Module Catalogue
for the Module studies (Bachelor)
Chemistry

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

The subject is divided into

Abbreviations used, Conventions, Notes, In accordance with

Summer Term 2019

Advanced chemical practical course

Winter Term 2019

Advanced chemical practical course

Summer Term 2020

Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry

Inorganic Chemistry of the Elements

Biochemistry 1

Organic Chemistry 1

Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences

Winter Term 2020

Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry

Principles of Inorganic Chemistry

Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences

Advanced chemical practical course

Summer Term 2021

Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry

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Summer Term 2022

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Winter Term 2022

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Principles of Inorganic Chemistry

Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences

Advanced chemical practical course
The subject is divided into

<table>
<thead>
<tr>
<th>section / sub-section</th>
<th>starting page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Term 2019</td>
<td>6</td>
</tr>
<tr>
<td>Winter Term 2019</td>
<td>8</td>
</tr>
<tr>
<td>Summer Term 2020</td>
<td>10</td>
</tr>
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<td>Winter Term 2020</td>
<td>17</td>
</tr>
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<td>Summer Term 2021</td>
<td>22</td>
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<tr>
<td>Winter Term 2021</td>
<td>28</td>
</tr>
<tr>
<td>Summer Term 2022</td>
<td>33</td>
</tr>
<tr>
<td>Winter Term 2022</td>
<td>39</td>
</tr>
</tbody>
</table>
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)):

- 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)
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.
Summer Term 2019
(0 ECTS credits)
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<tr>
<th>Module title</th>
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<tbody>
<tr>
<td>Advanced chemical practical course</td>
<td>08-OP-152-m01</td>
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**Module coordinator**

head of the research group offering the module

**Module offered by**

Faculty of Chemistry and Pharmacy

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<th>Method of grading</th>
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**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**

The student is able to deeply acquaint himself/herself with a specific research topic, and to process and to present the results in a written report or a talk.

**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 is creditable for 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**

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

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Winter Term 2019
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- P (10)

**Method of assessment** (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for 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**

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**Module coordinator**

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)

**Module offered by**

Institute of Inorganic Chemistry

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**Duration**

1 semester

**Module level**

undergraduate

**Contents**

This module will provide students with an overview of anorganic chemistry. Furthermore, in a lab course it introduces on the basics techniques of anorganic chemistry.

**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 is creditable for bonus)

written examination (approx. 60 minutes)

Language of assessment: German and/or English

**Allocation of places**

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**Additional information**

--

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

--
### Module title
Inorganic Chemistry of the Elements

### Abbreviation
08-AS1-152-m01

### Module coordinator
lecturer of lecture "Chemie der Hauptgruppenelemente" (Chemistry of Main-group Elements)

### Module offered by
Institute of Inorganic Chemistry

### ECTS
6

### Method of grading
Only after succ. compl. of module(s)

### Numerical grade
--

### Duration
1 semester

### Module level
undergraduate

### Other prerequisites
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## 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 is creditable for 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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### Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 62 I Nr. 1
<table>
<thead>
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<th>Abbreviation</th>
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<td>Biochemistry 1</td>
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</table>

**Contents**

The module imparts the basic knowledge of biochemistry by lectures and tutorials. Main topics of the module Biochemistry 1 are particularly the biochemistry of proteins (amino acids, peptide bond, primary, secondary, tertiary and quaternary structure), 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, urea cycle and metabolism of amino acids. Additionally the module conveys basic knowledge about the structure of DNA and the basics of passing and transformation of genetic information (central dogma).

**Intended learning outcomes**

The student has basic knowledge in the covered subject areas of biochemistry. He/She is able to describe the basic 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 is creditable for bonus)

written examination (approx. 60 to 90 minutes)

**Allocation of places**

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**Additional information**

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

§ 42 I Nr. 2
§ 62 I Nr. 2
<table>
<thead>
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<th>Module title</th>
<th>Abbreviation</th>
</tr>
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<tr>
<td>Organic Chemistry 1</td>
<td>08-OC1-152-m01</td>
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<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</table>

### 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 is creditable for 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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### Referred to in LPO 1 (examination regulations for teaching-degree programmes)

§ 62 I Nr. 2
<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Chemistry for students of medicine, biomedicine, dental medicine and</td>
<td>08-OC-NF-152-m01</td>
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<td>1 semester</td>
<td>undergraduate</td>
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</table>

**Contents**

This module will provide students with an overview 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 is creditable for 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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**Referred to in LPO I** (examination regulations for teaching-degree programmes)

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<table>
<thead>
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<th>Abbreviation</th>
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<td>Advanced chemical practical course</td>
<td>08-OP-152-m01</td>
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**Module coordinator**  
head of the research group offering the module

**Module offered by**  
Faculty of Chemistry and Pharmacy

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**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**  
The student is able to deeply acquaint himself/herself with a specific research topic, and to process and to present the results in a written report or a talk.

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

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Winter Term 2020

(0 ECTS credits)
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<td>08-AC-NF-152-m01</td>
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### Contents

This module will provide students with an overview of anorganic chemistry. Furthermore, in a lab course it introduces on the basics techniques of anorganic chemistry.

### 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

**V (2)**

**Method of assessment**

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

**Allocation of places**

--

**Additional information**

--

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

--
### Module title
- **Principles of Inorganic Chemistry**

### Abbreviation
- 08-AC1-152-m01

### Module coordinator
- Lecturer of lecture "Experimentalchemie" (Experimental Chemistry)

### Module offered by
- Institute of Inorganic Chemistry

### ECTS
- 8

### Method of grading
- Numerical grade — Only after succ. compl. of module(s)

### Duration
- 1 semester

### Module level
- Undergraduate

### Other prerequisites
- --

### 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
- **V (4) + V (2)**

### Method of assessment
- Type, scope, language — If other than German, examination offered — If not every semester, information on whether module is creditable for bonus

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- Language of assessment: German and/or English

### Allocation of places
- --

### Additional information
- --

### 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 title | Abbreviation
---|---
Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences | 08-OC-NF-152-m01

Module coordinator

lecturer of lecture "Organische Chemie für Studierende der Medizin, Biomedizin, Zahnmedizin, Ingenieur- and Naturwissenschaften"

Module offered by

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 will provide students with an overview 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 is creditable for 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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**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**

The student is able to deeply acquaint himself/herself with a specific research topic, and to process and to present the results in a written report or a talk.

**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 is creditable for bonus)

a) talk (approx. 15 minutes) or b) log (approx. 10 to 20 pages)

Language of assessment: German and/or English

**Allocation of places**

--

**Additional information**

--

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

--
Summer Term 2021
(0 ECTS credits)
Module title

Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry

Abbreviation

08-AC-NF-152-m01

Module coordinator

lecturer of lecture "Allgemeine und Anorganische Chemie für Studierende der Medizin, Zahnmedizin und Biologie" (General and Inorganic Chemistry for Students of Medicine, Dentistry and Biology)

Module offered by

Institute of Inorganic Chemistry

ECTS

3

Method of grading

Only after succ. compl. of module(s)

numerical grade

--

Duration

1 semester

Module level

undergraduate

Other prerequisites

--

Contents

This module will provide students with an overview of anorganic chemistry. Furthermore, in a lab course it introduces the basics techniques of anorganic chemistry.

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 is creditable for bonus)

written examination (approx. 60 minutes)

Language of assessment: German and/or English

Allocation of places

--

Additional information

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Referred to in LPO I

(examination regulations for teaching-degree programmes)

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**Module coordinator**  
Lecturer of lecture "Chemie der Hauptgruppenelemente" (Chemistry of Main-group Elements)

**Module offered by**  
Institute of Inorganic Chemistry

**ECTS**  
6

**Method of grading**  
Numerical grade --

**Duration**  
1 semester

**Module level**  
Undergraduate

**Other prerequisites**  
--

**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**

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Language of assessment: German and/or English

**Allocation of places**

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**Additional information**

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**Referred to in LPO I**

(examination regulations for teaching-degree programmes)

§ 62 I Nr. 1
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**Contents**

The module imparts the basic knowledge of biochemistry by lectures and tutorials. Main topics of the module Biochemistry 1 are particularly the biochemistry of proteins (amino acids, peptide bond, primary, secondary, tertiary and quaternary structure), 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, urea cycle and metabolism of amino acids. Additionally the module conveys basic knowledge about the structure of DNA and the basics of passing and transformation of genetic information (central dogma).

**Intended learning outcomes**

The student has basic knowledge in the covered subject areas of biochemistry. He/She is able to describe the basic 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 is creditable for bonus)

written examination (approx. 60 to 90 minutes)

**Allocation of places**

--

**Additional information**

--

**Referred to in LPO I**

(examination regulations for teaching-degree programmes)

§ 42 I Nr. 2
§ 62 I Nr. 2
## Module title
Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences

### Abbreviation
08-OC-NF-152-m01

### Module coordinator
lecturer of lecture "Organische Chemie für Studierende der Medizin, Biomedizin, Zahnmedizin, Ingenieur- and Naturwissenschaften"

### Module offered by
Institute of Organic Chemistry

### ECTS
3

### Method of grading
numerical grade

### Only after succ. compl. of module(s)
--

### Duration
1 semester

### Module level
undergraduate

### Other prerequisites
--

### Contents
This module will provide students with an overview 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 is creditable for bonus)

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

### Allocation of places
--

### Additional information
--

### Referred to in LPO I
(examination regulations for teaching-degree programmes)
--
### Module Catalogue for the Module studies (Bachelor)

**Chemistry**

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### 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

The student is able to deeply acquaint himself/herself with a specific research topic, and to process and to present the results in a written report or a talk.

### Courses

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

**P (10)**

### Method of assessment

*Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for 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

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### Referred to in LPO I

(examination regulations for teaching-degree programmes)

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Winter Term 2021
(o ECTS credits)
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<td>Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry</td>
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**Module coordinator**

lecturer of lecture "Allgemeine und Anorganische Chemie für Studierende der Medizin, Zahnmedizin und Biologie" (General and Inorganic Chemistry for Students of Medicine, Dentistry and Biology)

**Module offered by**

Institute of Inorganic Chemistry

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</table>

**Contents**

This module will provide students with an overview of anorganic chemistry. Furthermore, in a lab course it introduces on the basics techniques of anorganic chemistry.

**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 is creditable for bonus)

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

**Allocation of places**

--

**Additional information**

--

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

--
Module title
Principles of Inorganic Chemistry

Abbreviation
08-AC1-152-m01

Module coordinator
lecturer of lecture "Experimentalchemie" (Experimental Chemistry)

Module offered by
Institute of Inorganic Chemistry

ECTS
8

Method of grading
numerical grade

Only after succ. compl. of module(s)
-

Duration
1 semester

Module level
undergraduate

Other prerequisites
-

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 is creditable for 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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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
<table>
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<td>Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences</td>
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**Contents**

This module will provide students with an overview 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)

<table>
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<th>Type</th>
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**Method of assessment** (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

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

**Allocation of places**

--

**Additional information**

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

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**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**

The student is able to deeply acquaint himself/herself with a specific research topic, and to process and to present the results in a written report or a talk.

**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 is creditable for bonus)

a) talk (approx. 15 minutes) or b) log (approx. 10 to 20 pages)

Language of assessment: German and/or English

**Allocation of places**

--

**Additional information**

--

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

--
Summer Term 2022

(0 ECTS credits)
**Module title**
Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry

**Abbreviation**
08-AC-NF-152-m01

**Module coordinator**
Lecturer of lecture "Allgemeine und Anorganische Chemie für Studierende der Medizin, Zahnmedizin and Biologie" (General and Inorganic Chemistry for Students of Medicine, Dentistry and Biology)

**Module offered by**
Institute of Inorganic Chemistry

**ECTS**
3

**Method of grading**
Only after succ. compl. of module(s)

**Duration**
1 semester

**Module level**
Undergraduate

**Other prerequisites**
--

**Contents**
This module will provide students with an overview of anorganic chemistry. Furthermore, in a lab course it introduces on the basics techniques of anorganic chemistry.

**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 is creditable for 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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**Referred to in LPO I**
(examination regulations for teaching-degree programmes)
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**Module coordinator**

lecturer of lecture "Chemie der Hauptgruppenelemente" (Chemistry of Main-group Elements)

**Module offered by**

Institute of Inorganic Chemistry

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**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 is creditable for 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**

--

**Additional information**

--

**Referred to in LPO I**

(examination regulations for teaching-degree programmes)

§ 62 I Nr. 1
Module title: Biochemistry 1  
Abbreviation: 08-BC1-152-m01

Module coordinator: holder of the Chair of Biochemistry  
Module offered by: Chair of Biochemistry

ECTS: 5  
Method of grading: numerical grade  
Only after succ. compl. of module(s): --

Duration: 1 semester  
Module level: undergraduate  
Other prerequisites: --

Contents
The module imparts the basic knowledge of biochemistry by lectures and tutorials. Main topics of the module Biochemistry 1 are particularly the biochemistry of proteins (amino acids, peptide bond, primary, secondary, tertiary and quaternary structure), 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, urea cycle and metabolism of amino acids. Additionally the module conveys basic knowledge about the structure of DNA and the basics of passing and transformation of genetic information (central dogma).

Intended learning outcomes
The student has basic knowledge in the covered subject areas of biochemistry. He/She is able to describe the basic 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 is creditable for bonus)
written examination (approx. 60 to 90 minutes)

Allocation of places
--

Additional information
--

Referred to in LPO I (examination regulations for teaching-degree programmes)
§ 42 I Nr. 2  
§ 62 I Nr. 2
### Module title
Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences

### Abbreviation
08-OC-NF-152-m01

### Module coordinator
Lecturer of lecture "Organische Chemie für Studierende der Medizin, Biomedizin, Zahnmedizin, Ingenieur- and Naturwissenschaften"

### Module offered by
Institute of Organic Chemistry

### ECTS
3

### Method of grading
Numerical grade

### Only after succ. compl. of module(s)

### Duration
1 semester

### Module level
Undergraduate

### Other prerequisites

### Contents
This module will provide students with an overview 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)

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### Method of assessment
(type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

- **Type**: Written examination (approx. 60 minutes)
- **Language**: German and/or English

### Allocation of places

### Additional information

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

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### Advanced chemical practical course

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**Module coordinator**
head of the research group offering the module

**Module offered by**
Faculty of Chemistry and Pharmacy

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**Duration**
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**
The student is able to deeply acquaint himself/herself with a specific research topic, and to process and to present the results in a written report or a talk.

**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 is creditable for bonus)

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

**Allocation of places**
--

**Additional information**
--

**Referred to in LPO I** (examination regulations for teaching-degree programmes)
--
Winter Term 2022
(0 ECTS credits)
Module title
Introduction to Inorganic Chemistry for Students of Biology, Medicine and Dentistry

Abbreviation
08-AC-NF-152-m01

Module coordinator
lecturer of lecture "Allgemeine und Anorganische Chemie für Studierende der Medizin, Zahnmedizin und Biologie" (General and Inorganic Chemistry for Students of Medicine, Dentistry and Biology)

Module offered by
Institute of Inorganic Chemistry

ECTS
3

Method of grading
Only after succ. compl. of module(s)

numerical grade
--

Module level
undergraduate

Other prerequisites
--

Contents
This module will provide students with an overview of anorganic chemistry. Furthermore, in a lab course it introduces on the basics techniques of anorganic chemistry.

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

<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>Principles of Inorganic Chemistry</td>
<td>08-AC1-152-m01</td>
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**Module coordinator**

instructor of lecture "Experimental Chemie" (Experimental Chemistry)

**Module offered by**

Institute of Inorganic Chemistry

<table>
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<tr>
<th>ECTS</th>
<th>Method of grading</th>
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<tr>
<th>Duration</th>
<th>Module level</th>
<th>Other prerequisites</th>
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<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</table>

**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 is creditable for 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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**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 catalogue for the module studies (Bachelor) Chemistry

### Module title
- **Organic Chemistry for students of medicine, biomedicine, dental medicine and natural sciences**

### Abbreviation
- 08-OC-NF-152-m01

### Module coordinator
- Lecturer of lecture "Organische Chemie für Studierende der Medizin, Biomedizin, Zahnmedizin, Ingenieur- und Naturwissenschaften"

### Module offered by
- Institute of Organic Chemistry

### ECTS
- 3

### Duration
- 1 semester

### Module level
- Undergraduate

### Method of grading
- Only after succ. compl. of module(s)

### Method of assessment
- Written examination (approx. 60 minutes)
  - Language of assessment: German and/or English

### Allocation of places
- --

### Additional information
- --

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

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This module will provide students with an overview of organic chemistry.

**Intended learning outcomes**

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

**Courses**

- **V (2)**

**Method of assessment**

- Written examination (approx. 60 minutes)
  - Language of assessment: German and/or English
<table>
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<th>Module title</th>
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<tr>
<td>head of the research group offering the module</td>
<td>Faculty of Chemistry and Pharmacy</td>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

### 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

The student is able to deeply acquaint himself/herself with a specific research topic, and to process and to present the results in a written report or a talk.

### 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 is creditable for 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

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### Referred to in LPO I

(examination regulations for teaching-degree programmes)

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