiation and apoptosis.

Intended learning outcomes

Problem-oriented handling of eukaryotic cells under sterile conditions and understanding of principles of techniques for the analysis of cells. Understanding the molecular basis of cell biology and cellular malfunctions and their significance for disease development. Independent extraction of relevant information and presentation of selected examples of current literature.

Courses (type, number of weekly contact hours, language — if other than German)

P (4) + S (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 minutes)
Language of assessment: German and/or English

Allocation of places

Biochemie (Biochemistry), Bachelor's: 12 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third 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. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Philosophical principles of sciences I			06-Ph-B-P2/1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Theoretical Philosophy		Institute of Philosophy	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Introduction to the theory of intellectual disciplines and to the historical and philosophical bases of the individual intellectual disciplines.

Intended learning outcomes

Insight into the relationship of philosophy to individual intellectual disciplines; ability to reflect on the historical and intellectual origins of our knowledge culture; insight into the scope and limits of various intellectual disciplines; familiarity with, and ability to criticize, basic assumptions of visions of the world and systems of thought.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (45 minutes)

Allocation of places

Only as part of pool of general transferable skills (ASQ): max. 20 places. Should the number of applications exceed the number of available places, places will be allocated according to the number of subject semesters. Among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

150 h

Teaching cycle

Teaching cycle: Once a year, winter semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biology (2011)
Bachelor's degree (1 major) Chemistry (2010)
Bachelor's degree (1 major) Psychology (2010)
Bachelor's degree (1 major, 1 minor) Pedagogy (2013)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2013)
Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2008)
Bachelor's degree (2 majors) Special Education (2009)
Magister Theologiae Catholic Theology (2013)
Bachelor's degree (2 majors) English and American Studies (2009)
Bachelor's degree (2 majors) German Language and Literature (2013)
Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Geography (2015)

Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Musicology (2015)
Bachelor's degree (1 major) Physics (2015)
Bachelor's degree (1 major) Psychology (2015)
Bachelor's degree (1 major) Business Management and Economics (2015)
Bachelor's degree (1 major) Nanostructure Technology (2015)
Bachelor's degree (1 major) Music Education (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major) Political and Social Studies (2015)
Bachelor's degree (1 major) Functional Materials (2015)
Bachelor's degree (1 major) Academic Speech Therapy (2015)
Bachelor's degree (1 major) Indology/South Asian Studies (2015)
Bachelor's degree (1 major, 1 minor) Egyptology (2015)
Bachelor's degree (1 major, 1 minor) Pedagogy (2015)
Bachelor's degree (1 major, 1 minor) History (2015)
Bachelor's degree (1 major, 1 minor) Musicology (2015)
Bachelor's degree (1 major, 1 minor) Philosophy (Minor, 2015)
Bachelor's degree (1 major, 1 minor) Philosophy (2015)
Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015)
Bachelor's degree (1 major, 1 minor) Ancient World (2015)
Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015)
Bachelor's degree (1 major, 1 minor) Theological Studies (2015)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015)
Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015)
Bachelor's degree (1 major, 1 minor) German Language and Literature (2015)
Bachelor's degree (2 majors) Egyptology (2015)
Bachelor's degree (2 majors) Pedagogy (2015)
Bachelor's degree (2 majors) Protestant Theology (2015)
Bachelor's degree (2 majors) Musicology (2015)
Bachelor's degree (2 majors) Philosophy (2015)
Bachelor's degree (2 majors) Special Education (2015)
Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015)
Bachelor's degree (2 majors) Latin Philology (2015)
Bachelor's degree (2 majors) Music Education (2015)
Bachelor's degree (2 majors) Philosophy and Religion (2015)
Bachelor's degree (2 majors) Theological Studies (2015)
Bachelor's degree (2 majors) Political and Social Studies (2015)
Bachelor's degree (2 majors) Russian Language and Culture (2015)
Bachelor's degree (2 majors) Greek Philology (2015)
Bachelor's degree (2 majors) European Ethnology (2015)
Bachelor's degree (2 majors) Indology/South Asian Studies (2015)
Bachelor's degree (2 majors) Geography (2015)
Bachelor's degree (2 majors) French Studies (2015)
Bachelor's degree (2 majors) History (2015)
Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015)
Bachelor's degree (2 majors) German Language and Literature (2015)
Master's degree (2 majors) European Ethnology (2016)
Bachelor's degree (1 major) Mathematical Physics (2016)
Master's degree (1 major) European Ethnology (2016)
Bachelor's degree (1 major, 1 minor) French Studies (2016)
Bachelor's degree (2 majors) French Studies (2016)
Bachelor's degree (1 major, 1 minor) Italian Studies (2016)
Bachelor's degree (2 majors) Italian Studies (2016)

Bachelor's degree (1 major, 1 minor) Spanish Studies (2016)
Bachelor's degree (2 majors) Spanish Studies (2016)
Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016)
Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016)
Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016)
Bachelor's degree (1 major) Business Information Systems (2016)
Bachelor's degree (1 major) Games Engineering (2016)
Bachelor's degree (1 major, 1 minor) English and American Studies (2016)
Bachelor's degree (2 majors) English and American Studies (2016)
Bachelor's degree (1 major) Media Communication (2016)
Bachelor's degree (1 major) Food Chemistry (2016)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2016)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major, 1 minor) Geography (2017)
Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017)
Bachelor's degree (2 majors) History of Medieval and Modern Art (2017)
Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017)
Bachelor's degree (1 major) Aerospace Computer Science (2017)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2017)
Bachelor's degree (1 major) Economathematics (2017)
Bachelor's degree (1 major) Games Engineering (2017)
Bachelor's degree (1 major) Computer Science (2017)
Bachelor's degree (1 major) Media Communication (2018)
Bachelor's degree (1 major) Biomedicine (2018)
Bachelor's degree (1 major) Human-Computer Systems (2018)
Bachelor's degree (2 majors) Classical Archaeology (2018)
Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2018)
Bachelor's degree (2 majors) Digital Humanities (2018)
Bachelor's degree (1 major) Computer Science (2019)
Bachelor's degree (1 major, 1 minor) English and American Studies (2019)
Bachelor's degree (1 major) Indology/South Asian Studies (2019)
Bachelor's degree (1 major) Business Information Systems (2019)
Bachelor's degree (2 majors) Indology/South Asian Studies (2019)
Bachelor's degree (1 major) Business Management and Economics (2019)
Bachelor's degree (1 major) Modern China (2019)
Bachelor's degree (1 major) Biomedicine (2020)
Bachelor's degree (1 major) Pedagogy (2020)
Bachelor's degree (1 major) Political and Social Studies (2020)
Bachelor's degree (1 major) Business Information Systems (2020)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020)
Bachelor's degree (2 majors) European Ethnology (2020)
Bachelor's degree (2 majors) Political and Social Studies (2020)
Bachelor's degree (2 majors) Special Education (2020)
Bachelor's degree (1 major) Physics (2020)
Bachelor's degree (1 major) Nanostructure Technology (2020)
Bachelor's degree (1 major) Mathematical Physics (2020)
Bachelor's degree (1 major) Aerospace Computer Science (2020)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2020)
Bachelor's degree (1 major, 1 minor) Pedagogy (2020)
Bachelor's degree (2 majors) Pedagogy (2020)

Bachelor's degree (1 major) Psychology (2020)
Bachelor's degree (1 major) Biology (2021)
Magister Theologiae Catholic Theology (2021)
Bachelor's degree (2 majors) History (2021)
Bachelor's degree (1 major, 1 minor) History (2021)
Bachelor's degree (1 major) Media Communication (2021)
Bachelor's degree (2 majors) Theological Studies (2021)
Bachelor's degree (1 major, 1 minor) Theological Studies (2021)
Bachelor's degree (1 major, 1 minor) English and American Studies (2021)
Bachelor's degree (2 majors) English and American Studies (2021)
Bachelor's degree (1 major) Functional Materials (2021)
Bachelor's degree (1 major) Computer Science und Sustainability (2021)
Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021)
Bachelor's degree (1 major) Food Chemistry (2021)
Bachelor's degree (1 major) Quantum Technology (2021)
Bachelor's degree (2 majors) Special Education (2021)
Bachelor's degree (1 major) Business Information Systems (2021)
Bachelor's degree (1 major) Economathematics (2021)
Bachelor's degree (1 major) Business Management and Economics (2021)
Bachelor's degree (1 major) Human-Computer Systems (2022)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2022)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Biology (2022)
Bachelor's degree (1 major) Economathematics (2022)
Bachelor's degree (1 major) Mathematical Data Science (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)
Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022)
Bachelor's degree (1 major, 1 minor) Ancient World (2022)
Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022)
Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022)
Bachelor's degree (1 major) European Law (2023)
Bachelor's degree (1 major, 1 minor) English and American Studies (2023)
Bachelor's degree (2 majors) English and American Studies (2023)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Business Information Systems (2023)
Bachelor's degree (1 major) Economathematics (2023)
Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023)
Bachelor's degree (2 majors) History of Medieval and Modern Art (2023)
Bachelor's degree (2 majors) Special Education (2023)
Bachelor's degree (1 major) Business Management and Economics (2023)
Bachelor's degree (1 major) Geography (2023)
Bachelor's degree (2 majors) Geography (2023)
Bachelor's degree (1 major, 1 minor) Geography (2023)
Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023)
Bachelor's degree (1 major) Mathematical Physics (2024)
Bachelor's degree (2 majors) German Language and Literature (2024)
Bachelor's degree (1 major, 1 minor) German Language and Literature (2024)
Bachelor's degree (1 major) Music Education (2024)
Bachelor's degree (2 majors) Music Education (2024)
Bachelor's degree (1 major, 1 minor) Music Education (2024)
Bachelor's degree (1 major) Indology/South Asian Studies (2024)
Bachelor's degree (2 majors) Indology/South Asian Studies (2024)

Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024)
Bachelor's degree (1 major, 1 minor) Ancient World (2024)
Bachelor's degree (2 majors) Digital Humanities (2024)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2024)
Bachelor's degree (1 major) Midwifery (2024)
Bachelor's degree (2 majors) Greek Philology (2024)
Bachelor's degree (2 majors) Latin Philology (2024)
Bachelor's degree (1 major) Business Information Systems (2024)
Bachelor's degree (1 major) Economathematics (2024)
Bachelor's degree (1 major) Business Management and Economics (2024)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)
Bachelor's degree (1 major) Human-Computer-Interaction (2024)
Bachelor's degree (2 majors) Art Education (2024)
Bachelor's degree (1 major) Digital Business & Data Science (2024)
Bachelor's degree (1 major) Classics (2024)
Bachelor's degree (1 major) Diversity, Ethics and Religions (2024)
Bachelor's degree (1 major) Functional Materials (2025)
Bachelor's degree (1 major) (2025)
Bachelor's degree (1 major) Food Chemistry (2025)
Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025)
Bachelor's degree (1 major) Pedagogy (2025)
Bachelor's degree (2 majors) Pedagogy (2025)
Bachelor's degree (1 major) Economathematics (2025)
Bachelor's degree (1 major) Academic Speech Therapy (2025)
Bachelor's degree (1 major, 1 minor) Pedagogy (2025)
Bachelor's degree (1 major) Games Engineering (2025)

Module title			Abbreviation
General Biology for Biochemistry Students			07-1A1ZO-BC-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The first part of the course will acquaint students with the elementary building blocks of life as well as biological categories. Building on this knowledge, the course will then discuss the cell, the smallest unit of life, starting with its macroscopic structure before moving on to its microscopic structure. The course will point out differences and similarities between prokaryotic cells (bacteria, archaebacteria) and eukaryotic cells (animals, plants). The second part will address one of the central issues of biology: evolution. Fundamental mechanisms and hypotheses will be discussed and students will be introduced to major phylogenetic reconstruction methods. Using the examples of plants and animals, the subsequent module components will introduce students to the phylogenetic diversity of eukaryotes. At the level of groups in the plant and animal kingdoms, students will acquire the fundamental knowledge necessary to understand the forms and functions of animal and plant organisms, with morphology and cytology being discussed in an evolutionary and ecological context. The contents of the module are relevant for biological disciplines at all levels of biological organisation. Students will also acquire and practise some of the fundamental preparation skills bioscientists are often required to possess.

Intended learning outcomes

Knowledge of the structures of prokaryotic and eukaryotic cells and their (biological) macromolecules. Knowledge of the specific characteristics of the intracellular and extracellular structures of prokaryotes as well as animal and plant cells. Ability to recognise evolution as the driving force behind the phylogeny of species. Familiarity with the concepts of phylogenetic relationships between plants/animals. Familiarity with the distinguishing characteristics and major representatives of groups in the plant and animal kingdoms. Ability to select those plant and animal organisms that are most suitable for particular scientific issues. Familiarity with the components and functioning of microscopes. Fundamental skills in the interpretation of macroscopic and histologic preparations by light microscopy. Fundamental preparation skills.

Courses (type, number of weekly contact hours, language — if other than German)

V (5)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 180 minutes)

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)

Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Bioinformatics			07-3A3BI-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Bioinformatics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
2	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Fundamental principles of bioinformatics.

Intended learning outcomes

Students are proficient in methods for the analysis of DNA and protein databases.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + S (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 20 minutes)

Allocation of places

--

Additional information

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Workload

60 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Bioinformatics for advanced Students in Biochemistry			07-4BFMZ4-BC-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Pharmaceutical Biology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module will provide students with a theoretical and methodological introduction to fundamental techniques in molecular biology and drug analysis.

Intended learning outcomes

Students are able to analyse groups of drugs, using a variety of methods.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + Ü (4)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Log (10 to 20 pages)
Language of assessment: German and/or English

Allocation of places

Biochemie (Biochemistry), Bachelor's: 4 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third 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. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

150 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Specific Microbiology 2 for Students in Biochemistry			07-5S2MiZ2-BC-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Microbiology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

In this module, students will acquire an in-depth insight into approaches and methods in microbiology.

Intended learning outcomes

Students have acquired knowledge about general strategies and methods of microbiology. They are able to independently perform scientific laboratory work.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + S (1) + Ü (3)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)

Allocation of places

Biochemie (Biochemistry), Bachelor's: 6 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third 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. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

300 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Mathematical Biology and Biostatistics			07-M-BST-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Bioinformatics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
4	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Fundamental principles of the most important mathematical and statistical methods in biology.

Intended learning outcomes

Students will have acquired fundamental skills in the evaluation of experiments, the interpretation of readings and numbers as well as the mathematical description of biological processes.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 minutes)
creditable for bonus

Allocation of places

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Additional information

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Workload

120 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biology (2015)
Bachelor's degree (1 major) Computer Science (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Computer Science (2017)
Bachelor's degree (1 major) Computer Science (2019)
Bachelor's degree (1 major) Biology (2021)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021)
Bachelor's degree (1 major) Computer Science und Sustainability (2021)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Biology (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Module title	Abbreviation
Principles of Inorganic Chemistry	08-AC1-152-m01

Module coordinator	Module offered by
lecturer of lecture "Experimentalchemie" (Experimental Chemistry)	Institute of Inorganic Chemistry

ECTS	Method of grading	Only after succ. compl. of module(s)
8	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	undergraduate	--

Contents

The module provides an overview of the fundamental knowledge of chemistry. Emphasis is placed on the material and particle level, metals, acid-base reactions, the periodic table, chemical equilibrium and complexometry. In addition, the module introduces fundamental concepts of chemistry and teaches the basics of inorganic chemistry.

Intended learning outcomes

The student understands the principles of the periodic table and can obtain information from it. He/she is proficient in basic models of the structure of matter and can describe them properly. He/she can depict chemical reactions using typical chemical formula language and interpret them by identifying the type of reaction. The students know how the most important quantitative and qualitative analytical methods work and their areas of application.

Courses (type, number of weekly contact hours, language — if other than German)

V (4) + V (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 90 to 180 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or
d) log (approx. 20 pages) or
e) presentation (approx. 30 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter a) of annex 1 to the APOLmCh and No. 1 of annex 2 to the APOLmCh

Workload

240 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 42 I Nr. 1 and § 22 II Nr. 1 h)
§ 62 I Nr. 1

Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
First state examination for the teaching degree Grundschule Chemistry (2015)
First state examination for the teaching degree Grundschule Didactics in Chemistry (Primary School) (2015)
First state examination for the teaching degree Realschule Chemistry (2015)

First state examination for the teaching degree Gymnasium Chemistry (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2015)
First state examination for the teaching degree Mittelschule Chemistry (2015)
First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2020 (Prüfungsordnungsversion 2015))
Bachelor's degree (1 major) Food Chemistry (2021)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Food Chemistry (2025)

Module title			Abbreviation
Elemental Organic Chemistry			08-AC-ELO-152-m01
Module coordinator		**Module offered by**	
lecturer of lecture "Elementorganische Chemie" (Elemental Organic Chemistry)		Institute of Inorganic Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module equips students with an advanced knowledge of organometallics. It focuses on their structures and properties, special material classes, reactivity and technical processes.

Intended learning outcomes

Students are able to describe the structure and properties of organometallics in an appropriate manner. They are able to systemise them and characterise their structure and reactivity. In addition, they are able to develop and explain principles for the synthesis of elementary organic compounds.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 90 to 180 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or
d) log (approx. 20 pages) or
e) presentation (approx. 30 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 22 II Nr. 1 h)
§ 22 II Nr. 2 f)
§ 22 II Nr. 3 f)

Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
First state examination for the teaching degree Grundschule Chemistry (2015)
First state examination for the teaching degree Realschule Chemistry (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
First state examination for the teaching degree Mittelschule Chemistry (2015)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)
Bachelor's degree (1 major) Biochemistry (2017)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)

First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015))
Bachelor's degree (1 major) Biochemistry (2022)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Module title			Abbreviation
Inorganic Chemistry 1 (lab) for Biochemistry students			08-ACP1-BC-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Anorganic Chemistry		Institute of Inorganic Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
6	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module gives students the opportunity to apply in practice the knowledge they have gained through the related lecture(s). After a safety briefing, the students autonomously conduct experiments in the laboratory. The course focuses on laboratory safety, simple lab techniques, the synthesis of simple substances and analyses of unknown substances.

Intended learning outcomes

Students are able to identify fundamental problems in chemistry and perform experiments to solve them. They have developed the ability to perform the necessary stoichiometric calculations and describe the chemical processes in an appropriate manner, both in written and oral form.

Courses (type, number of weekly contact hours, language — if other than German)

P (6) + S (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

[a) assessment [a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes)] as well as Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical assignments (2 to 4 random examinations)
Language of assessment: German and/or English
Assessment offered: Once a year, winter semester

Allocation of places

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Additional information

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Workload

180 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Inorganic Chemistry 2 (lab)			08-ACP2-172-m01
Module coordinator		**Module offered by**	
holder of the Chair of Anorganic Chemistry		Institute of Inorganic Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	(08-OCP1 or 08-OCP1-BC) and 08-AS1	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The module provides the opportunity to plan and carry out complex syntheses after an individual research. Focuses are the handling of organometallic compounds, their synthesis and the work in inert atmospheres. Spectroscopical methods are used for the precise determination of the products.

Intended learning outcomes

The student is able to experimentally solve complex issues after an individual research. He/She can describe the technical backrounds an explain them written and verbal using technical language. He/She can independently plan and carry out the synthesis of a chemical compound. Therefor he/she can apply advanced laboratory techniques.

Courses (type, number of weekly contact hours, language — if other than German)

P (12)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Contemporary Research in Biochemistry 1			08-AFBC1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
2 semester	undergraduate	--	

Contents

A series of lectures discussing recent findings from local, national or international research. The lectures will describe the research methods used and will discuss the findings in the context of recent literature.

Intended learning outcomes

Students have become familiar with recent findings from biochemical research. They have developed an understanding of the problems discussed in the module and are able to deliver a short presentation on those problems.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

presentation (approx. 10 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Contemporary Research in Biochemistry 2			08-AFBC2-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
2 semester	undergraduate	--	

Contents

A series of lectures discussing recent findings from local, national or international research. The lectures will describe the research methods used and will discuss the findings in the context of recent literature.

Intended learning outcomes

Students have become familiar with recent findings from biochemical research. They have developed an understanding of the problems discussed in the module and are able to deliver a short presentation on those problems.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

presentation (approx. 10 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Contemporary Research in Biochemistry 3			08-AFBC3-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
2 semester	undergraduate	--	

Contents

A series of lectures discussing recent findings from local, national or international research. The lectures will describe the research methods used and will discuss the findings in the context of recent literature.

Intended learning outcomes

Students have become familiar with recent findings from biochemical research. They have developed an understanding of the problems discussed in the module and are able to deliver a short presentation on those problems.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

presentation (approx. 10 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Analytical Chemistry (lab)			08-ANP-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Anorganic Chemistry		Institute of Inorganic Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
6	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module gives students the opportunity to apply in practice the knowledge they have gained through the related lecture(s). After a safety briefing, the students autonomously conduct experiments in the laboratory. These experiments focus on different methods for the analysis of unknown substances.

Intended learning outcomes

Students are able to use different methods to analyse unknown substances. In addition, they are able to separate and analyse mixtures.

Courses (type, number of weekly contact hours, language — if other than German)

P (12) + S (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations)
Language of assessment: German and/or English
Assessment offered: Once a year, summer semester

Allocation of places

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Additional information

according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 1st letter a) of annex 1 to the APOLmCh and No. 1 of annex 2 to the APOLmCh

Workload

180 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major) Food Chemistry (2021)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Food Chemistry (2025)

Module title			Abbreviation
Practical Course - abroad			08-AP-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Please consult with course advisory service in advance.	

Contents

Practical course to be completed at universities abroad. Students may complete this course in the context of exchange programmes such as Erasmus etc. The contents of the course should correspond to the contents of a lab course offered in the context of the Bachelor's programme in Biochemistry (180 ECTS credits); please consult with the competent coordinator in advance.

Intended learning outcomes

Students are familiar with procedures and processes used at universities in countries other than Germany. They have acquired subject-specific skills as well as language and interpersonal skills.

Courses (type, number of weekly contact hours, language — if other than German)

P (0)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Log (approx. 30 pages)
Language of assessment: German and/or English

Allocation of places

--

Additional information

Additional information on module duration: approx. 6 weeks.

Workload

300 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Practical Course - abroad (abridged)			08-APK-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Please consult with course advisory service in advance.	

Contents

Practical course to be completed at universities abroad. Students may complete this course in the context of exchange programmes such as Erasmus etc. The contents of the course should correspond to the contents of a lab course offered in the context of the Bachelor's programme in Biochemistry (180 ECTS credits); please consult with the competent coordinator in advance.

Intended learning outcomes

Students are familiar with procedures and processes used at universities in countries other than Germany. They have acquired subject-specific skills as well as language and interpersonal skills.

Courses (type, number of weekly contact hours, language — if other than German)

P (0)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Log (approx. 20 pages)
Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: approx. 3 weeks.

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title	Abbreviation
Inorganic Chemistry of the Elements	08-AS1-152-m01

Module coordinator	Module offered by
lecturer of lecture "Chemie der Hauptgruppenelemente" (Chemistry of Main-group Elements)	Institute of Inorganic Chemistry

ECTS	Method of grading	Only after succ. compl. of module(s)
6	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	undergraduate	--

Contents

This module equips students with an advanced knowledge of the periodic table and selected elements. It focuses on bonding conditions, trends in the periodic table and the description and structure of elements. In addition, it introduces students to elementary organic chemistry, coordination chemistry and complex chemistry.

Intended learning outcomes

Students are able to characterise main group elements and transition metal elements in terms of their structure, reactivity and fabrication. They are able to identify the coordination of the atoms. In addition, they have learned how to use the periodic table, an essential tool for chemists.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + V (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 90 to 180 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or
d) log (approx. 20 pages) or
e) presentation (approx. 30 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter a) of annex 1 to the APOLmCh and No. 1 of annex 2 to the APOLmCh

Workload

180 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 62 I Nr. 1

Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Module studies (Bachelor) Chemistry (2019)

Module studies (Bachelor) Orientierungsstudien (2020)
Bachelor's degree (1 major) Food Chemistry (2021)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Food Chemistry (2025)

Module title			Abbreviation
Advanced lab			08-AVP10-BC-152-m01
Module coordinator			**Module offered by**
chairperson of examination committee Biochemie (Biochemistry)			Chair of Biochemistry
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module gives students the opportunity to explore a specific research topic and present the results of their work in a written report.

Intended learning outcomes

Students are able to explore a specific research topic and present the results of their work in a written report.

Courses (type, number of weekly contact hours, language — if other than German)

P (16)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Log (approx. 30 pages)
Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: approx. 6 weeks.

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Advanced lab (abridged)			08-AVP5-BC-152-m01
Module coordinator			**Module offered by**
chairperson of examination committee Biochemie (Biochemistry)			Chair of Biochemistry
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module gives students the opportunity to explore a specific research topic and present the results of their work in a written report.

Intended learning outcomes

Students are able to explore a specific research topic and present the results of their work in a written report.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Log (approx. 20 pages)
Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: approx. 3 weeks.

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Guidance in scientific practice			08-AWA-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module gives students the opportunity to guide students in earlier stages of their degrees through a practical experiment and learn how to organise scientific experiments, perform those experiments in a responsible manner and instruct others in the lab.

Intended learning outcomes

Students are able to guide students in earlier stages of their degrees through practical experiments and have learned how to instruct others in the lab.

Courses (type, number of weekly contact hours, language — if other than German)

T (0)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Wrap-up report (approx. 1 page)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Bachelor Thesis in Biochemistry			08-BA-BC-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
12	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module gives students the opportunity to research and write on a defined problem within a given time frame and using the scientific methods they have learned during the programme.

Intended learning outcomes

Students are able to conduct research on a defined problem/topic, adhering to the principles of good scientific practice, and to present the results of their work in written form.

Courses (type, number of weekly contact hours, language — if other than German)

No courses assigned to module

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Bachelor's thesis (50 to 70 pages)
Language of assessment: German or English

Allocation of places

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Additional information

Time to complete: 10 weeks.

Workload

360 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Bioanalytics			08-BAN-222-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
7	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The module imparts the theoretical and practical fundamentals of bioanalysis by lectures and both theoretical and practical exercises.

Intended learning outcomes

After attending the module events the student has basic knowledge of bioanalysis and is able to apply the contents in practical experiments.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + Ü (1) + P (5)
Module taught in: German

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

210 h

Teaching cycle

Teaching cycle: Once a year, summer semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Biochemistry 1			08-BC1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Comprising lectures and exercises, this module acquaints students with the fundamental principles of biochemistry. A particular focus is on the biochemistry of proteins (amino acids, peptide bonds, primary, secondary, tertiary and quaternary structures), catalytic strategies and enzyme kinetics, carbohydrate metabolism (glycolysis, gluconeogenesis, citric acid cycle, cellular respiration, photosynthesis), fatty acid metabolism (beta oxidation, fatty acid synthesis), nucleotide metabolism, the urea cycle and amino acid metabolism. The module also discusses the structure of the DNA and the central dogma of molecular biology.

Intended learning outcomes

Students have become familiar with the fundamental principles of the topics in biochemistry that were discussed in the module. They are able to describe the key biochemical processes in cellular systems.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 90 minutes)

Allocation of places

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Additional information

according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. II 2nd letter e) and No. II 1st letter c) of annex 1 to the APOLmCh and No. 3 of annex 3 to the APOLmCh

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 42 I Nr. 2
§ 62 I Nr. 2

Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biology (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Food Chemistry (2015)
Bachelor's degree (1 major) Functional Materials (2015)
First state examination for the teaching degree Grundschule Chemistry (2015)
First state examination for the teaching degree Realschule Chemistry (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
First state examination for the teaching degree Mittelschule Chemistry (2015)
Bachelor's degree (1 major) Food Chemistry (2016)
Bachelor's degree (1 major) Biology (2017)

Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Module studies (Bachelor) Chemistry (2019)
Bachelor's degree (1 major) Food Chemistry (2019)
Module studies (Bachelor) Orientierungsstudien (2020)
First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015))
Bachelor's degree (1 major) Biology (2021)
Bachelor's degree (1 major) Functional Materials (2021)
Bachelor's degree (1 major) Food Chemistry (2021)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Biology (2022)
Bachelor's degree (1 major) Functional Materials (2025)
Bachelor's degree (1 major) Food Chemistry (2025)

Module title			Abbreviation
Biochemistry 2			08-BC2-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Comprising lectures and exercises, this module acquaints students with the fundamental principles of biochemistry. A particular focus is on replication, DNA repair, transcription, mRNA maturation, translation and translational regulation, protein targeting, nuclear transport and protein degradation. The module also discusses the fundamental principles of cellular signal transduction.

Intended learning outcomes

Students have become familiar with the fundamental principles of the topics in biochemistry that were discussed in the module. They are able to describe the key biochemical processes in cellular systems.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 90 minutes)

Allocation of places

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Additional information

Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 2. Letter e) and No. II 1. Letter c) of Annex 1 of APOLmCh and No. 3 of Annex 3 of APOLmCh.

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biology (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Food Chemistry (2015)
Bachelor's degree (1 major) Food Chemistry (2016)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major) Food Chemistry (2019)
Bachelor's degree (1 major) Biology (2021)
Bachelor's degree (1 major) Food Chemistry (2021)
Bachelor's degree (1 major) Biochemistry (2022)

Bachelor's degree (1 major) Biology (2022)
Bachelor's degree (1 major) Food Chemistry (2025)

Module title			Abbreviation
Current Methods of Protein Chromatography			08-BC-AMP-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Comprising practical experiments, this module equips students with the theoretical principles of, and methodological skills for, protein purification using modern chromatographic techniques.

Intended learning outcomes

Students have become familiar with the tools used for chromatographic protein purification. They have become familiar with the relevant parameters and are able to transfer what they have learned to new problems. They are able to evaluate their results, produce written reports detailing those results as well as to discuss them.

Courses (type, number of weekly contact hours, language — if other than German)

P (5)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German and/or English
Assessment offered: Once a year, winter semester

Allocation of places

Biochemie (Biochemistry), Bachelor's: 24 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third 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. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Ethics and Legal Regulations of Molecular Life Sciences			08-BC-ELW-222-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Bachelor Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module has two parts. One part introduces the central ethical issues of molecular life sciences. The first part will be taught in a lecture and a related seminar. The other part, which will be taught in an additional lecture, conveys the subject field of legal requirements regarding genetic engineering and biosafety. This module will also cover ethical and legal guidelines to safeguard Good Scientific Practice.

Intended learning outcomes

Students will be able to argue critically and rational about the ethical standards for professional practices. They have workable knowledge about ethical issues, theories, and methods related to molecular life sciences, allowing them to argue systematically. The students know the necessary infrastructure and usage rules for the different security levels of genetic engineering facilities. They have mastered the basics of genetic engineering in theory and are able to describe relevant examples of the use of gene technology and to explain the associated safety issues.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + S (1) + V (1)
Module taught in: German

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
d) presentation (20 to 30 minutes) or
e) term paper (8 to 12 pages)
Language of assessment: German
Assessment offered: every semester

Allocation of places

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Additional information

Regular attendance at the seminar dates (minimum 80%) is a prerequisite for admission to assessment.

Workload

90 h

Teaching cycle

Teaching cycle: Once a year, summer semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Completive Qualification in Natural Sciences 3			08-BC-EQN3-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Please consult with course advisory service in advance.	

Contents

A course in the natural sciences not offered as part of the degree programme in Biochemistry that equips students with advanced knowledge in the natural sciences that is related to their discipline. That course may be offered by the University of Würzburg or by external institutions. Decision on credit transfer to be made by examination committee.

Intended learning outcomes

Students have developed an improved scientific knowledge and have thus enhanced their specific qualifications. They have acquired additional expertise that will help them specialise in their field.

Courses (type, number of weekly contact hours, language — if other than German)

Ü (0)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German or English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Completive Qualification in Natural Sciences 5			08-BC-EQN5-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Please consult with course advisory service in advance.	

Contents

A course in the natural sciences not offered as part of the degree programme in Biochemistry that equips students with advanced knowledge in the natural sciences that is related to their discipline. That course may be offered by the University of Würzburg or by external institutions. Decision on credit transfer to be made by examination committee.

Intended learning outcomes

Students have developed an improved scientific knowledge and have thus enhanced their specific qualifications. They have acquired additional expertise that will help them specialise in their field.

Courses (type, number of weekly contact hours, language — if other than German)

Ü (0)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Molecular Biology			08-BC-MOL-222-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The module covers specific topics of molecular physiology and functional biochemistry in lectures and exercices.

Intended learning outcomes

After attending the module events, students have sound knowledge in molecular biology.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (1)
Module taught in: German

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

Teaching cycle: Once a year, summer semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2022)
Master's degree (1 major) Chemistry (2024)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)
Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Module title			Abbreviation
Molecular Biology laboratory course			08-BC-MOLP-172-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module equips students with practical skills in the areas of recombinant engineering and characterisation of macromolecular complexes, modern biomolecular techniques, in vivo analysis of biochemical processes, and modern imaging techniques.

Intended learning outcomes

Students have developed a knowledge of molecular biology and are able to apply it to practical experiments.

Courses (type, number of weekly contact hours, language — if other than German)

P (5)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German and/or English
Assessment offered: Once a year, winter semester

Allocation of places

Biochemie (Biochemistry) 24 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third 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. A waiting list will be maintained and places re-allocated as they become available.
Chemie (Chemistry), Master's and MINT-Lehramt PLUS Master's: 6 places. Selection process: 1. Applications of Master's degree programme Chemie (Chemistry) (120 ECTS credits) will be considered first: Places will be allocated according to the number of subject semesters. Among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available. 2. In case that there are places left after procedure 1 is finished completely, theses places will be distributed among the students in the Master's degree programme MINT-Lehramt PLUS as follows: Places will be allocated according to the number of subject semesters. Among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Master's degree (1 major) Chemistry (2018) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Biochemistry (2022) Master's degree (1 major) Chemistry (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Module title			Abbreviation
Practical course of Biochemistry			08-BCP-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	08-BC1	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Practical exercises give students the opportunity to learn the fundamental principles of conducting biochemical experiments.

Intended learning outcomes

Students have become proficient in essential methods in biochemistry.

Courses (type, number of weekly contact hours, language — if other than German)

P (6)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Log (approx. 30 pages)
Assessment offered: Once a year, summer semester

Allocation of places

Students of the Bachelor's degree programme Biochemie (Biochemistry, 180 ECTS credits): no restrictions with regard to available places.
Students of the Bachelor's degree programme Chemie (Chemistry, 180 ECTS credits): no more than 6 places; places will be allocated according to the number of subject semesters, among applicants with the same number of subject semesters, places will be allocated by lot; a waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Philosophical Aspects of the Sciences			08-BC-PHIL-212-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Bachelor Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The module teaches key philosophical issues related to current sciences. It will cover both practical, i.e., ethical, societal and political, aspects of science or theoretical, i.e., methodological or epistemological, topics.

Intended learning outcomes

Students will know how to rationally and systematically discuss philosophical topics that are related to science. They will have working knowledge about the essential theories and they can apply the central philosophical tools and methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) term paper (8 to 12 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) presentation (20 to 30 minutes)
Language of assessment: German and/or English
Assessment offered: Once a year, winter term

Allocation of places

Biochemie (Biochemistry), Bachelor's: 30 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits):
Should the number of applications exceed the number of available places, places will be allocated according to the following quotas:
Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot.
Quota 2 (one third 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.
A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

90 h

Teaching cycle

Teaching cycle: every year, winter semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title	Abbreviation
Structure and Function of Biological Membranes and Membrane Proteins	08-BC-SFBM-212-m01

Module coordinator	Module offered by
chairperson of examination committee Bachelor Biochemie (Biochemistry)	Chair of Biochemistry

ECTS	Method of grading	Only after succ. compl. of module(s)
10	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	undergraduate	--

Contents

Membranes and membrane proteins are involved in important functions in the cell. Membrane proteins enable the controlled transport of substances across the membrane, allow the exchange of information via receptors, and convert energy in the respiratory chain or photosynthesis. In this course, different classes of membrane proteins are introduced, typical membrane-bound vectorial processes are discussed, and methods are introduced to study these processes.

Intended learning outcomes

Students can explain the specific properties of membrane proteins and membranes. They can characterize and classify different types of membrane proteins based on functional and structural features. Students can discuss membrane-bound energy transition processes comparatively. They master practical methods for purification and characterization of biological membranes and membrane proteins. Students can independently compile current literature on membrane-bound processes and can give class presentations on these topics.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1) + P (5)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) term paper (8 to 12 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) presentation (20 to 30 minutes)
Language of assessment: German and/or English
Assessment offered: Once a year, winter term

Allocation of places

Biochemie (Biochemistry), Bachelor's: 12 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits):
Should the number of applications exceed the number of available places, places will be allocated according to the following quotas:
Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot.
Quota 2 (one third 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.
A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

300 h

Teaching cycle

Teaching cycle: every year, winter semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Additional Qualification in Natural Sciences 3			08-BC-ZQN3-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Please consult with course advisory service in advance.	

Contents

A course in the natural sciences not offered as part of the degree programme in Biochemistry that equips students with advanced knowledge in the natural sciences that is related to their discipline. That course may be offered by the University of Würzburg or by external institutions. Decision on credit transfer to be made by examination committee.

Intended learning outcomes

Students have developed an improved scientific knowledge and have thus enhanced their specific qualifications. They have acquired additional expertise that will help them specialise in their field.

Courses (type, number of weekly contact hours, language — if other than German)

Ü (0)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German or English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Additional Qualification in Natural Sciences 5			08-BC-ZQN5-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Please consult with course advisory service in advance.	

Contents

A course in the natural sciences not offered as part of the degree programme in Biochemistry that equips students with advanced knowledge in the natural sciences that is related to their discipline. That course may be offered by the University of Würzburg or by external institutions. Decision on credit transfer to be made by examination committee.

Intended learning outcomes

Students have developed an improved scientific knowledge and have thus enhanced their specific qualifications. They have acquired additional expertise that will help them specialise in their field.

Courses (type, number of weekly contact hours, language — if other than German)

Ü (0)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Imaging methods in life-sciences			08-BGV-202-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biochemistry		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The module "Imaging Techniques in the Life Sciences" contains a lecture part and a seminar part. In the lecture part basic concepts of optics will be discussed and the functionality of a light microscope will be explained. Afterwards the principles of different variants of superresolution light microscopy will be introduced. Typical applications for the study of dynamic processes in cells and the temporal and spatial resolution potential of the different methods play a special role. Subsequently, the principles of electron microscopy (transmission electron microscopy and scanning electron microscopy) will be discussed. As far as possible, parallels to light microscopy will be developed. Typical electron microscopic applications in cell biology and structural biology will be discussed including correlative methods combining light and electron microscopy. Then the principles of more specific microscopy methods such as X-ray microscopy, scanning probe microscopy and nuclear resonance microscopy will be introduced. It will be worked out how the fields of application differ from those of classical microscopy methods and what the temporal and spatial resolution capabilities of the individual methods are. Finally, selected imaging methods from the clinical field (X-ray tomography, nuclear spin tomography and ultrasound) for the imaging of entire organisms will be discussed. As far as possible, parallels are drawn to the microscopic procedures. In the seminar part some aspects of the different methods will be deepened by case studies from the literature and by applying the theoretical basics.

Intended learning outcomes

The participants learn the functionalities of different imaging techniques. They will be able to classify typical advantages and limitations of the methods and understand general principles of imaging techniques. Building on this understanding, they can easily evaluate and classify other methods. In order to apply what they have learned independently, the participants will analyse a primary publication independently and answer questions on the imaging methods in writing. The participants will acquire competences in dealing with primary literature in a foreign lan-guage. By working on the questions, the participants are trained to recognise relevant information in the primary publication and to reproduce it in a different context. Participants will have the opportunity to optimise their written expression skills in a scientific environment by working on questions relating to primary literature.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 45 to 90 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate)
Language of assessment: German or English
Assessment offered: Once a year, winter semester

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Biochemical Practical Seminar 1			08-BPS1-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
1	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Students participate in a project in the field of biochemistry they have selected in consultation with the module coordinator and write a report about that project.

Intended learning outcomes

Students have developed advanced subject-specific knowledge and skills and are able to write a report reflecting upon what they have learned.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Wrap-up report (approx. 1 page)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

30 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Biochemical Practical Seminar 2			08-BPS2-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
1	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Students participate in a project in the field of biochemistry they have selected in consultation with the module coordinator and write a report about that project.

Intended learning outcomes

Students have developed advanced subject-specific knowledge and skills and are able to write a report reflecting upon what they have learned.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Wrap-up report (approx. 1 page)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

30 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Biochemical Practical Seminar 3			08-BPS3-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
1	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Students participate in a project in the field of biochemistry they have selected in consultation with the module coordinator and write a report about that project.

Intended learning outcomes

Students have developed advanced subject-specific knowledge and skills and are able to write a report reflecting upon what they have learned.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Wrap-up report (approx. 1 page)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

30 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Practical Course - external			08-EP-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Faculty of Chemistry and Pharmacy	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Please consult with course advisory service in advance.	

Contents

Students complete a placement at a non-university research/diagnostic institution or a business. Contents to be determined by the host institution. The contents of the placement should correspond to the contents of a lab course offered in the context of the Bachelor's programme in Biochemistry (180 ECTS credits); please consult with the competent coordinator in advance.

Intended learning outcomes

Students have become familiar with the structures of non-university research institutions and have developed skills which qualify them to work in their profession.

Courses (type, number of weekly contact hours, language — if other than German)

P (0)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Log (approx. 30 pages)
Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: approx. 6 weeks.

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Practical Course - external (abridged)			08-EPK-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Please consult with course advisory service in advance.	

Contents

Students complete a placement at a non-university research/diagnostic institution or a business. Contents to be determined by the host institution. The contents of the placement should correspond to the contents of a lab course offered in the context of the Bachelor's programme in Biochemistry (180 ECTS credits); please consult with the competent coordinator in advance.

Intended learning outcomes

Students have become familiar with the structures of non-university research institutions and have developed skills which qualify them to work in their profession.

Courses (type, number of weekly contact hours, language — if other than German)

P (0)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Log (approx. 20 pages)
Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: approx. 3 weeks.

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Green and sustainable (organic) chemistry			08-GC-242-m01
Module coordinator		**Module offered by**	
lecturer of lecture "Grüne und nachhaltige (organische) Chemie"		Institute of Organic Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The module provides an overview of the fundamental principles of green and sustainable chemistry. A focus will be on the twelve principles of green chemistry with examples from organic chemistry complemented by current environmental topics. Furthermore, life cycle assessment and aspects of sustainability beyond the directly chemistry related ones will be discussed.

Intended learning outcomes

The student understands the principles of green and sustainable chemistry and can use this knowledge as fundament to critically assess chemical reactions and processes. He/She acquired basic knowledge in life cycle assessments and is aware of sustainability aspects beyond chemistry itself. He/She can transfer the learnings to a defined topic area and analyze this in detail.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (1)
Module taught in: German or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) portfolio (approx. approx. 40 hours total) or
b) written examination (approx. 60 to 90 minutes)
Language of assessment: German and/or English
Assessment offered: Once a year, winter semester

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

Teaching cycle: Once a year, winter semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

First state examination for the teaching degree Grundschule English (2009)
First state examination for the teaching degree Grundschule Biology (2009)
First state examination for the teaching degree Grundschule Chemistry (2009)
First state examination for the teaching degree Grundschule Geography (2009)
First state examination for the teaching degree Grundschule Protestant Theology (2009)
First state examination for the teaching degree Grundschule German (2009)
First state examination for the teaching degree Grundschule History (2009)
First state examination for the teaching degree Grundschule History (2015)

First state examination for the teaching degree Grundschule Catholic Theology (2009)
First state examination for the teaching degree Grundschule Mathematics (2009)
First state examination for the teaching degree Grundschule Music (2009)
First state examination for the teaching degree Grundschule Physics (2009)
First state examination for the teaching degree Grundschule Social Science (2009)
First state examination for the teaching degree Grundschule Science of Sport (2009)
First state examination for the teaching degree Hauptschule English (2009)
First state examination for the teaching degree Hauptschule Biology (2009)
First state examination for the teaching degree Hauptschule Chemistry (2009)
First state examination for the teaching degree Hauptschule Geography (2009)
First state examination for the teaching degree Hauptschule Protestant Theology (2009)
First state examination for the teaching degree Hauptschule German (2009)
First state examination for the teaching degree Hauptschule History (2009)
First state examination for the teaching degree Hauptschule Catholic Theology (2009)
First state examination for the teaching degree Hauptschule Mathematics (2009)
First state examination for the teaching degree Hauptschule Music (2009)
First state examination for the teaching degree Hauptschule Physics (2009)
First state examination for the teaching degree Hauptschule Social Science (2009)
First state examination for the teaching degree Hauptschule Science of Sport (2009)
First state examination for the teaching degree Realschule English (2009)
First state examination for the teaching degree Realschule Biology (2009)
First state examination for the teaching degree Realschule Chemistry (2009)
First state examination for the teaching degree Realschule Geography (2009)
First state examination for the teaching degree Realschule Protestant Theology (2009)
First state examination for the teaching degree Realschule French Studies (2009)
First state examination for the teaching degree Realschule German (2009)
First state examination for the teaching degree Realschule History (2009)
First state examination for the teaching degree Realschule Computer Science (2012)
First state examination for the teaching degree Realschule Catholic Theology (2009)
First state examination for the teaching degree Realschule Mathematics (2009)
First state examination for the teaching degree Realschule Music (2009)
First state examination for the teaching degree Realschule Physics (2009)
First state examination for the teaching degree Realschule Science of Sport (2009)
First state examination for the teaching degree Gymnasium English (2009)
First state examination for the teaching degree Gymnasium Biology (2009)
First state examination for the teaching degree Gymnasium Chemistry (2009)
First state examination for the teaching degree Gymnasium Geography (2009)
First state examination for the teaching degree Gymnasium French Studies (2009)
First state examination for the teaching degree Gymnasium German (2009)
First state examination for the teaching degree Gymnasium History (2009)
First state examination for the teaching degree Gymnasium Greek Philology (2009)
First state examination for the teaching degree Gymnasium Computer Science (2009)
First state examination for the teaching degree Gymnasium Italian Studies (2009)
First state examination for the teaching degree Gymnasium Catholic Theology (2009)
First state examination for the teaching degree Gymnasium Latin Philology (2009)
First state examination for the teaching degree Gymnasium Mathematics (2012)
First state examination for the teaching degree Gymnasium Mathematics (2009)
First state examination for the teaching degree Gymnasium Music (2009)
First state examination for the teaching degree Gymnasium Physics (2009)
First state examination for the teaching degree Gymnasium Russian (2009)
First state examination for the teaching degree Gymnasium Social Science (2009)
First state examination for the teaching degree Gymnasium Spanish Studies (2009)
First state examination for the teaching degree Gymnasium Science of Sport (2009)

First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2009)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Secondary Education (2009)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2009)
First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2013)
First state examination for the teaching degree Mittelschule English (2013)
First state examination for the teaching degree Mittelschule Biology (2013)
First state examination for the teaching degree Mittelschule Chemistry (2013)
First state examination for the teaching degree Mittelschule Geography (2013)
First state examination for the teaching degree Mittelschule Protestant Theology (2013)
First state examination for the teaching degree Mittelschule German (2013)
First state examination for the teaching degree Mittelschule History (2013)
First state examination for the teaching degree Mittelschule Catholic Theology (2013)
First state examination for the teaching degree Mittelschule Mathematics (2013)
First state examination for the teaching degree Mittelschule Physics (2013)
First state examination for the teaching degree Mittelschule Social Science (2013)
First state examination for the teaching degree Mittelschule Science of Sport (2013)
Bachelor's degree (1 major) Chemistry (2015)
First state examination for the teaching degree Grundschule English (2015)
First state examination for the teaching degree Grundschule Biology (2015)
First state examination for the teaching degree Grundschule Chemistry (2015)
First state examination for the teaching degree Grundschule Geography (2015)
First state examination for the teaching degree Grundschule German (2015)
First state examination for the teaching degree Grundschule Catholic Theology (2015)
First state examination for the teaching degree Grundschule Mathematics (2015)
First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2015)
First state examination for the teaching degree Grundschule Physics (2015)
First state examination for the teaching degree Grundschule Social Science (2015)
First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Chemistry (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Geography (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in German (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in History (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Catholic Theology (Primary School) (2015)
First state examination for the teaching degree Grundschule Art Education in Primary School (2015)
First state examination for the teaching degree Grundschule Didactics in Science of Sport (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Mathematics (Primary School) (2015)
First state examination for the teaching degree Grundschule Music Education in Primary School (2015)
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Social Science (Primary School) (2015)
First state examination for the teaching degree Grundschule Science of Sport (2015)
First state examination for the teaching degree Realschule English (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Realschule Chemistry (2015)
First state examination for the teaching degree Realschule Geography (2015)
First state examination for the teaching degree Realschule Protestant Theology (2015)
First state examination for the teaching degree Realschule French Studies (2015)
First state examination for the teaching degree Realschule German (2015)
First state examination for the teaching degree Realschule History (2015)
First state examination for the teaching degree Realschule Computer Science (2015)
First state examination for the teaching degree Realschule Catholic Theology (2015)
First state examination for the teaching degree Realschule Mathematics (2015)

First state examination for the teaching degree Realschule Physics (2015)
First state examination for the teaching degree Realschule Science of Sport (2015)
First state examination for the teaching degree Gymnasium English (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
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First state examination for the teaching degree Gymnasium Geography (2015)
First state examination for the teaching degree Gymnasium French Studies (2015)
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First state examination for the teaching degree Gymnasium Computer Science (2015)
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First state examination for the teaching degree Gymnasium Catholic Theology (2015)
First state examination for the teaching degree Gymnasium Latin Philology (2015)
First state examination for the teaching degree Gymnasium Mathematics (2015)
First state examination for the teaching degree Gymnasium Physics (2015)
First state examination for the teaching degree Gymnasium Russian (2015)
First state examination for the teaching degree Gymnasium Social Science (2015)
First state examination for the teaching degree Gymnasium Spanish Studies (2015)
First state examination for the teaching degree Gymnasium Science of Sport (2015)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Primary School) (2015)
First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Primary School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2015)
First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Ergonomics (Teaching at the German Mittelschule) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2015)
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First state examination for the teaching degree Mittelschule English (2015)

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First state examination for the teaching degree Grundschule Music (2015)
First state examination for the teaching degree Grundschule Didactics in Protestant Theology (Primary School) (2015)
First state examination for the teaching degree Realschule Music (2015)
First state examination for the teaching degree Gymnasium Music (2015)
First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Primary School) (2015)
First state examination for the teaching degree Mittelschule Music (2015)
First state examination for the teaching degree Gymnasium French Studies (2016)
First state examination for the teaching degree Gymnasium Italian Studies (2016)
First state examination for the teaching degree Gymnasium Spanish Studies (2016)
First state examination for the teaching degree Realschule French Studies (2016)
First state examination for the teaching degree Grundschule English (2016)
First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2016)
First state examination for the teaching degree Realschule English (2016)
First state examination for the teaching degree Gymnasium English (2016)
First state examination for the teaching degree Mittelschule English (2016)
First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2016)
First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2016)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)

First state examination for the teaching degree Gymnasium Greek Philology (2018)
First state examination for the teaching degree Grundschule Physics (2018)
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018)
First state examination for the teaching degree Realschule Physics (2018)
First state examination for the teaching degree Gymnasium Physics (2018)
First state examination for the teaching degree Mittelschule Physics (2018)
First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018)
First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018)
First state examination for the teaching degree Gymnasium Mathematics (2019)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule German (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule English (2020 (Prüfungsordnungsversion 2016))
First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016))
First state examination for the teaching degree Mittelschule Protestant Theology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Protestant Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Geography (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule History (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Catholic Theology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Catholic Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Mathematics (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Art Education in Middle School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Science of Sport (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Science of Sport (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Music (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Music Education in Middle School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Teaching at the German Mittelschule (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016))

First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Geography (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Art Education in Middle School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020)
First state examination for the teaching degree Grundschule Physics (2020)
First state examination for the teaching degree Gymnasium Physics (2020)
First state examination for the teaching degree Realschule Physics (2020)
First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020)
First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020)
First state examination for the teaching degree Mittelschule Physics (2020)
First state examination for the teaching degree Grundschule Political and Social Studies (2020)
First state examination for the teaching degree Grundschule Didactics in Political and Social Studies (Primary School) (2020)
First state examination for the teaching degree Sonderpädagogik MS-Didaktik Career and Economics (2020)
First state examination for the teaching degree Sonderpädagogik Didactics in Political and Social Studies (Secondary School) (2020)
First state examination for the teaching degree Mittelschule MS-Didaktik Career and Economics (2020)
First state examination for the teaching degree Mittelschule Didactics in Political and Social Studies (Secondary School) (2020)

First state examination for the teaching degree Mittelschule Political and Social Studies (2020)
First state examination for the teaching degree Gymnasium Political and Social Studies (2020)
First state examination for the teaching degree Grundschule History (2021)
First state examination for the teaching degree Gymnasium History (2021)
First state examination for the teaching degree Realschule History (2021)
First state examination for the teaching degree Mittelschule History (2021)
First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2021)
First state examination for the teaching degree Gymnasium English (2021)
First state examination for the teaching degree Gymnasium Philosophy and Ethics (2021)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2021)
Bachelor's degree (1 major) Biochemistry (2022)
First state examination for the teaching degree Gymnasium Philosophy and Ethics (2022)
First state examination for the teaching degree Gymnasium Russian (2023)
First state examination for the teaching degree Gymnasium Mathematics (2023)
First state examination for the teaching degree Gymnasium English (2023)
First state examination for the teaching degree Realschule English (2023)
First state examination for the teaching degree Grundschule English (2023)
First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2023)
First state examination for the teaching degree Mittelschule English (2023)
First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2023)
First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2023)
First state examination for the teaching degree Gymnasium Geography (2023)
First state examination for the teaching degree Realschule Geography (2023)
First state examination for the teaching degree Grundschule Geography (2023)
First state examination for the teaching degree Mittelschule Geography (2023)
First state examination for the teaching degree Grundschule German (2024)
First state examination for the teaching degree Gymnasium German (2024)
First state examination for the teaching degree Realschule German (2024)
First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2024)
First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2024)
First state examination for the teaching degree Grundschule Didactics in German (Primary School) (2024)
First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2024)
First state examination for the teaching degree Mittelschule German (2024)
First state examination for the teaching degree Grundschule Music Education in Primary School (2024)
First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2024)
First state examination for the teaching degree Mittelschule Music Education in Middle School (2024)
First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2024)
First state examination for the teaching degree Gymnasium Latin Philology (2024)
First state examination for the teaching degree Gymnasium English (2024)
First state examination for the teaching degree Mittelschule MS-Didaktik Career and Economics (2024)
First state examination for the teaching degree Sonderpädagogik MS-Didaktik Career and Economics (2024)
First state examination for the teaching degree Grundschule History (2024)
First state examination for the teaching degree Gymnasium History (2024)
First state examination for the teaching degree Realschule History (2024)
First state examination for the teaching degree Mittelschule History (2024)
First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2024)
First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2024)
First state examination for the teaching degree Grundschule Didactics in History (Primary School) (2024)
First state examination for the teaching degree Gymnasium Greek Philology (2024)
First state examination for the teaching degree Grundschule Art Education in Primary School (2024)
First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2024)
First state examination for the teaching degree Sonderpädagogik Art Education in Middle School (2024)
First state examination for the teaching degree Mittelschule Art Education in Middle School (2024)

Module title			Abbreviation
Defense of the Bachelor Thesis in Biochemistry			08-KOLL-BC-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Students deliver a presentation on the findings of their Bachelor's thesis and critically discuss them with their audience.

Intended learning outcomes

Students are able to orally defend their Bachelor's thesis.

Courses (type, number of weekly contact hours, language — if other than German)

K (0)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

final colloquium (approx. 30 minutes)
Language of assessment: German or English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Practical Lab Course			08-LP-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Please consult with course advisory service in advance.	

Contents

This lab course is based in a biochemistry and/or molecular biology research group at the University of Würzburg. Please consult with the competent coordinator in advance regarding contents to be covered. The course gives students the opportunity to actively engage with methods in biochemistry, molecular biology and/or bioinformatics. Students will be expected to write a lab report documenting their experiments and findings.

Intended learning outcomes

Students have consolidated and enhanced their proficiency in research methods. They have developed the ability to apply those methods to new problems and to determine whether they are suitable for those problems. They have learned how to document and discuss experimental procedures and findings according to best scientific practice.

Courses (type, number of weekly contact hours, language — if other than German)

P (16)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Log (approx. 30 pages)
Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: approx. 6 weeks.

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Practical Lab Course (abridged)			08-LPK-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Please consult with course advisory service in advance.	

Contents

This lab course is based in a biochemistry and/or molecular biology research group at the University of Würzburg. Please consult with the competent coordinator in advance regarding contents to be covered. The course gives students the opportunity to actively engage with methods in biochemistry, molecular biology and/or bioinformatics. Students will be expected to write a lab report documenting their experiments and findings.

Intended learning outcomes

Students have consolidated and enhanced their proficiency in research methods. They have developed the ability to apply those methods to new problems and to determine whether they are suitable for those problems. They have learned how to document and discuss experimental procedures and findings according to best scientific practice.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Log (approx. 20 pages)
Language of assessment: German and/or English

Allocation of places

--

Additional information

Additional information on module duration: approx. 3 weeks.

Workload

150 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Organic Chemistry 1			08-OC1-152-m01
Module coordinator			**Module offered by**
holder of the Professorship of Organic Chemistry			Institute of Organic Chemistry
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module provides students with an overview of the fundamental principles of organic chemistry. It examines the bonding situation of carbon and introduces students to the nomenclature of simple and moderately complex organic compounds. The module also discusses the fundamental principles of stereochemistry, substitution, addition and elimination reactions as well as synthesis planning.

Intended learning outcomes

Students know important categories of substances in organic chemistry. They are able to use different systems of nomenclature to determine simple substance names. Students are able to analyse the stereochemistry of molecules. They are able to describe and formulate some of the most important reactions in organic chemistry. For that purpose, they can analyse and categorise the characteristic reaction conditions and can use them for simple syntheses.

Courses (type, number of weekly contact hours, language — if other than German)

V (3) + Ü (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 90 to 180 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or
d) log (approx. 20 pages) or
e) presentation (approx. 30 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter b) of annex 1 to the APOLmCh and No. 2 of annex 2 to the APOLmCh

Workload

150 h

Teaching cycle

Teaching cycle: every year, summer semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 62 I Nr. 2

Module appears in

Bachelor's degree (1 major) Biology (2011)
Bachelor's degree (1 major) Chemistry (2010)
Bachelor's degree (1 major) Psychology (2010)
Bachelor's degree (1 major, 1 minor) Pedagogy (2013)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2013)
Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2008)
Bachelor's degree (2 majors) Special Education (2009)

Magister Theologiae Catholic Theology (2013)
Bachelor's degree (2 majors) English and American Studies (2009)
Bachelor's degree (2 majors) German Language and Literature (2013)
Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Geography (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Musicology (2015)
Bachelor's degree (1 major) Physics (2015)
Bachelor's degree (1 major) Psychology (2015)
Bachelor's degree (1 major) Business Management and Economics (2015)
Bachelor's degree (1 major) Nanostructure Technology (2015)
Bachelor's degree (1 major) Music Education (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major) Political and Social Studies (2015)
Bachelor's degree (1 major) Functional Materials (2015)
Bachelor's degree (1 major) Academic Speech Therapy (2015)
Bachelor's degree (1 major) Indology/South Asian Studies (2015)
Bachelor's degree (1 major, 1 minor) Egyptology (2015)
Bachelor's degree (1 major, 1 minor) Pedagogy (2015)
Bachelor's degree (1 major, 1 minor) History (2015)
Bachelor's degree (1 major, 1 minor) Musicology (2015)
Bachelor's degree (1 major, 1 minor) Philosophy (2015)
Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015)
Bachelor's degree (1 major, 1 minor) Ancient World (2015)
Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015)
Bachelor's degree (1 major, 1 minor) Theological Studies (2015)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015)
Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015)
Bachelor's degree (1 major, 1 minor) German Language and Literature (2015)
Bachelor's degree (2 majors) Egyptology (2015)
Bachelor's degree (2 majors) Pedagogy (2015)
Bachelor's degree (2 majors) Protestant Theology (2015)
Bachelor's degree (2 majors) Musicology (2015)
Bachelor's degree (2 majors) Philosophy (2015)
Bachelor's degree (2 majors) Special Education (2015)
Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015)
Bachelor's degree (2 majors) Latin Philology (2015)
Bachelor's degree (2 majors) Music Education (2015)
Bachelor's degree (2 majors) Philosophy and Religion (2015)
Bachelor's degree (2 majors) Theological Studies (2015)
Bachelor's degree (2 majors) Political and Social Studies (2015)
Bachelor's degree (2 majors) Russian Language and Culture (2015)
Bachelor's degree (2 majors) Greek Philology (2015)
Bachelor's degree (2 majors) European Ethnology (2015)
Bachelor's degree (2 majors) Indology/South Asian Studies (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
Bachelor's degree (2 majors) Geography (2015)
Bachelor's degree (2 majors) French Studies (2015)
Bachelor's degree (2 majors) History (2015)
Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015)
Bachelor's degree (2 majors) German Language and Literature (2015)
Bachelor's degree (1 major) Mathematical Physics (2016)

Bachelor's degree (1 major, 1 minor) French Studies (2016)
Bachelor's degree (2 majors) French Studies (2016)
Bachelor's degree (1 major, 1 minor) Italian Studies (2016)
Bachelor's degree (2 majors) Italian Studies (2016)
Bachelor's degree (1 major, 1 minor) Spanish Studies (2016)
Bachelor's degree (2 majors) Spanish Studies (2016)
Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016)
Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016)
Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016)
Bachelor's degree (1 major) Business Information Systems (2016)
Bachelor's degree (1 major) Games Engineering (2016)
Bachelor's degree (1 major, 1 minor) English and American Studies (2016)
Bachelor's degree (2 majors) English and American Studies (2016)
Bachelor's degree (1 major) Media Communication (2016)
Bachelor's degree (1 major) Food Chemistry (2016)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2016)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major, 1 minor) Geography (2017)
Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017)
Bachelor's degree (2 majors) History of Medieval and Modern Art (2017)
Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017)
Bachelor's degree (1 major) Aerospace Computer Science (2017)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2017)
Bachelor's degree (1 major) Economathematics (2017)
Bachelor's degree (1 major) Games Engineering (2017)
Bachelor's degree (1 major) Computer Science (2017)
Bachelor's degree (1 major) Media Communication (2018)
Bachelor's degree (1 major) Biomedicine (2018)
Bachelor's degree (1 major) Human-Computer Systems (2018)
Bachelor's degree (2 majors) Classical Archaeology (2018)
Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2018)
Bachelor's degree (2 majors) Digital Humanities (2018)
Bachelor's degree (1 major) Computer Science (2019)
Bachelor's degree (1 major, 1 minor) English and American Studies (2019)
Bachelor's degree (1 major) Indology/South Asian Studies (2019)
Bachelor's degree (1 major) Business Information Systems (2019)
Bachelor's degree (2 majors) Indology/South Asian Studies (2019)
Bachelor's degree (1 major) Business Management and Economics (2019)
Bachelor's degree (1 major) Modern China (2019)
Module studies (Bachelor) Orientierungsstudien (2020)
Bachelor's degree (1 major) Biomedicine (2020)
Bachelor's degree (1 major) Pedagogy (2020)
Bachelor's degree (1 major) Political and Social Studies (2020)
Bachelor's degree (1 major) Business Information Systems (2020)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020)
Bachelor's degree (2 majors) European Ethnology (2020)
Bachelor's degree (2 majors) Political and Social Studies (2020)
Bachelor's degree (2 majors) Special Education (2020)
Bachelor's degree (1 major) Physics (2020)
Bachelor's degree (1 major) Nanostructure Technology (2020)

Bachelor's degree (1 major) Mathematical Physics (2020)
Bachelor's degree (1 major) Aerospace Computer Science (2020)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2020)
Bachelor's degree (1 major, 1 minor) Pedagogy (2020)
Bachelor's degree (2 majors) Pedagogy (2020)
Bachelor's degree (1 major) Psychology (2020)
Bachelor's degree (1 major) Biology (2021)
Magister Theologiae Catholic Theology (2021)
Bachelor's degree (2 majors) History (2021)
Bachelor's degree (1 major, 1 minor) History (2021)
Bachelor's degree (1 major) Media Communication (2021)
Bachelor's degree (2 majors) Theological Studies (2021)
Bachelor's degree (1 major, 1 minor) Theological Studies (2021)
Bachelor's degree (1 major, 1 minor) English and American Studies (2021)
Bachelor's degree (2 majors) English and American Studies (2021)
Bachelor's degree (1 major) Functional Materials (2021)
Bachelor's degree (1 major) Computer Science und Sustainability (2021)
Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021)
Bachelor's degree (1 major) Food Chemistry (2021)
Bachelor's degree (1 major) Quantum Technology (2021)
Bachelor's degree (2 majors) Special Education (2021)
Bachelor's degree (1 major) Business Information Systems (2021)
Bachelor's degree (1 major) Economathematics (2021)
Bachelor's degree (1 major) Business Management and Economics (2021)
Bachelor's degree (1 major) Human-Computer Systems (2022)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2022)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Biology (2022)
Bachelor's degree (1 major) Economathematics (2022)
Bachelor's degree (1 major) Mathematical Data Science (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)
Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022)
Bachelor's degree (1 major, 1 minor) Ancient World (2022)
Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022)
Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022)
Bachelor's degree (1 major) European Law (2023)
Bachelor's degree (1 major, 1 minor) English and American Studies (2023)
Bachelor's degree (2 majors) English and American Studies (2023)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Business Information Systems (2023)
Bachelor's degree (1 major) Economathematics (2023)
Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023)
Bachelor's degree (2 majors) History of Medieval and Modern Art (2023)
Bachelor's degree (2 majors) Special Education (2023)
Bachelor's degree (1 major) Business Management and Economics (2023)
Bachelor's degree (1 major) Geography (2023)
Bachelor's degree (2 majors) Geography (2023)
Bachelor's degree (1 major, 1 minor) Geography (2023)
Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023)
Bachelor's degree (1 major) Mathematical Physics (2024)
Bachelor's degree (2 majors) German Language and Literature (2024)
Bachelor's degree (1 major, 1 minor) German Language and Literature (2024)

Bachelor's degree (1 major) Music Education (2024)
Bachelor's degree (2 majors) Music Education (2024)
Bachelor's degree (1 major, 1 minor) Music Education (2024)
Bachelor's degree (1 major) Indology/South Asian Studies (2024)
Bachelor's degree (2 majors) Indology/South Asian Studies (2024)
Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024)
Bachelor's degree (1 major, 1 minor) Ancient World (2024)
Bachelor's degree (2 majors) Digital Humanities (2024)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2024)
Bachelor's degree (1 major) Midwifery (2024)
Bachelor's degree (2 majors) Greek Philology (2024)
Bachelor's degree (2 majors) Latin Philology (2024)
Bachelor's degree (1 major) Business Information Systems (2024)
Bachelor's degree (1 major) Economathematics (2024)
Bachelor's degree (1 major) Business Management and Economics (2024)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)
Bachelor's degree (1 major) Human-Computer-Interaction (2024)
Bachelor's degree (2 majors) Art Education (2024)
Bachelor's degree (1 major) Digital Business & Data Science (2024)
Bachelor's degree (1 major) Classics (2024)
Bachelor's degree (1 major) Diversity, Ethics and Religions (2024)
Bachelor's degree (1 major) Functional Materials (2025)
Bachelor's degree (1 major) (2025)
Bachelor's degree (1 major) Food Chemistry (2025)
Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025)
Bachelor's degree (1 major) Pedagogy (2025)
Bachelor's degree (2 majors) Pedagogy (2025)
Bachelor's degree (1 major) Economathematics (2025)
Bachelor's degree (1 major) Academic Speech Therapy (2025)
Bachelor's degree (1 major, 1 minor) Pedagogy (2025)
Bachelor's degree (1 major) Games Engineering (2025)

Module title			Abbreviation
Organic Chemistry 2 and analytical methods in organic chemistry			08-OC2-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Physically Organic Chemistry		Institute of Organic Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
9	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module introduces students to the rules of aromaticity and discusses specific reactions of aromatics. Using the example of carbonyl compounds, it extends the students' knowledge of substitution, elimination and addition reactions to complex reaction mechanisms. The course also focuses on oxidation and reduction reactions as well as rearrangement. In addition, it introduces students to the spectroscopic methods of infrared spectroscopy, mass spectrometry and NMR spectroscopy.

Intended learning outcomes

Students have become familiar with the criteria for aromaticity. They can analyse the varying reactivity of carbonyl compounds. They are able to describe specific reactions of carbonyls and aromatics. For that purpose, they can plan and formulate multi-stage syntheses with complex reaction mechanisms and can transfer them to unknown reactions. Students are able to describe important spectroscopic methods, to evaluate a spectrum and to draw conclusions regarding the molecular structure.

Courses (type, number of weekly contact hours, language — if other than German)

V (3) + Ü (1) + V (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 90 to 180 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or
d) log (approx. 20 pages) or
e) presentation (approx. 30 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

270 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major) Functional Materials (2021)

Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Functional Materials (2025)

Module title			Abbreviation
Organic Chemistry 4			08-OC4-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Organic Chemistry II		Institute of Organic Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module discusses biologically important bonding classes, their reactions and syntheses, working with special hazardous substances, complicated working and synthesis techniques, purification methods and product analysis.

Intended learning outcomes

Students are able to name important heteroaromatics and to formulate their reactions and syntheses. They are able to characterise and categorise dyes. Students are able to describe the structure and selective synthesis of proteins. In addition, they are able to describe the structure of the DNA, carbohydrates, fats, terpenes and steroids.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 90 to 180 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or
d) log (approx. 20 pages) or
e) presentation (approx. 30 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 22 II Nr. 1 h)
§ 22 II Nr. 2 f)
§ 62 I Nr. 2

Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
First state examination for the teaching degree Grundschule Chemistry (2015)
First state examination for the teaching degree Realschule Chemistry (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
First state examination for the teaching degree Mittelschule Chemistry (2015)
Master's degree (1 major) Functional Materials (2016)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)
Bachelor's degree (1 major) Biochemistry (2017)

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)
First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015))
Bachelor's degree (1 major) Biochemistry (2022)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Module title			Abbreviation
Organic chemistry - laboratory course for Biochemistry students			08-OCP1-BC-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Organic Chemistry II		Institute of Organic Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
7	(not) successfully completed	08-OC1 and 08-ACP1-BC	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module gives students the opportunity to apply in practice the knowledge they have gained through the related lecture(s). After a safety briefing, the students autonomously conduct experiments in the laboratory. In addition to those experiments, students will be expected to take oral tests and write lab reports to demonstrate their knowledge. The course focuses on the safe handling of hazardous substances, simple experimental unit operations of organic chemistry, simple to multi-level syntheses and the analysis of the products.

Intended learning outcomes

Students know how to safely handle hazardous substances. They are able to conduct simple experimental operations of organic chemistry. They are able to analyse the yield and purity of the products and identify possible error sources. They are able to connect the theoretical aspects covered in the lecture with practical experiments in the laboratory.

Courses (type, number of weekly contact hours, language — if other than German)

P (12)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

210 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Organic Chemistry - advanced laboratory course for students of chemistry			08-OCP2-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Organic Chemistry II		Institute of Organic Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	08-OC2 and (08-OCP1 or OCP1-BC)	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module gives students the opportunity to enhance their experimental skills by working with special hazardous substances, using complex working and synthesis techniques as well as extensive purification methods and performing elaborate product analyses.

Intended learning outcomes

Students know how to safely and responsibly handle special hazardous substances. They are able to perform complex syntheses, purification methods and product analyses. They are able to use specialist literature to plan experiments.

Courses (type, number of weekly contact hours, language — if other than German)

P (11)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations)
Language of assessment: German and/or English

Allocation of places

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Additional information

--

Workload

150 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Molecular structure and spectroscopy			08-PC-MBS-152-m01
Module coordinator		**Module offered by**	
lecturer of lecture "Molekülbau and Spektroskopie"		Institute of Physical and Theoretical Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module provides an introduction to molecular structure, spectroscopy and quantum mechanics. The particle in a box model, quantum mechanical description of the hydrogen atom, atomic orbitals, molecular orbitals, chemical bonds. Analysis of molecules on the basis of the harmonic oscillator and rigid rotor models. As regards spectroscopy, a particular focus will be on UV-VIS spectroscopy, vibrational spectroscopy and microwave spectroscopy.

Intended learning outcomes

Students are able to explain key models of quantum mechanics and to apply them to molecules. They are able to describe different spectroscopic methods.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 90 to 180 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or
d) log (approx. 20 pages) or
e) presentation (approx. 30 minutes)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 62 I Nr. 1

Module appears in

First state examination for the teaching degree Grundschule English (2009)
First state examination for the teaching degree Grundschule Biology (2009)
First state examination for the teaching degree Grundschule Chemistry (2009)
First state examination for the teaching degree Grundschule Geography (2009)
First state examination for the teaching degree Grundschule Protestant Theology (2009)
First state examination for the teaching degree Grundschule German (2009)
First state examination for the teaching degree Grundschule History (2009)
First state examination for the teaching degree Grundschule History (2015)

First state examination for the teaching degree Grundschule Catholic Theology (2009)
First state examination for the teaching degree Grundschule Mathematics (2009)
First state examination for the teaching degree Grundschule Music (2009)
First state examination for the teaching degree Grundschule Physics (2009)
First state examination for the teaching degree Grundschule Social Science (2009)
First state examination for the teaching degree Grundschule Science of Sport (2009)
First state examination for the teaching degree Hauptschule English (2009)
First state examination for the teaching degree Hauptschule Biology (2009)
First state examination for the teaching degree Hauptschule Chemistry (2009)
First state examination for the teaching degree Hauptschule Geography (2009)
First state examination for the teaching degree Hauptschule Protestant Theology (2009)
First state examination for the teaching degree Hauptschule German (2009)
First state examination for the teaching degree Hauptschule History (2009)
First state examination for the teaching degree Hauptschule Catholic Theology (2009)
First state examination for the teaching degree Hauptschule Mathematics (2009)
First state examination for the teaching degree Hauptschule Music (2009)
First state examination for the teaching degree Hauptschule Physics (2009)
First state examination for the teaching degree Hauptschule Social Science (2009)
First state examination for the teaching degree Hauptschule Science of Sport (2009)
First state examination for the teaching degree Realschule English (2009)
First state examination for the teaching degree Realschule Biology (2009)
First state examination for the teaching degree Realschule Chemistry (2009)
First state examination for the teaching degree Realschule Geography (2009)
First state examination for the teaching degree Realschule Protestant Theology (2009)
First state examination for the teaching degree Realschule French Studies (2009)
First state examination for the teaching degree Realschule German (2009)
First state examination for the teaching degree Realschule History (2009)
First state examination for the teaching degree Realschule Computer Science (2012)
First state examination for the teaching degree Realschule Catholic Theology (2009)
First state examination for the teaching degree Realschule Mathematics (2009)
First state examination for the teaching degree Realschule Music (2009)
First state examination for the teaching degree Realschule Physics (2009)
First state examination for the teaching degree Realschule Science of Sport (2009)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Secondary Education (2009)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2009)
First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2013)
First state examination for the teaching degree Mittelschule English (2013)
First state examination for the teaching degree Mittelschule Biology (2013)
First state examination for the teaching degree Mittelschule Chemistry (2013)
First state examination for the teaching degree Mittelschule Geography (2013)
First state examination for the teaching degree Mittelschule Protestant Theology (2013)
First state examination for the teaching degree Mittelschule German (2013)
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First state examination for the teaching degree Mittelschule Catholic Theology (2013)
First state examination for the teaching degree Mittelschule Mathematics (2013)
First state examination for the teaching degree Mittelschule Physics (2013)
First state examination for the teaching degree Mittelschule Social Science (2013)
First state examination for the teaching degree Mittelschule Science of Sport (2013)
Bachelor's degree (1 major) Biochemistry (2015)
First state examination for the teaching degree Grundschule English (2015)
First state examination for the teaching degree Grundschule Biology (2015)
First state examination for the teaching degree Grundschule Chemistry (2015)
First state examination for the teaching degree Grundschule Geography (2015)

First state examination for the teaching degree Grundschule German (2015)
First state examination for the teaching degree Grundschule Catholic Theology (2015)
First state examination for the teaching degree Grundschule Mathematics (2015)
First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2015)
First state examination for the teaching degree Grundschule Physics (2015)
First state examination for the teaching degree Grundschule Social Science (2015)
First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Chemistry (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Geography (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in German (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in History (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Catholic Theology (Primary School) (2015)
First state examination for the teaching degree Grundschule Art Education in Primary School (2015)
First state examination for the teaching degree Grundschule Didactics in Science of Sport (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Mathematics (Primary School) (2015)
First state examination for the teaching degree Grundschule Music Education in Primary School (2015)
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Social Science (Primary School) (2015)
First state examination for the teaching degree Grundschule Science of Sport (2015)
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First state examination for the teaching degree Realschule Protestant Theology (2015)
First state examination for the teaching degree Realschule French Studies (2015)
First state examination for the teaching degree Realschule German (2015)
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First state examination for the teaching degree Realschule Catholic Theology (2015)
First state examination for the teaching degree Realschule Mathematics (2015)
First state examination for the teaching degree Realschule Physics (2015)
First state examination for the teaching degree Realschule Science of Sport (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2015)
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First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2015)
First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Ergonomics (Teaching at the German Mittelschule) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Geography (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Middle School) (2015)

First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Middle School) (2015)
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First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2015)
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First state examination for the teaching degree Grundschule Protestant Theology (2015)
First state examination for the teaching degree Grundschule Music (2015)
First state examination for the teaching degree Grundschule Didactics in Protestant Theology (Primary School) (2015)
First state examination for the teaching degree Realschule Music (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Primary School) (2015)
First state examination for the teaching degree Mittelschule Music (2015)

First state examination for the teaching degree Realschule French Studies (2016)
First state examination for the teaching degree Grundschule English (2016)
First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2016)
First state examination for the teaching degree Realschule English (2016)
First state examination for the teaching degree Mittelschule English (2016)
First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2016)
First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2016)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)
Bachelor's degree (1 major) Biochemistry (2017)
First state examination for the teaching degree Grundschule Physics (2018)
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018)
First state examination for the teaching degree Realschule Physics (2018)
First state examination for the teaching degree Mittelschule Physics (2018)
First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018)
First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
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First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2020 (Prüfungsordnungsversion 2015))
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First state examination for the teaching degree Mittelschule Protestant Theology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Protestant Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Geography (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule History (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2020 (Prüfungsordnungsversion 2015))
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First state examination for the teaching degree Mittelschule Art Education in Middle School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Science of Sport (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Science of Sport (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Music (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Music Education in Middle School (2020 (Prüfungsordnungsversion 2015))
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First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016))
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First state examination for the teaching degree Sonderpädagogik Didactics in Geography (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2020 (Prüfungsordnungsversion 2015))
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First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020)
First state examination for the teaching degree Grundschule Physics (2020)
First state examination for the teaching degree Realschule Physics (2020)
First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020)
First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020)
First state examination for the teaching degree Mittelschule Physics (2020)
First state examination for the teaching degree Grundschule Political and Social Studies (2020)
First state examination for the teaching degree Grundschule Didactics in Political and Social Studies (Primary School) (2020)

First state examination for the teaching degree Sonderpädagogik MS-Didaktik Career and Economics (2020)
First state examination for the teaching degree Sonderpädagogik Didactics in Political and Social Studies (Secondary School) (2020)
First state examination for the teaching degree Mittelschule MS-Didaktik Career and Economics (2020)
First state examination for the teaching degree Mittelschule Didactics in Political and Social Studies (Secondary School) (2020)
First state examination for the teaching degree Mittelschule Political and Social Studies (2020)
First state examination for the teaching degree Grundschule History (2021)
First state examination for the teaching degree Realschule History (2021)
First state examination for the teaching degree Mittelschule History (2021)
First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2021)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2021)
Bachelor's degree (1 major) Biochemistry (2022)
First state examination for the teaching degree Realschule English (2023)
First state examination for the teaching degree Grundschule English (2023)
First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2023)
First state examination for the teaching degree Mittelschule English (2023)
First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2023)
First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2023)
First state examination for the teaching degree Realschule Geography (2023)
First state examination for the teaching degree Grundschule Geography (2023)
First state examination for the teaching degree Mittelschule Geography (2023)
First state examination for the teaching degree Grundschule German (2024)
First state examination for the teaching degree Realschule German (2024)
First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2024)
First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2024)
First state examination for the teaching degree Grundschule Didactics in German (Primary School) (2024)
First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2024)
First state examination for the teaching degree Mittelschule German (2024)
First state examination for the teaching degree Grundschule Music Education in Primary School (2024)
First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2024)
First state examination for the teaching degree Mittelschule Music Education in Middle School (2024)
First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2024)
First state examination for the teaching degree Mittelschule MS-Didaktik Career and Economics (2024)
First state examination for the teaching degree Sonderpädagogik MS-Didaktik Career and Economics (2024)
First state examination for the teaching degree Grundschule History (2024)
First state examination for the teaching degree Realschule History (2024)
First state examination for the teaching degree Mittelschule History (2024)
First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2024)
First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2024)
First state examination for the teaching degree Grundschule Didactics in History (Primary School) (2024)
First state examination for the teaching degree Grundschule Art Education in Primary School (2024)
First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2024)
First state examination for the teaching degree Sonderpädagogik Art Education in Middle School (2024)
First state examination for the teaching degree Mittelschule Art Education in Middle School (2024)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Module title	Abbreviation
Practical course of Physical Chemistry for Biochemistry Students	08-PCP-BC-152-m01

Module coordinator	Module offered by
lecturer of lecture "Thermodynamik, Kinetik, Elektrochemie"	Institute of Physical and Theoretical Chemistry

ECTS	Method of grading	Only after succ. compl. of module(s)
6	(not) successfully completed	08-PC-MBS or 08-PC-TKE

Duration	Module level	Other prerequisites
1 semester	undergraduate	--

Contents

This module gives students the opportunity to apply in practice the knowledge they have gained through the related lecture(s). After a safety briefing, the students autonomously conduct experiments in the laboratory. In addition to those experiments, students will be expected to take oral tests and write lab reports to demonstrate their knowledge.

Intended learning outcomes

Students are able to connect the theoretical principles of thermodynamics, kinetics, electrochemistry and spectroscopy with practical laboratory experiments. They are able to analyse the resulting measurements.

Courses (type, number of weekly contact hours, language — if other than German)

P (4)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations)
Language of assessment: German and/or English
Assessment offered: Once a year, winter semester

Allocation of places

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Additional information

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Workload

180 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Symmetry, chemical bonding and light			08-PC-SBL-152-m01
Module coordinator		**Module offered by**	
lecturer of lecture "Symmetrie, chemische Bindung and Licht"		Institute of Physical and Theoretical Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
9	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
2 semester	undergraduate	--	

Contents

This module provides an introduction to the symmetry of molecules. It focuses on group theory, symmetry operations, point groups, character tables and selection rules. The module deals with the chemical bond based on the qualitative MO theory and gives an introduction to the fundamentals of computational chemistry. It also gives students the opportunity to analyse the interactions between symmetry, chemical bonding and light in detail.

Intended learning outcomes

Students are able to analyse the symmetry of molecules. They are able to draw conclusions about the spectroscopic properties of a particular molecule from the symmetry of that molecule.

Courses (type, number of weekly contact hours, language — if other than German)

V (3) + Ü (2) + V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 90 to 180 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or
d) log (approx. 20 pages) or
e) presentation (approx. 30 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

270 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Mathematics (2023)

Module title	Abbreviation
Thermodynamics, Kinetics, Electrochemistry	08-PC-TKE-152-m01

Module coordinator	Module offered by
lecturer of lecture "Thermodynamik, Kinetik, Elektrochemie"	Institute of Physical and Theoretical Chemistry

ECTS	Method of grading	Only after succ. compl. of module(s)
9	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	undergraduate	--

Contents

This module introduces students to the principles of thermodynamics. It focuses on the laws of thermodynamics, chemical equilibria, ideal and real gasses/solutions/mixed phases and electrochemistry. In addition to thermodynamic processes, it discusses the fundamental principles of kinetics.

Intended learning outcomes

Students are able to explain the laws of thermodynamics. They are able to describe thermodynamic aspects of solutions, gases, mixed phases and electrochemical reactions. Students are able to interpret the kinetic aspects of chemical reactions.

Courses (type, number of weekly contact hours, language — if other than German)

V (4) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 90 to 180 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or
d) log (approx. 20 pages) or
e) presentation (approx. 30 minutes)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

270 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 62 I Nr. 1

Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major) Functional Materials (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)

Bachelor's degree (1 major) Functional Materials (2021)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Functional Materials (2025)

Module title			Abbreviation
Quantum Chemistry			08-TC-152-m01
Module coordinator		**Module offered by**	
lecturer of lecture "Quantenchemie"		Institute of Physical and Theoretical Chemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module provides students with deeper insights into advanced topics in quantum chemistry. It focuses on spin, the Pauli principle, Slater determinants, the Hartree-Fock method, correlation energy, configuration interaction and excited states, the Born-Oppenheimer approximation and bonding models of H_2^+.

Intended learning outcomes

Students are able to describe excited states of molecules with the help of key concepts and models.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (1)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 90 to 180 minutes) or
b) oral examination of one candidate each (20 to 30 minutes) or
c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or
d) log (approx. 20 pages) or
e) presentation (approx. 30 minutes)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 22 II Nr. 1 h)
§ 22 II Nr. 2 f)
§ 22 II Nr. 3 f)

Module appears in

Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major) Functional Materials (2015)
First state examination for the teaching degree Grundschule Chemistry (2015)
First state examination for the teaching degree Realschule Chemistry (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
First state examination for the teaching degree Mittelschule Chemistry (2015)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)

Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)
First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015))
Bachelor's degree (1 major) Functional Materials (2021)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Mathematics (2023)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)
Bachelor's degree (1 major) Functional Materials (2025)

Module title			Abbreviation
Scientific lecturing 1			08-WIRE1-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module gives students the opportunity to teach a tutorial accompanying a lecture offered by the Faculty of Chemistry and Pharmacy and learn how to present and teach topics in an appropriate manner.

Intended learning outcomes

Students are able to teach students in earlier stages of their degrees and tailor their teaching to those students' needs.

Courses (type, number of weekly contact hours, language — if other than German)

T (0)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Wrap-up report (approx. 2 pages)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Scientific lecturing 2			08-WIRE2-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biochemie (Biochemistry)		Chair of Biochemistry	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module gives students the opportunity to teach a tutorial accompanying a lecture offered by the Faculty of Chemistry and Pharmacy and learn how to present and teach topics in an appropriate manner.

Intended learning outcomes

Students are able to teach students in earlier stages of their degrees and tailor their teaching to those students' needs.

Courses (type, number of weekly contact hours, language — if other than German)

T (o)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Wrap-up report (approx. 2 pages)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)

Module title			Abbreviation
Mathematics for students in Chemistry and Biochemistry			10-M-MCH-172-m01
Module coordinator		**Module offered by**	
Dean of Studies Mathematik (Mathematics)		Institute of Mathematics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Functional relations, differentiation and integration of functions in one variable, curve sketching, differentiation and integration of functions in several variables, curve integrals, matrix calculus, power series.

Intended learning outcomes

The student is able to recognise and phrase questions from natural sciences as mathematical problems, apply basic mathematical methods to them and interpret the results.

Courses (type, number of weekly contact hours, language — if other than German)

V (3) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 90 to 120 minutes) and written exercises (approx. 25)

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major) Biochemistry (2022)
exchange program Mathematics (2023)

Module title			Abbreviation
Introduction to Physics for Students of other Disciplines			11-EFNF-152-m01
Module coordinator		**Module offered by**	
Managing Director of the Institute of Applied Physics		Faculty of Physics and Astronomy	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
7	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
2 semester	undergraduate	--	

Contents

Fundamentals of mechanics, vibration theory, thermodynamics, optics, science of electricity, atomic and nuclear physics.

Intended learning outcomes

The students are able to identify fundamental physical contexts. They are able to assign them to corresponding fields in physics. They are able to apply simple formulae in order to analyse and evaluate these contexts.

Courses (type, number of weekly contact hours, language — if other than German)

V (4) + V (3)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (60 to 120 minutes)

Allocation of places

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Additional information

according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter d) and No. I 1st letter d) of annex 1 to the APOLmCh and No. 4 of annex 2 to the APOLmCh

Workload

210 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biology (2011)
Bachelor's degree (1 major) Chemistry (2010)
Bachelor's degree (1 major) Psychology (2010)
Bachelor's degree (1 major, 1 minor) Pedagogy (2013)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2013)
Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2008)
Bachelor's degree (2 majors) Special Education (2009)
Magister Theologiae Catholic Theology (2013)
First state examination for the teaching degree Gymnasium English (2009)
First state examination for the teaching degree Gymnasium Biology (2009)
First state examination for the teaching degree Gymnasium Chemistry (2009)
First state examination for the teaching degree Gymnasium Geography (2009)
First state examination for the teaching degree Gymnasium French Studies (2009)
First state examination for the teaching degree Gymnasium German (2009)
First state examination for the teaching degree Gymnasium History (2009)
First state examination for the teaching degree Gymnasium Greek Philology (2009)

First state examination for the teaching degree Gymnasium Computer Science (2009)
First state examination for the teaching degree Gymnasium Italian Studies (2009)
First state examination for the teaching degree Gymnasium Catholic Theology (2009)
First state examination for the teaching degree Gymnasium Latin Philology (2009)
First state examination for the teaching degree Gymnasium Mathematics (2012)
First state examination for the teaching degree Gymnasium Mathematics (2009)
First state examination for the teaching degree Gymnasium Music (2009)
First state examination for the teaching degree Gymnasium Physics (2009)
First state examination for the teaching degree Gymnasium Russian (2009)
First state examination for the teaching degree Gymnasium Social Science (2009)
First state examination for the teaching degree Gymnasium Spanish Studies (2009)
First state examination for the teaching degree Gymnasium Science of Sport (2009)
First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2009)
Bachelor's degree (2 majors) English and American Studies (2009)
Bachelor's degree (2 majors) German Language and Literature (2013)
Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Geography (2015)
Bachelor's degree (1 major) Computer Science (2015)
Bachelor's degree (1 major) Food Chemistry (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Musicology (2015)
Bachelor's degree (1 major) Physics (2015)
Bachelor's degree (1 major) Psychology (2015)
Bachelor's degree (1 major) Business Management and Economics (2015)
Bachelor's degree (1 major) Nanostructure Technology (2015)
Bachelor's degree (1 major) Biomedicine (2015)
Bachelor's degree (1 major) Music Education (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major) Political and Social Studies (2015)
Bachelor's degree (1 major) Functional Materials (2015)
Bachelor's degree (1 major) Academic Speech Therapy (2015)
Bachelor's degree (1 major) Indology/South Asian Studies (2015)
Bachelor's degree (1 major, 1 minor) Egyptology (2015)
Bachelor's degree (1 major, 1 minor) Pedagogy (2015)
Bachelor's degree (1 major, 1 minor) History (2015)
Bachelor's degree (1 major, 1 minor) Musicology (2015)
Bachelor's degree (1 major, 1 minor) Philosophy (2015)
Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015)
Bachelor's degree (1 major, 1 minor) Ancient World (2015)
Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015)
Bachelor's degree (1 major, 1 minor) Theological Studies (2015)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015)
Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015)
Bachelor's degree (1 major, 1 minor) German Language and Literature (2015)
Bachelor's degree (2 majors) Egyptology (2015)
Bachelor's degree (2 majors) Pedagogy (2015)
Bachelor's degree (2 majors) Protestant Theology (2015)
Bachelor's degree (2 majors) Musicology (2015)
Bachelor's degree (2 majors) Philosophy (2015)
Bachelor's degree (2 majors) Special Education (2015)
Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015)
Bachelor's degree (2 majors) Latin Philology (2015)

Bachelor's degree (2 majors) Music Education (2015)
Bachelor's degree (2 majors) Philosophy and Religion (2015)
Bachelor's degree (2 majors) Theological Studies (2015)
Bachelor's degree (2 majors) Political and Social Studies (2015)
Bachelor's degree (2 majors) Russian Language and Culture (2015)
Bachelor's degree (2 majors) Greek Philology (2015)
Bachelor's degree (2 majors) European Ethnology (2015)
Bachelor's degree (2 majors) Indology/South Asian Studies (2015)
First state examination for the teaching degree Gymnasium English (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
First state examination for the teaching degree Gymnasium Geography (2015)
First state examination for the teaching degree Gymnasium French Studies (2015)
First state examination for the teaching degree Gymnasium German (2015)
First state examination for the teaching degree Gymnasium History (2015)
First state examination for the teaching degree Gymnasium Greek Philology (2015)
First state examination for the teaching degree Gymnasium Computer Science (2015)
First state examination for the teaching degree Gymnasium Italian Studies (2015)
First state examination for the teaching degree Gymnasium Catholic Theology (2015)
First state examination for the teaching degree Gymnasium Latin Philology (2015)
First state examination for the teaching degree Gymnasium Mathematics (2015)
First state examination for the teaching degree Gymnasium Physics (2015)
First state examination for the teaching degree Gymnasium Russian (2015)
First state examination for the teaching degree Gymnasium Social Science (2015)
First state examination for the teaching degree Gymnasium Spanish Studies (2015)
First state examination for the teaching degree Gymnasium Science of Sport (2015)
Bachelor's degree (2 majors) Geography (2015)
Bachelor's degree (2 majors) French Studies (2015)
Bachelor's degree (2 majors) History (2015)
Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015)
Bachelor's degree (2 majors) German Language and Literature (2015)
Bachelor's degree (1 major) Mathematical Physics (2016)
First state examination for the teaching degree Gymnasium Music (2015)
First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2015)
Bachelor's degree (1 major, 1 minor) French Studies (2016)
Bachelor's degree (2 majors) French Studies (2016)
Bachelor's degree (1 major, 1 minor) Italian Studies (2016)
Bachelor's degree (2 majors) Italian Studies (2016)
Bachelor's degree (1 major, 1 minor) Spanish Studies (2016)
Bachelor's degree (2 majors) Spanish Studies (2016)
Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016)
Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016)
Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016)
Bachelor's degree (1 major) Business Information Systems (2016)
First state examination for the teaching degree Gymnasium French Studies (2016)
First state examination for the teaching degree Gymnasium Italian Studies (2016)
First state examination for the teaching degree Gymnasium Spanish Studies (2016)
Bachelor's degree (1 major) Games Engineering (2016)
Bachelor's degree (1 major, 1 minor) English and American Studies (2016)
Bachelor's degree (2 majors) English and American Studies (2016)
First state examination for the teaching degree Gymnasium English (2016)
Bachelor's degree (1 major) Media Communication (2016)
Bachelor's degree (1 major) Food Chemistry (2016)

Bachelor's degree (1 major, 1 minor) Digital Humanities (2016)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major, 1 minor) Geography (2017)
Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017)
Bachelor's degree (2 majors) History of Medieval and Modern Art (2017)
Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017)
Bachelor's degree (1 major) Aerospace Computer Science (2017)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2017)
Bachelor's degree (1 major) Economathematics (2017)
Bachelor's degree (1 major) Games Engineering (2017)
Bachelor's degree (1 major) Computer Science (2017)
First state examination for the teaching degree Gymnasium Greek Philology (2018)
Bachelor's degree (1 major) Media Communication (2018)
Bachelor's degree (1 major) Biomedicine (2018)
Bachelor's degree (1 major) Human-Computer Systems (2018)
Bachelor's degree (2 majors) Classical Archaeology (2018)
Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2018)
Bachelor's degree (2 majors) Digital Humanities (2018)
First state examination for the teaching degree Gymnasium Physics (2018)
Bachelor's degree (1 major) Computer Science (2019)
First state examination for the teaching degree Gymnasium Mathematics (2019)
Bachelor's degree (1 major, 1 minor) English and American Studies (2019)
Bachelor's degree (1 major) Indology/South Asian Studies (2019)
Bachelor's degree (1 major) Business Information Systems (2019)
Bachelor's degree (2 majors) Indology/South Asian Studies (2019)
Bachelor's degree (1 major) Business Management and Economics (2019)
Bachelor's degree (1 major) Modern China (2019)
Bachelor's degree (1 major) Food Chemistry (2019)
Bachelor's degree (1 major) Biomedicine (2020)
Bachelor's degree (1 major) Pedagogy (2020)
Bachelor's degree (1 major) Political and Social Studies (2020)
Bachelor's degree (1 major) Business Information Systems (2020)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020)
Bachelor's degree (2 majors) European Ethnology (2020)
Bachelor's degree (2 majors) Political and Social Studies (2020)
Bachelor's degree (2 majors) Special Education (2020)
Bachelor's degree (1 major) Physics (2020)
Bachelor's degree (1 major) Nanostructure Technology (2020)
Bachelor's degree (1 major) Mathematical Physics (2020)
Bachelor's degree (1 major) Aerospace Computer Science (2020)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2020)
First state examination for the teaching degree Gymnasium Physics (2020)
Bachelor's degree (1 major, 1 minor) Pedagogy (2020)
Bachelor's degree (2 majors) Pedagogy (2020)
First state examination for the teaching degree Gymnasium Political and Social Studies (2020)
Bachelor's degree (1 major) Psychology (2020)
Bachelor's degree (1 major) Biology (2021)
Magister Theologiae Catholic Theology (2021)
Bachelor's degree (2 majors) History (2021)
Bachelor's degree (1 major, 1 minor) History (2021)

First state examination for the teaching degree Gymnasium History (2021)
Bachelor's degree (1 major) Media Communication (2021)
Bachelor's degree (2 majors) Theological Studies (2021)
Bachelor's degree (1 major, 1 minor) Theological Studies (2021)
Bachelor's degree (1 major, 1 minor) English and American Studies (2021)
Bachelor's degree (2 majors) English and American Studies (2021)
First state examination for the teaching degree Gymnasium English (2021)
Bachelor's degree (1 major) Functional Materials (2021)
First state examination for the teaching degree Gymnasium Philosophy and Ethics (2021)
Bachelor's degree (1 major) Computer Science und Sustainability (2021)
Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021)
Bachelor's degree (1 major) Food Chemistry (2021)
Bachelor's degree (1 major) Quantum Technology (2021)
Bachelor's degree (2 majors) Special Education (2021)
Bachelor's degree (1 major) Business Information Systems (2021)
Bachelor's degree (1 major) Economathematics (2021)
Bachelor's degree (1 major) Business Management and Economics (2021)
Bachelor's degree (1 major) Human-Computer Systems (2022)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2022)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Biology (2022)
Bachelor's degree (1 major) Economathematics (2022)
Bachelor's degree (1 major) Mathematical Data Science (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)
First state examination for the teaching degree Gymnasium Philosophy and Ethics (2022)
Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022)
Bachelor's degree (1 major, 1 minor) Ancient World (2022)
Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022)
Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022)
First state examination for the teaching degree Gymnasium Russian (2023)
First state examination for the teaching degree Gymnasium Mathematics (2023)
First state examination for the teaching degree Gymnasium English (2023)
First state examination for the teaching degree Gymnasium Geography (2023)
Bachelor's degree (1 major) European Law (2023)
Bachelor's degree (1 major, 1 minor) English and American Studies (2023)
Bachelor's degree (2 majors) English and American Studies (2023)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Business Information Systems (2023)
Bachelor's degree (1 major) Economathematics (2023)
Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023)
Bachelor's degree (2 majors) History of Medieval and Modern Art (2023)
Bachelor's degree (2 majors) Special Education (2023)
Bachelor's degree (1 major) Business Management and Economics (2023)
Bachelor's degree (1 major) Geography (2023)
Bachelor's degree (2 majors) Geography (2023)
Bachelor's degree (1 major, 1 minor) Geography (2023)
Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023)
First state examination for the teaching degree Gymnasium German (2024)
Bachelor's degree (1 major) Mathematical Physics (2024)
Bachelor's degree (2 majors) German Language and Literature (2024)
Bachelor's degree (1 major, 1 minor) German Language and Literature (2024)
Bachelor's degree (1 major) Music Education (2024)

Bachelor's degree (2 majors) Music Education (2024)
Bachelor's degree (1 major, 1 minor) Music Education (2024)
Bachelor's degree (1 major) Indology/South Asian Studies (2024)
Bachelor's degree (2 majors) Indology/South Asian Studies (2024)
Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024)
Bachelor's degree (1 major, 1 minor) Ancient World (2024)
Bachelor's degree (2 majors) Digital Humanities (2024)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2024)
Bachelor's degree (1 major) Midwifery (2024)
Bachelor's degree (2 majors) Greek Philology (2024)
Bachelor's degree (2 majors) Latin Philology (2024)
First state examination for the teaching degree Gymnasium Latin Philology (2024)
Bachelor's degree (1 major) Business Information Systems (2024)
Bachelor's degree (1 major) Economathematics (2024)
Bachelor's degree (1 major) Business Management and Economics (2024)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)
First state examination for the teaching degree Gymnasium English (2024)
First state examination for the teaching degree Gymnasium History (2024)
First state examination for the teaching degree Gymnasium Greek Philology (2024)
Bachelor's degree (1 major) Human-Computer-Interaction (2024)
Bachelor's degree (2 majors) Art Education (2024)
Bachelor's degree (1 major) Digital Business & Data Science (2024)
Bachelor's degree (1 major) Classics (2024)
Bachelor's degree (1 major) Diversity, Ethics and Religions (2024)
Bachelor's degree (1 major) Functional Materials (2025)
Bachelor's degree (1 major) (2025)
Bachelor's degree (1 major) Food Chemistry (2025)
Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025)
Bachelor's degree (1 major) Pedagogy (2025)
Bachelor's degree (2 majors) Pedagogy (2025)
Bachelor's degree (1 major) Economathematics (2025)
Bachelor's degree (1 major) Academic Speech Therapy (2025)
Bachelor's degree (1 major, 1 minor) Pedagogy (2025)
Bachelor's degree (1 major) Games Engineering (2025)

Module title			Abbreviation
Laboratory Course Physics for Students of other Disciplines			11-PFNF-152-m01
Module coordinator		**Module offered by**	
Managing Director of the Institute of Applied Physics		Faculty of Physics and Astronomy	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Simple experiments in the fields of mechanics, vibration theory, thermodynamics, optics, X-rays, nuclear magnetic resonance atomic and nuclear physics, imaging methods.

Intended learning outcomes

The students have recognised and understood physical contexts on the basis of the implementation of own experiments. They can conduct simple experiments in the laboratory. They are able to identify and assess sources of errors in experiments. They are able to compile a protocol for experimental procedures. They have a basic understanding of physical phenomena and know the basic ideas and ways of functioning of different measuring and imaging methods as well as their applications, especially in the field of biomedicine.

Courses (type, number of weekly contact hours, language — if other than German)

P (4)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) practical assignment with oral test (approx. 15 minutes, during experiments) and b) written examination (approx. 90 minutes).
Each experiment comprises preparation, performance and evaluation. Test as well as performance of experiments can each be repeated once.

Allocation of places

Only as part of pool of general transferable skills (ASQ): 10 places (lottery)

Additional information

according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter d) and No. I 1st letter d) of annex 1 to the APOLmCh and No. 4 of annex 2 to the APOLmCh

Workload

90 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor's degree (1 major) Biology (2011)
Bachelor's degree (1 major) Chemistry (2010)
Bachelor's degree (1 major) Psychology (2010)
Bachelor's degree (1 major, 1 minor) Pedagogy (2013)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2013)
Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2008)
Bachelor's degree (2 majors) Special Education (2009)
Magister Theologiae Catholic Theology (2013)
First state examination for the teaching degree Gymnasium English (2009)
First state examination for the teaching degree Gymnasium Biology (2009)

First state examination for the teaching degree Gymnasium Chemistry (2009)
First state examination for the teaching degree Gymnasium Geography (2009)
First state examination for the teaching degree Gymnasium French Studies (2009)
First state examination for the teaching degree Gymnasium German (2009)
First state examination for the teaching degree Gymnasium History (2009)
First state examination for the teaching degree Gymnasium Greek Philology (2009)
First state examination for the teaching degree Gymnasium Computer Science (2009)
First state examination for the teaching degree Gymnasium Italian Studies (2009)
First state examination for the teaching degree Gymnasium Catholic Theology (2009)
First state examination for the teaching degree Gymnasium Latin Philology (2009)
First state examination for the teaching degree Gymnasium Mathematics (2012)
First state examination for the teaching degree Gymnasium Mathematics (2009)
First state examination for the teaching degree Gymnasium Music (2009)
First state examination for the teaching degree Gymnasium Physics (2009)
First state examination for the teaching degree Gymnasium Russian (2009)
First state examination for the teaching degree Gymnasium Social Science (2009)
First state examination for the teaching degree Gymnasium Spanish Studies (2009)
First state examination for the teaching degree Gymnasium Science of Sport (2009)
First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2009)
Bachelor's degree (2 majors) English and American Studies (2009)
Bachelor's degree (2 majors) German Language and Literature (2013)
Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Geography (2015)
Bachelor's degree (1 major) Computer Science (2015)
Bachelor's degree (1 major) Food Chemistry (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Musicology (2015)
Bachelor's degree (1 major) Physics (2015)
Bachelor's degree (1 major) Psychology (2015)
Bachelor's degree (1 major) Business Management and Economics (2015)
Bachelor's degree (1 major) Nanostructure Technology (2015)
Bachelor's degree (1 major) Biomedicine (2015)
Bachelor's degree (1 major) Music Education (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major) Political and Social Studies (2015)
Bachelor's degree (1 major) Functional Materials (2015)
Bachelor's degree (1 major) Academic Speech Therapy (2015)
Bachelor's degree (1 major) Indology/South Asian Studies (2015)
Bachelor's degree (1 major, 1 minor) Egyptology (2015)
Bachelor's degree (1 major, 1 minor) Pedagogy (2015)
Bachelor's degree (1 major, 1 minor) History (2015)
Bachelor's degree (1 major, 1 minor) Musicology (2015)
Bachelor's degree (1 major, 1 minor) Philosophy (2015)
Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015)
Bachelor's degree (1 major, 1 minor) Ancient World (2015)
Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015)
Bachelor's degree (1 major, 1 minor) Theological Studies (2015)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015)
Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015)
Bachelor's degree (1 major, 1 minor) German Language and Literature (2015)
Bachelor's degree (2 majors) Egyptology (2015)
Bachelor's degree (2 majors) Pedagogy (2015)

Bachelor's degree (2 majors) Protestant Theology (2015)
Bachelor's degree (2 majors) Musicology (2015)
Bachelor's degree (2 majors) Philosophy (2015)
Bachelor's degree (2 majors) Special Education (2015)
Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015)
Bachelor's degree (2 majors) Latin Philology (2015)
Bachelor's degree (2 majors) Music Education (2015)
Bachelor's degree (2 majors) Philosophy and Religion (2015)
Bachelor's degree (2 majors) Theological Studies (2015)
Bachelor's degree (2 majors) Political and Social Studies (2015)
Bachelor's degree (2 majors) Russian Language and Culture (2015)
Bachelor's degree (2 majors) Greek Philology (2015)
Bachelor's degree (2 majors) European Ethnology (2015)
Bachelor's degree (2 majors) Indology/South Asian Studies (2015)
First state examination for the teaching degree Gymnasium English (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
First state examination for the teaching degree Gymnasium Geography (2015)
First state examination for the teaching degree Gymnasium French Studies (2015)
First state examination for the teaching degree Gymnasium German (2015)
First state examination for the teaching degree Gymnasium History (2015)
First state examination for the teaching degree Gymnasium Greek Philology (2015)
First state examination for the teaching degree Gymnasium Computer Science (2015)
First state examination for the teaching degree Gymnasium Italian Studies (2015)
First state examination for the teaching degree Gymnasium Catholic Theology (2015)
First state examination for the teaching degree Gymnasium Latin Philology (2015)
First state examination for the teaching degree Gymnasium Mathematics (2015)
First state examination for the teaching degree Gymnasium Physics (2015)
First state examination for the teaching degree Gymnasium Russian (2015)
First state examination for the teaching degree Gymnasium Social Science (2015)
First state examination for the teaching degree Gymnasium Spanish Studies (2015)
First state examination for the teaching degree Gymnasium Science of Sport (2015)
Bachelor's degree (2 majors) Geography (2015)
Bachelor's degree (2 majors) French Studies (2015)
Bachelor's degree (2 majors) History (2015)
Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015)
Bachelor's degree (2 majors) German Language and Literature (2015)
Bachelor's degree (1 major) Mathematical Physics (2016)
First state examination for the teaching degree Gymnasium Music (2015)
First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2015)
Bachelor's degree (1 major, 1 minor) French Studies (2016)
Bachelor's degree (2 majors) French Studies (2016)
Bachelor's degree (1 major, 1 minor) Italian Studies (2016)
Bachelor's degree (2 majors) Italian Studies (2016)
Bachelor's degree (1 major, 1 minor) Spanish Studies (2016)
Bachelor's degree (2 majors) Spanish Studies (2016)
Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016)
Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016)
Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016)
Bachelor's degree (1 major) Business Information Systems (2016)
First state examination for the teaching degree Gymnasium French Studies (2016)
First state examination for the teaching degree Gymnasium Italian Studies (2016)
First state examination for the teaching degree Gymnasium Spanish Studies (2016)

Bachelor's degree (1 major) Games Engineering (2016)
Bachelor's degree (1 major, 1 minor) English and American Studies (2016)
Bachelor's degree (2 majors) English and American Studies (2016)
First state examination for the teaching degree Gymnasium English (2016)
Bachelor's degree (1 major) Media Communication (2016)
Bachelor's degree (1 major) Food Chemistry (2016)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2016)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major, 1 minor) Geography (2017)
Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017)
Bachelor's degree (2 majors) History of Medieval and Modern Art (2017)
Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017)
Bachelor's degree (1 major) Aerospace Computer Science (2017)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2017)
Bachelor's degree (1 major) Economathematics (2017)
Bachelor's degree (1 major) Games Engineering (2017)
Bachelor's degree (1 major) Computer Science (2017)
First state examination for the teaching degree Gymnasium Greek Philology (2018)
Bachelor's degree (1 major) Media Communication (2018)
Bachelor's degree (1 major) Biomedicine (2018)
Bachelor's degree (1 major) Human-Computer Systems (2018)
Bachelor's degree (2 majors) Classical Archaeology (2018)
Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2018)
Bachelor's degree (2 majors) Digital Humanities (2018)
First state examination for the teaching degree Gymnasium Physics (2018)
Bachelor's degree (1 major) Computer Science (2019)
First state examination for the teaching degree Gymnasium Mathematics (2019)
Bachelor's degree (1 major, 1 minor) English and American Studies (2019)
Bachelor's degree (1 major) Indology/South Asian Studies (2019)
Bachelor's degree (1 major) Business Information Systems (2019)
Bachelor's degree (2 majors) Indology/South Asian Studies (2019)
Bachelor's degree (1 major) Business Management and Economics (2019)
Bachelor's degree (1 major) Modern China (2019)
Bachelor's degree (1 major) Food Chemistry (2019)
Module studies (Bachelor) Orientierungsstudien (2020)
Bachelor's degree (1 major) Biomedicine (2020)
Bachelor's degree (1 major) Pedagogy (2020)
Bachelor's degree (1 major) Political and Social Studies (2020)
Bachelor's degree (1 major) Business Information Systems (2020)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020)
Bachelor's degree (2 majors) European Ethnology (2020)
Bachelor's degree (2 majors) Political and Social Studies (2020)
Bachelor's degree (2 majors) Special Education (2020)
Bachelor's degree (1 major) Physics (2020)
Bachelor's degree (1 major) Nanostructure Technology (2020)
Bachelor's degree (1 major) Mathematical Physics (2020)
Bachelor's degree (1 major) Aerospace Computer Science (2020)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2020)
First state examination for the teaching degree Gymnasium Physics (2020)
Bachelor's degree (1 major, 1 minor) Pedagogy (2020)

Bachelor's degree (2 majors) Pedagogy (2020)
First state examination for the teaching degree Gymnasium Political and Social Studies (2020)
Bachelor's degree (1 major) Psychology (2020)
Bachelor's degree (1 major) Biology (2021)
Magister Theologiae Catholic Theology (2021)
Bachelor's degree (2 majors) History (2021)
Bachelor's degree (1 major, 1 minor) History (2021)
First state examination for the teaching degree Gymnasium History (2021)
Bachelor's degree (1 major) Media Communication (2021)
Bachelor's degree (2 majors) Theological Studies (2021)
Bachelor's degree (1 major, 1 minor) Theological Studies (2021)
Bachelor's degree (1 major, 1 minor) English and American Studies (2021)
Bachelor's degree (2 majors) English and American Studies (2021)
First state examination for the teaching degree Gymnasium English (2021)
Bachelor's degree (1 major) Functional Materials (2021)
First state examination for the teaching degree Gymnasium Philosophy and Ethics (2021)
Bachelor's degree (1 major) Computer Science und Sustainability (2021)
Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021)
Bachelor's degree (1 major) Food Chemistry (2021)
Bachelor's degree (1 major) Quantum Technology (2021)
Bachelor's degree (2 majors) Special Education (2021)
Bachelor's degree (1 major) Business Information Systems (2021)
Bachelor's degree (1 major) Economathematics (2021)
Bachelor's degree (1 major) Business Management and Economics (2021)
Bachelor's degree (1 major) Human-Computer Systems (2022)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2022)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Biology (2022)
Bachelor's degree (1 major) Economathematics (2022)
Bachelor's degree (1 major) Mathematical Data Science (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)
First state examination for the teaching degree Gymnasium Philosophy and Ethics (2022)
Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022)
Bachelor's degree (1 major, 1 minor) Ancient World (2022)
Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022)
Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022)
First state examination for the teaching degree Gymnasium Russian (2023)
First state examination for the teaching degree Gymnasium Mathematics (2023)
First state examination for the teaching degree Gymnasium English (2023)
First state examination for the teaching degree Gymnasium Geography (2023)
Bachelor's degree (1 major) European Law (2023)
Bachelor's degree (1 major, 1 minor) English and American Studies (2023)
Bachelor's degree (2 majors) English and American Studies (2023)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Business Information Systems (2023)
Bachelor's degree (1 major) Economathematics (2023)
Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023)
Bachelor's degree (2 majors) History of Medieval and Modern Art (2023)
Bachelor's degree (2 majors) Special Education (2023)
Bachelor's degree (1 major) Business Management and Economics (2023)
Bachelor's degree (1 major) Geography (2023)
Bachelor's degree (2 majors) Geography (2023)

Bachelor's degree (1 major, 1 minor) Geography (2023)
Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023)
First state examination for the teaching degree Gymnasium German (2024)
Bachelor's degree (1 major) Mathematical Physics (2024)
Bachelor's degree (2 majors) German Language and Literature (2024)
Bachelor's degree (1 major, 1 minor) German Language and Literature (2024)
Bachelor's degree (1 major) Music Education (2024)
Bachelor's degree (2 majors) Music Education (2024)
Bachelor's degree (1 major, 1 minor) Music Education (2024)
Bachelor's degree (1 major) Indology/South Asian Studies (2024)
Bachelor's degree (2 majors) Indology/South Asian Studies (2024)
Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024)
Bachelor's degree (1 major, 1 minor) Ancient World (2024)
Bachelor's degree (2 majors) Digital Humanities (2024)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2024)
Bachelor's degree (1 major) Midwifery (2024)
Bachelor's degree (2 majors) Greek Philology (2024)
Bachelor's degree (2 majors) Latin Philology (2024)
First state examination for the teaching degree Gymnasium Latin Philology (2024)
Bachelor's degree (1 major) Business Information Systems (2024)
Bachelor's degree (1 major) Economathematics (2024)
Bachelor's degree (1 major) Business Management and Economics (2024)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)
First state examination for the teaching degree Gymnasium English (2024)
First state examination for the teaching degree Gymnasium History (2024)
First state examination for the teaching degree Gymnasium Greek Philology (2024)
Bachelor's degree (1 major) Human-Computer-Interaction (2024)
Bachelor's degree (2 majors) Art Education (2024)
Bachelor's degree (1 major) Digital Business & Data Science (2024)
Bachelor's degree (1 major) Classics (2024)
Bachelor's degree (1 major) Diversity, Ethics and Religions (2024)
Bachelor's degree (1 major) Functional Materials (2025)
Bachelor's degree (1 major) (2025)
Bachelor's degree (1 major) Food Chemistry (2025)
Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025)
Bachelor's degree (1 major) Pedagogy (2025)
Bachelor's degree (2 majors) Pedagogy (2025)
Bachelor's degree (1 major) Economathematics (2025)
Bachelor's degree (1 major) Academic Speech Therapy (2025)
Bachelor's degree (1 major, 1 minor) Pedagogy (2025)
Bachelor's degree (1 major) Games Engineering (2025)

Module title			Abbreviation
Information Literacy (Basic Level)			41-IK-BM-152-m01
Module coordinator		**Module offered by**	
head of University Library		University Library	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
2	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Information literacy in an academic context: search strategies, resources, reference management, copyright, etc.

Intended learning outcomes

Students know what information is needed for what purpose. They are able to locate information that is relevant within their discipline(s) and beyond in a variety of resources and to evaluate this information. They recognise the difference in quality between information they have retrieved from specific, restricted access resources (databases) and information they have found on the free web. The module aims to equip students with the skills needed to find information and literature that is relevant to the topics of their papers.

Courses (type, number of weekly contact hours, language — if other than German)

Ü (0.5)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

presentation (approx. 15 minutes) with written elaboration (approx. 2 pages)

Allocation of places

--

Additional information

Additional information on module duration: usually block taught during semester break.

Workload

60 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 99 I Nr. 1 (2 ECTS credits)

Module appears in

Bachelor's degree (1 major) Biology (2011)
Bachelor's degree (1 major) Chemistry (2010)
Bachelor's degree (1 major) Psychology (2010)
Bachelor's degree (1 major, 1 minor) Pedagogy (2013)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2013)
Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2008)
Bachelor's degree (2 majors) Special Education (2009)
Magister Theologiae Catholic Theology (2013)
First state examination for the teaching degree Grundschule English (2009)
First state examination for the teaching degree Grundschule Biology (2009)
First state examination for the teaching degree Grundschule Chemistry (2009)
First state examination for the teaching degree Grundschule Geography (2009)
First state examination for the teaching degree Grundschule Protestant Theology (2009)
First state examination for the teaching degree Grundschule German (2009)
First state examination for the teaching degree Grundschule History (2009)

First state examination for the teaching degree Grundschule History (2015)
First state examination for the teaching degree Grundschule Catholic Theology (2009)
First state examination for the teaching degree Grundschule Mathematics (2009)
First state examination for the teaching degree Grundschule Music (2009)
First state examination for the teaching degree Grundschule Physics (2009)
First state examination for the teaching degree Grundschule Social Science (2009)
First state examination for the teaching degree Grundschule Science of Sport (2009)
First state examination for the teaching degree Hauptschule English (2009)
First state examination for the teaching degree Hauptschule Biology (2009)
First state examination for the teaching degree Hauptschule Chemistry (2009)
First state examination for the teaching degree Hauptschule Geography (2009)
First state examination for the teaching degree Hauptschule Protestant Theology (2009)
First state examination for the teaching degree Hauptschule German (2009)
First state examination for the teaching degree Hauptschule History (2009)
First state examination for the teaching degree Hauptschule Catholic Theology (2009)
First state examination for the teaching degree Hauptschule Mathematics (2009)
First state examination for the teaching degree Hauptschule Music (2009)
First state examination for the teaching degree Hauptschule Physics (2009)
First state examination for the teaching degree Hauptschule Social Science (2009)
First state examination for the teaching degree Hauptschule Science of Sport (2009)
First state examination for the teaching degree Realschule English (2009)
First state examination for the teaching degree Realschule Biology (2009)
First state examination for the teaching degree Realschule Chemistry (2009)
First state examination for the teaching degree Realschule Geography (2009)
First state examination for the teaching degree Realschule Protestant Theology (2009)
First state examination for the teaching degree Realschule French Studies (2009)
First state examination for the teaching degree Realschule German (2009)
First state examination for the teaching degree Realschule History (2009)
First state examination for the teaching degree Realschule Computer Science (2012)
First state examination for the teaching degree Realschule Catholic Theology (2009)
First state examination for the teaching degree Realschule Mathematics (2009)
First state examination for the teaching degree Realschule Music (2009)
First state examination for the teaching degree Realschule Physics (2009)
First state examination for the teaching degree Realschule Science of Sport (2009)
First state examination for the teaching degree Gymnasium English (2009)
First state examination for the teaching degree Gymnasium Biology (2009)
First state examination for the teaching degree Gymnasium Chemistry (2009)
First state examination for the teaching degree Gymnasium Geography (2009)
First state examination for the teaching degree Gymnasium French Studies (2009)
First state examination for the teaching degree Gymnasium German (2009)
First state examination for the teaching degree Gymnasium History (2009)
First state examination for the teaching degree Gymnasium Greek Philology (2009)
First state examination for the teaching degree Gymnasium Computer Science (2009)
First state examination for the teaching degree Gymnasium Italian Studies (2009)
First state examination for the teaching degree Gymnasium Catholic Theology (2009)
First state examination for the teaching degree Gymnasium Latin Philology (2009)
First state examination for the teaching degree Gymnasium Mathematics (2012)
First state examination for the teaching degree Gymnasium Mathematics (2009)
First state examination for the teaching degree Gymnasium Music (2009)
First state examination for the teaching degree Gymnasium Physics (2009)
First state examination for the teaching degree Gymnasium Russian (2009)
First state examination for the teaching degree Gymnasium Social Science (2009)
First state examination for the teaching degree Gymnasium Spanish Studies (2009)

First state examination for the teaching degree Gymnasium Science of Sport (2009)
First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2009)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Secondary Education (2009)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2009)
First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2013)
First state examination for the teaching degree Mittelschule English (2013)
First state examination for the teaching degree Mittelschule Biology (2013)
First state examination for the teaching degree Mittelschule Chemistry (2013)
First state examination for the teaching degree Mittelschule Geography (2013)
First state examination for the teaching degree Mittelschule Protestant Theology (2013)
First state examination for the teaching degree Mittelschule German (2013)
First state examination for the teaching degree Mittelschule History (2013)
First state examination for the teaching degree Mittelschule Catholic Theology (2013)
First state examination for the teaching degree Mittelschule Mathematics (2013)
First state examination for the teaching degree Mittelschule Physics (2013)
First state examination for the teaching degree Mittelschule Social Science (2013)
First state examination for the teaching degree Mittelschule Science of Sport (2013)
Bachelor's degree (2 majors) English and American Studies (2009)
Bachelor's degree (2 majors) German Language and Literature (2013)
Bachelor's degree (1 major) Biochemistry (2015)
Bachelor's degree (1 major) Chemistry (2015)
Bachelor's degree (1 major) Geography (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Musicology (2015)
Bachelor's degree (1 major) Physics (2015)
Bachelor's degree (1 major) Psychology (2015)
Bachelor's degree (1 major) Business Management and Economics (2015)
Bachelor's degree (1 major) Nanostructure Technology (2015)
Bachelor's degree (1 major) Music Education (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major) Media Communication (2015)
Bachelor's degree (1 major) Political and Social Studies (2015)
Bachelor's degree (1 major) Functional Materials (2015)
Bachelor's degree (1 major) Academic Speech Therapy (2015)
Bachelor's degree (1 major) Indology/South Asian Studies (2015)
Bachelor's degree (1 major, 1 minor) Egyptology (2015)
Bachelor's degree (1 major, 1 minor) Pedagogy (2015)
Bachelor's degree (1 major, 1 minor) History (2015)
Bachelor's degree (1 major, 1 minor) Musicology (2015)
Bachelor's degree (1 major, 1 minor) Philosophy (2015)
Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015)
Bachelor's degree (1 major, 1 minor) Ancient World (2015)
Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015)
Bachelor's degree (1 major, 1 minor) Theological Studies (2015)
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015)
Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015)
Bachelor's degree (1 major, 1 minor) German Language and Literature (2015)
Bachelor's degree (2 majors) Egyptology (2015)
Bachelor's degree (2 majors) Pedagogy (2015)
Bachelor's degree (2 majors) Protestant Theology (2015)
Bachelor's degree (2 majors) Musicology (2015)
Bachelor's degree (2 majors) Philosophy (2015)
Bachelor's degree (2 majors) Special Education (2015)

Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015)
Bachelor's degree (2 majors) Latin Philology (2015)
Bachelor's degree (2 majors) Music Education (2015)
Bachelor's degree (2 majors) Philosophy and Religion (2015)
Bachelor's degree (2 majors) Theological Studies (2015)
Bachelor's degree (2 majors) Political and Social Studies (2015)
Bachelor's degree (2 majors) Russian Language and Culture (2015)
Bachelor's degree (2 majors) Greek Philology (2015)
Bachelor's degree (2 majors) European Ethnology (2015)
Bachelor's degree (2 majors) Indology/South Asian Studies (2015)
First state examination for the teaching degree Grundschule English (2015)
First state examination for the teaching degree Grundschule Biology (2015)
First state examination for the teaching degree Grundschule Chemistry (2015)
First state examination for the teaching degree Grundschule Geography (2015)
First state examination for the teaching degree Grundschule German (2015)
First state examination for the teaching degree Grundschule Catholic Theology (2015)
First state examination for the teaching degree Grundschule Mathematics (2015)
First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2015)
First state examination for the teaching degree Grundschule Physics (2015)
First state examination for the teaching degree Grundschule Social Science (2015)
First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Chemistry (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Geography (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in German (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in History (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Catholic Theology (Primary School) (2015)
First state examination for the teaching degree Grundschule Art Education in Primary School (2015)
First state examination for the teaching degree Grundschule Didactics in Science of Sport (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Mathematics (Primary School) (2015)
First state examination for the teaching degree Grundschule Music Education in Primary School (2015)
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2015)
First state examination for the teaching degree Grundschule Didactics in Social Science (Primary School) (2015)
First state examination for the teaching degree Grundschule Science of Sport (2015)
First state examination for the teaching degree Realschule English (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Realschule Chemistry (2015)
First state examination for the teaching degree Realschule Geography (2015)
First state examination for the teaching degree Realschule Protestant Theology (2015)
First state examination for the teaching degree Realschule French Studies (2015)
First state examination for the teaching degree Realschule German (2015)
First state examination for the teaching degree Realschule History (2015)
First state examination for the teaching degree Realschule Computer Science (2015)
First state examination for the teaching degree Realschule Catholic Theology (2015)
First state examination for the teaching degree Realschule Mathematics (2015)
First state examination for the teaching degree Realschule Physics (2015)
First state examination for the teaching degree Realschule Science of Sport (2015)
First state examination for the teaching degree Gymnasium English (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Gymnasium Chemistry (2015)
First state examination for the teaching degree Gymnasium Geography (2015)
First state examination for the teaching degree Gymnasium French Studies (2015)

First state examination for the teaching degree Gymnasium German (2015)
First state examination for the teaching degree Gymnasium History (2015)
First state examination for the teaching degree Gymnasium Greek Philology (2015)
First state examination for the teaching degree Gymnasium Computer Science (2015)
First state examination for the teaching degree Gymnasium Italian Studies (2015)
First state examination for the teaching degree Gymnasium Catholic Theology (2015)
First state examination for the teaching degree Gymnasium Latin Philology (2015)
First state examination for the teaching degree Gymnasium Mathematics (2015)
First state examination for the teaching degree Gymnasium Physics (2015)
First state examination for the teaching degree Gymnasium Russian (2015)
First state examination for the teaching degree Gymnasium Social Science (2015)
First state examination for the teaching degree Gymnasium Spanish Studies (2015)
First state examination for the teaching degree Gymnasium Science of Sport (2015)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2015)
First state examination for the teaching degree Sonderpädagogik Speech and Language Pathology (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Primary School) (2015)
First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Primary School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2015)
First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Ergonomics (Teaching at the German Mittelschule) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Geography (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Art Education in Middle School (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Social Science (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2015)
First state examination for the teaching degree Mittelschule English (2015)
First state examination for the teaching degree Mittelschule Biology (2015)
First state examination for the teaching degree Mittelschule Chemistry (2015)
First state examination for the teaching degree Mittelschule Geography (2015)
First state examination for the teaching degree Mittelschule Protestant Theology (2015)
First state examination for the teaching degree Mittelschule German (2015)
First state examination for the teaching degree Mittelschule History (2015)

First state examination for the teaching degree Mittelschule Catholic Theology (2015)
First state examination for the teaching degree Mittelschule Mathematics (2015)
First state examination for the teaching degree Mittelschule Physics (2015)
First state examination for the teaching degree Mittelschule Social Science (2015)
First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2015)
First state examination for the teaching degree Mittelschule Ergonomics (Teaching at the German Mittelschule) (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2015)
First state examination for the teaching degree Mittelschule Didactics in Geography (Middle School) (2015)
First state examination for the teaching degree Mittelschule Didactics in Protestant Theology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2015)
First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2015)
First state examination for the teaching degree Mittelschule Didactics in Catholic Theology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Art Education in Middle School (2015)
First state examination for the teaching degree Mittelschule Didactics in Science of Sport (Middle School) (2015)
First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2015)
First state examination for the teaching degree Mittelschule Music Education in Middle School (2015)
First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015)
First state examination for the teaching degree Mittelschule Didactics in Social Science (Middle School) (2015)
First state examination for the teaching degree Mittelschule Science of Sport (2015)
First state examination for the teaching degree Mittelschule Teaching at the German Mittelschule (2015)
Bachelor's degree (2 majors) Geography (2015)
Bachelor's degree (2 majors) French Studies (2015)
Bachelor's degree (2 majors) History (2015)
Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015)
Bachelor's degree (2 majors) German Language and Literature (2015)
Bachelor's degree (1 major) Mathematical Physics (2016)
First state examination for the teaching degree Grundschule Protestant Theology (2015)
First state examination for the teaching degree Grundschule Music (2015)
First state examination for the teaching degree Grundschule Didactics in Protestant Theology (Primary School) (2015)
First state examination for the teaching degree Realschule Music (2015)
First state examination for the teaching degree Gymnasium Music (2015)
First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Primary School) (2015)
First state examination for the teaching degree Mittelschule Music (2015)
Bachelor's degree (1 major, 1 minor) French Studies (2016)
Bachelor's degree (2 majors) French Studies (2016)
Bachelor's degree (1 major, 1 minor) Italian Studies (2016)
Bachelor's degree (2 majors) Italian Studies (2016)
Bachelor's degree (1 major, 1 minor) Spanish Studies (2016)
Bachelor's degree (2 majors) Spanish Studies (2016)
Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016)
Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016)
Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016)
Bachelor's degree (1 major) Business Information Systems (2016)
First state examination for the teaching degree Gymnasium French Studies (2016)
First state examination for the teaching degree Gymnasium Italian Studies (2016)
First state examination for the teaching degree Gymnasium Spanish Studies (2016)

First state examination for the teaching degree Realschule French Studies (2016)
Bachelor's degree (1 major) Games Engineering (2016)
Bachelor's degree (1 major, 1 minor) English and American Studies (2016)
Bachelor's degree (2 majors) English and American Studies (2016)
First state examination for the teaching degree Grundschule English (2016)
First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2016)
First state examination for the teaching degree Realschule English (2016)
First state examination for the teaching degree Gymnasium English (2016)
First state examination for the teaching degree Mittelschule English (2016)
First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2016)
First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2016)
Bachelor's degree (1 major) Media Communication (2016)
Bachelor's degree (1 major) Food Chemistry (2016)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2016)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major, 1 minor) Geography (2017)
Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017)
Bachelor's degree (2 majors) History of Medieval and Modern Art (2017)
Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017)
Bachelor's degree (1 major) Aerospace Computer Science (2017)
Bachelor's degree (1 major) Biochemistry (2017)
Bachelor's degree (1 major) Chemistry (2017)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2017)
Bachelor's degree (1 major) Economathematics (2017)
Bachelor's degree (1 major) Games Engineering (2017)
Bachelor's degree (1 major) Computer Science (2017)
First state examination for the teaching degree Gymnasium Greek Philology (2018)
Bachelor's degree (1 major) Media Communication (2018)
Bachelor's degree (1 major) Biomedicine (2018)
Bachelor's degree (1 major) Human-Computer Systems (2018)
Bachelor's degree (2 majors) Classical Archaeology (2018)
Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2018)
Bachelor's degree (2 majors) Digital Humanities (2018)
First state examination for the teaching degree Grundschule Physics (2018)
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018)
First state examination for the teaching degree Realschule Physics (2018)
First state examination for the teaching degree Gymnasium Physics (2018)
First state examination for the teaching degree Mittelschule Physics (2018)
First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018)
First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018)
Bachelor's degree (1 major) Computer Science (2019)
First state examination for the teaching degree Gymnasium Mathematics (2019)
Bachelor's degree (1 major, 1 minor) English and American Studies (2019)
Bachelor's degree (1 major) Indology/South Asian Studies (2019)
Bachelor's degree (1 major) Business Information Systems (2019)
Bachelor's degree (2 majors) Indology/South Asian Studies (2019)
Bachelor's degree (1 major) Business Management and Economics (2019)
Bachelor's degree (1 major) Modern China (2019)
Bachelor's degree (1 major) Biomedicine (2020)
Bachelor's degree (1 major) Pedagogy (2020)
Bachelor's degree (1 major) Political and Social Studies (2020)
Bachelor's degree (1 major) Business Information Systems (2020)

Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020)
Bachelor's degree (2 majors) European Ethnology (2020)
Bachelor's degree (2 majors) Political and Social Studies (2020)
Bachelor's degree (2 majors) Special Education (2020)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule German (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule English (2020 (Prüfungsordnungsversion 2016))
First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016))
First state examination for the teaching degree Mittelschule Protestant Theology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Protestant Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Geography (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule History (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Catholic Theology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Catholic Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Mathematics (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Art Education in Middle School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Science of Sport (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Science of Sport (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Music (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Music Education in Middle School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Teaching at the German Mittelschule (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016))
First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Geography (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Art Education in Middle School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Primary School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Primary School) (2020 (Prüfungsordnungsversion 2015))
Bachelor's degree (1 major) Physics (2020)
Bachelor's degree (1 major) Nanostructure Technology (2020)
Bachelor's degree (1 major) Mathematical Physics (2020)
Bachelor's degree (1 major) Aerospace Computer Science (2020)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2020)
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020)
First state examination for the teaching degree Grundschule Physics (2020)
First state examination for the teaching degree Gymnasium Physics (2020)
First state examination for the teaching degree Realschule Physics (2020)
First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020)
First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020)
First state examination for the teaching degree Mittelschule Physics (2020)
Bachelor's degree (1 major, 1 minor) Pedagogy (2020)
Bachelor's degree (2 majors) Pedagogy (2020)
First state examination for the teaching degree Grundschule Political and Social Studies (2020)
First state examination for the teaching degree Grundschule Didactics in Political and Social Studies (Primary School) (2020)
First state examination for the teaching degree Sonderpädagogik MS-Didaktik Career and Economics (2020)
First state examination for the teaching degree Sonderpädagogik Didactics in Political and Social Studies (Secondary School) (2020)

First state examination for the teaching degree Mittelschule MS-Didaktik Career and Economics (2020)
First state examination for the teaching degree Mittelschule Didactics in Political and Social Studies (Secondary School) (2020)
First state examination for the teaching degree Mittelschule Political and Social Studies (2020)
First state examination for the teaching degree Gymnasium Political and Social Studies (2020)
Bachelor's degree (1 major) Psychology (2020)
Bachelor's degree (1 major) Biology (2021)
Magister Theologiae Catholic Theology (2021)
Bachelor's degree (2 majors) History (2021)
Bachelor's degree (1 major, 1 minor) History (2021)
First state examination for the teaching degree Grundschule History (2021)
First state examination for the teaching degree Gymnasium History (2021)
First state examination for the teaching degree Realschule History (2021)
First state examination for the teaching degree Mittelschule History (2021)
Bachelor's degree (1 major) Media Communication (2021)
Bachelor's degree (2 majors) Theological Studies (2021)
Bachelor's degree (1 major, 1 minor) Theological Studies (2021)
Bachelor's degree (1 major, 1 minor) English and American Studies (2021)
Bachelor's degree (2 majors) English and American Studies (2021)
First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2021)
First state examination for the teaching degree Gymnasium English (2021)
Bachelor's degree (1 major) Functional Materials (2021)
First state examination for the teaching degree Gymnasium Philosophy and Ethics (2021)
Bachelor's degree (1 major) Computer Science und Sustainability (2021)
Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021)
Bachelor's degree (1 major) Food Chemistry (2021)
Bachelor's degree (1 major) Quantum Technology (2021)
Bachelor's degree (2 majors) Special Education (2021)
Bachelor's degree (1 major) Business Information Systems (2021)
Bachelor's degree (1 major) Economathematics (2021)
Bachelor's degree (1 major) Business Management and Economics (2021)
First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2021)
Bachelor's degree (1 major) Human-Computer Systems (2022)
Bachelor's degree (1 major, 1 minor) Museology and material culture (2022)
Bachelor's degree (1 major) Biochemistry (2022)
Bachelor's degree (1 major) Biology (2022)
Bachelor's degree (1 major) Economathematics (2022)
Bachelor's degree (1 major) Mathematical Data Science (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)
First state examination for the teaching degree Gymnasium Philosophy and Ethics (2022)
Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022)
Bachelor's degree (1 major, 1 minor) Ancient World (2022)
Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022)
Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022)
First state examination for the teaching degree Gymnasium Russian (2023)
First state examination for the teaching degree Gymnasium Mathematics (2023)
First state examination for the teaching degree Gymnasium English (2023)
First state examination for the teaching degree Realschule English (2023)
First state examination for the teaching degree Grundschule English (2023)
First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2023)
First state examination for the teaching degree Mittelschule English (2023)
First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2023)
First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2023)

First state examination for the teaching degree Gymnasium Geography (2023)
First state examination for the teaching degree Realschule Geography (2023)
First state examination for the teaching degree Grundschule Geography (2023)
First state examination for the teaching degree Mittelschule Geography (2023)
Bachelor's degree (1 major) European Law (2023)
Bachelor's degree (1 major, 1 minor) English and American Studies (2023)
Bachelor's degree (2 majors) English and American Studies (2023)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Business Information Systems (2023)
Bachelor's degree (1 major) Economathematics (2023)
Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023)
Bachelor's degree (2 majors) History of Medieval and Modern Art (2023)
Bachelor's degree (2 majors) Special Education (2023)
Bachelor's degree (1 major) Business Management and Economics (2023)
Bachelor's degree (1 major) Geography (2023)
Bachelor's degree (2 majors) Geography (2023)
Bachelor's degree (1 major, 1 minor) Geography (2023)
Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023)
First state examination for the teaching degree Grundschule German (2024)
First state examination for the teaching degree Gymnasium German (2024)
First state examination for the teaching degree Realschule German (2024)
First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2024)
First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2024)
First state examination for the teaching degree Grundschule Didactics in German (Primary School) (2024)
First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2024)
First state examination for the teaching degree Mittelschule German (2024)
Bachelor's degree (1 major) Mathematical Physics (2024)
Bachelor's degree (2 majors) German Language and Literature (2024)
Bachelor's degree (1 major, 1 minor) German Language and Literature (2024)
Bachelor's degree (1 major) Music Education (2024)
Bachelor's degree (2 majors) Music Education (2024)
Bachelor's degree (1 major, 1 minor) Music Education (2024)
First state examination for the teaching degree Grundschule Music Education in Primary School (2024)
First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2024)
First state examination for the teaching degree Mittelschule Music Education in Middle School (2024)
First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2024)
Bachelor's degree (1 major) Indology/South Asian Studies (2024)
Bachelor's degree (2 majors) Indology/South Asian Studies (2024)
Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024)
Bachelor's degree (1 major, 1 minor) Ancient World (2024)
Bachelor's degree (2 majors) Digital Humanities (2024)
Bachelor's degree (1 major, 1 minor) Digital Humanities (2024)
Bachelor's degree (1 major) Midwifery (2024)
Bachelor's degree (2 majors) Greek Philology (2024)
Bachelor's degree (2 majors) Latin Philology (2024)
First state examination for the teaching degree Gymnasium Latin Philology (2024)
Bachelor's degree (1 major) Business Information Systems (2024)
Bachelor's degree (1 major) Economathematics (2024)
Bachelor's degree (1 major) Business Management and Economics (2024)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)
First state examination for the teaching degree Gymnasium English (2024)
First state examination for the teaching degree Mittelschule MS-Didaktik Career and Economics (2024)

First state examination for the teaching degree Sonderpädagogik MS-Didaktik Career and Economics (2024)
First state examination for the teaching degree Grundschule History (2024)
First state examination for the teaching degree Gymnasium History (2024)
First state examination for the teaching degree Realschule History (2024)
First state examination for the teaching degree Mittelschule History (2024)
First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2024)
First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2024)
First state examination for the teaching degree Grundschule Didactics in History (Primary School) (2024)
First state examination for the teaching degree Gymnasium Greek Philology (2024)
Bachelor's degree (1 major) Human-Computer-Interaction (2024)
First state examination for the teaching degree Grundschule Art Education in Primary School (2024)
First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2024)
First state examination for the teaching degree Sonderpädagogik Art Education in Middle School (2024)
First state examination for the teaching degree Mittelschule Art Education in Middle School (2024)
Bachelor's degree (2 majors) Art Education (2024)
Bachelor's degree (1 major) Digital Business & Data Science (2024)
Bachelor's degree (1 major) Classics (2024)
Bachelor's degree (1 major) Diversity, Ethics and Religions (2024)
Bachelor's degree (1 major) Functional Materials (2025)
Bachelor's degree (1 major) (2025)
Bachelor's degree (1 major) Food Chemistry (2025)
Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025)
Bachelor's degree (1 major) Pedagogy (2025)
Bachelor's degree (2 majors) Pedagogy (2025)
Bachelor's degree (1 major) Economathematics (2025)
Bachelor's degree (1 major) Academic Speech Therapy (2025)
Bachelor's degree (1 major, 1 minor) Pedagogy (2025)
Bachelor's degree (1 major) Games Engineering (2025)