Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

Subdivided Module Catalogue

for the Module studies (Bachelor)

Chemistry

Examination regulations version: 2019
Responsible: Faculty of Chemistry and Pharmacy

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:

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

15-May-2019 (2019-36)

27-Jun-2019 (2019-41)

14-Nov-2019 (2019-52)

22-Jan-2020 (2020-13)

06-May-2020 (2020-39)

22-Jul-2020 (2020-57)

17-Dec-2020 (2020-110)

10-Mar-2021 (2021-17)

09-Jun-2021 (2021-58)

22-Dec-2021 (2021-85)

05-Jul-2022 (2022-52)

31-Jan-2023 (2022-86)

15-Jun-2023 (2023-58)

13-Dec-2023 (2023-107)

07-Aug-2024 (2024-82)

22-Jan-2025 (2025-1)

09-Jul-2025 (2025-75)

15-Apr-2026 (2026-48)

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		Method of grading	page
Summer Term 2019				
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Winter Term 2019				
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Summer Term 2020				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AS1-152-m01	Inorganic Chemistry of the Elements	6	NUM	9
08-BC1-152-m01	Biochemistry 1	5	NUM	10
08-OC1-152-m01	Organic Chemistry 1	5	NUM	11
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Winter Term 2020				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AC1-152-m01	Principles of Inorganic Chemistry	8	NUM	7
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Summer Term 2021				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AS1-152-m01	Inorganic Chemistry of the Elements	6	NUM	9
08-BC1-152-m01	Biochemistry 1	5	NUM	10
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Winter Term 2021				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AC1-152-m01	Principles of Inorganic Chemistry	8	NUM	7
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Summer Term 2022				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AS1-152-m01	Inorganic Chemistry of the Elements	6	NUM	9
08-BC1-152-m01	Biochemistry 1	5	NUM	10
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13

Winter Term 2022				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AC1-152-m01	Principles of Inorganic Chemistry	8	NUM	7
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Summer Term 2023				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AS1-152-m01	Inorganic Chemistry of the Elements	6	NUM	9
08-BC1-152-m01	Biochemistry 1	5	NUM	10
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Winter Term 2023				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AC1-152-m01	Principles of Inorganic Chemistry	8	NUM	7
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Summer Term 2024				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AS1-152-m01	Inorganic Chemistry of the Elements	6	NUM	9
08-BC1-152-m01	Biochemistry 1	5	NUM	10
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Winter Term 2024				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AC1-152-m01	Principles of Inorganic Chemistry	8	NUM	7
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Summer Term 2025				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AS1-152-m01	Inorganic Chemistry of the Elements	6	NUM	9
08-BC1-152-m01	Biochemistry 1	5	NUM	10
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Winter Term 2025				

08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AC1-152-m01	Principles of Inorganic Chemistry	8	NUM	7
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Summer Term 2026				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AS1-152-m01	Inorganic Chemistry of the Elements	6	NUM	9
08-BC1-152-m01	Biochemistry 1	5	NUM	10
08-AC1-152-m01	Principles of Inorganic Chemistry	8	NUM	7
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13
Winter Term 2026				
08-AC-NF-152-m01	Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry	3	NUM	8
08-AC1-152-m01	Principles of Inorganic Chemistry	8	NUM	7
08-OC-NF-152-m01	Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences	3	NUM	12
08-OP-152-m01	Advanced chemical practical course	5	B/NB	13

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)

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

Module title			Abbreviation
Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry			08-AC-NF-152-m01
Module coordinator		**Module offered by**	
lecturer of lecture "Allgemeine and Anorganische Chemie für Studierende der Medizin, Zahnmedizin and Biologie" (General and Inorganic Chemistry for Students of Medicine, Dentistry and Biology)		Institute of Inorganic 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 an overview of the theoretical principles of inorganic chemistry. In addition, it introduces the fundamental techniques of inorganic chemistry in a lab course.

Intended learning outcomes

Students have become familiar with the fundamental principles of inorganic chemistry. They are able to identify fundamental problems in chemistry and perform experiments to solve them.

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

Allocation of places

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Additional information

Qualification goal: scientific competences

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 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 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 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 title			Abbreviation
Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences			08-OC-NF-152-m01
Module coordinator		**Module offered by**	
lecturer of lecture "Organische Chemie für Studierende der Medizin, Biomedizin, Zahnmedizin, Ingenieur- and Naturwissenschaften"		Institute of Organic 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 an overview of the theoretical principles of organic chemistry.

Intended learning outcomes

Students have become familiar with the fundamental principles of organic chemistry.

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

Allocation of places

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Additional information

Qualification goal: scientific competences

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 title			Abbreviation
Advanced chemical practical course			08-OP-152-m01
Module coordinator			**Module offered by**
head of the research group offering the module			Faculty of Chemistry and Pharmacy
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 explore a research topic and apply the methods commonly used in the discipline in question.

Intended learning outcomes

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

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

P (10)

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) talk (approx. 15 minutes) or
b) log (approx. 10 to 20 pages)
Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: block placement / block taught practical course with a duration of 20 days.

Workload

150 h

Teaching cycle

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

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