Subdivided Module Catalogue
for the Subject

FOKUS Chemistry
as a Bachelor’s with 1 major
with the degree "Bachelor of Science"
(180 ECTS credits)

Examination regulations version: 2011
Responsible: Faculty of Chemistry and Pharmacy
Course of Studies - Contents and Objectives

No translation available.
Abbreviations used


Term: \textit{SS} = summer semester, \textit{WS} = winter semester

Methods of grading: \textit{NUM} = numerical grade, \textit{B/NB} = (not) successfully completed

Regulations: \textit{(L)ASPO} = general academic and examination regulations (for teaching-degree programmes), \textit{FSB} = subject-specific provisions, \textit{SFB} = list of modules

Other: \textit{A} = thesis, \textit{LV} = course(s), \textit{PL} = assessment(s), \textit{TN} = participants, \textit{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:

\textit{ASPO2009}

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

\textit{29-Aug-2011 (2011-71)}

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

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<td><strong>Scientific Discussion (5 ECTS credits)</strong></td>
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<td>08-FAP-112-m01</td>
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<td>08-FIP-112-m01</td>
<td>FOKUS Industrial work experience</td>
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<thead>
<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
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<tbody>
<tr>
<td>Managing Director of the Institute of Applied Physics</td>
<td>Faculty of Physics and Astronomy</td>
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<td>2 semester</td>
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**Contents**
Mechanics, vibration theory, thermodynamics, optics, science of electricity, Atomic and Nuclear Physics.

**Intended learning outcomes**
The students have knowledge of the principles of Physics.

**Courses**
(type, number of weekly contact hours, language — if other than German)
V + V (no information on SWS (weekly contact hours) and course language available)

**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. 120 minutes)

**Allocation of places**
Only as part of pool of general key skills (ASQ): 10 places. Places will be allocated by lot.

**Additional information**
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**Referred to in LPO I**
(examination regulations for teaching-degree programmes)
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<table>
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<td>Practical Course Physics for Students of Non-physics-related Minor Subjects</td>
<td>11-PFNF-072-m01</td>
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**Module coordinator**
Managing Director of the Institute of Applied Physics

**Module offered by**
Faculty of Physics and Astronomy

<table>
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<th>ECTS</th>
<th>Method of grading</th>
<th>Only after succ. compl. of module(s)</th>
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**Duration**
1 semester

**Module level**
undergraduate

**Other prerequisites**
--

**Contents**
Mechanics, vibration theory, thermodynamics, optics, X-rays, nuclear magnetic resonance, Atomic and Nuclear Physics.

**Intended learning outcomes**
The students have knowledge of the principles of Physics.

**Courses** (type, number of weekly contact hours, language — if other than German)
P (no information on SWS (weekly contact hours) and course language available)

**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) oral test (approx. 15 minutes) during experiment and b) ungraded written examination (approx. 90 minutes)

**Allocation of places**
Only as part of pool of general key skills (ASQ): 10 places. Places will be allocated by lot.

**Additional information**
--

**Referred to in LPO I** (examination regulations for teaching-degree programmes)
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<table>
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<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<tr>
<td>Toxicology and legal studies</td>
<td>03-TR-072-m01</td>
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**Module coordinator**  
lecturer of lecture "Toxikologie und Rechtskunde"

**Module offered by**  
Faculty of Medicine

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<tr>
<td>3</td>
<td>numerical grade</td>
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**Duration**  
1 semester

**Module level**  
undergraduate

**Other prerequisites**  
--

**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 + V (no information on SWS (weekly contact hours) and course language available)

**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**  
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**Referred to in LPO I** (examination regulations for teaching-degree programmes)  
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<td>Organic Chemistry 1</td>
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<th>Module coordinator</th>
<th>Module offered by</th>
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<tbody>
<tr>
<td>holder of the Professorship of Organic Chemistry</td>
<td>Institute of Organic Chemistry</td>
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<tr>
<th>Duration</th>
<th>Module level</th>
<th>Other prerequisites</th>
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<tr>
<td>1 semester</td>
<td>undergraduate</td>
<td>Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).</td>
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**Contents**

German contents available but not translated yet.

Das Modul bietet einen Überblick über die elementaren Grundkenntnisse der organischen Chemie. Dazu wird die Bindungssituation am Kohlenstoff betrachtet und in die Nomenklatur einfacher und mäßig komplexer organischer Verbindungen eingeführt. Es werden Grundlagen der Stereochemie, Substitutions-, Additions- und Eliminierungsreaktionen sowie der Syntheseplanung vermittelt.

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.


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

V + Ü (no information on SWS (weekly contact hours) and course language available)

**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) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: 60 or 90 minutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)

**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 (1) 2. Chemie "Organische und Bioorganische Chemie"
Module title
Physical Chemistry 1

Abbreviation
08-PC1-092-m01

Module coordinator
lecturer of lecture "Grundlagen der Quantenmechanik and Spektroskopie" (Principles of Quantum Mechanics and Spectroscopy)

Module offered by
Institute of Physical and Theoretical Chemistry

ECTS
8

Method of grading
numerical grade

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

Duration
1 semester

Module level
undergraduate

Other prerequisites
Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).

Contents

German contents available but not translated yet.


Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden sind in der Lage, grundlegende Modelle der Quantenmechanik zu erklären und bei Molekülen anzuwenden. Er/Sie kann unterschiedliche spektroskopische Methoden darstellen. Die Studierenden können die mathematischen Grundlagen der elementaren der Quantenmechanik anwenden.

Courses

(type, number of weekly contact hours, language — if other than German)
V + Ü + V + Ü (no information on SWS (weekly contact hours) and course language available)

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) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: 60 or 90 minutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)

Allocation of places
--

Additional information
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Referred to in LPO I (examination regulations for teaching-degree programmes)
--
Module title: Physical Chemistry 2: Thermodynamics, Kinetics, Electrochemistry

Abbreviation: 08-PC2-092-m01

Module coordinator:

lecturer of lecture "Thermodynamik, Kinetik, Elektrochemie"

Module offered by:

Institute of Physical and Theoretical Chemistry

ECTS: 18

Method of grading: numerical grade

Duration: 1 semester

Module level: undergraduate

Other prerequisites: By way of exception, additional prerequisites are listed in the section on assessments.

Contents

German contents available but not translated yet.


Intended learning outcomes

German intended learning outcomes available but not translated yet.


Courses

This module comprises 2 module components. Information on courses will be listed separately for each module component.

- 08-PC2-2-092: P (no information on SWS (weekly contact hours) and course language available)
- 08-PC2-1-092: V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component 08-PC2-2-092: Physical Chemistry (lab)

- 9 ECTS, Method of grading: (not) successfully completed
- Vortest (pre-experiment exams, approx. 15 minutes each), assessment of practical performance, Nachtest (post-experiment exams, approx. 15 minutes each)
- Assessment offered: once a year, winter semester
- Only after successful completion of module components: 08-PC1-1 or 08-PC2-1

Assessment in module component 08-PC2-1-092: Thermodynamics, Kinetics, Electrochemistry Thermodynamics, Kinetics, Electrochemistry

- 9 ECTS, Method of grading: numerical grade
- a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: 60 or 90 minutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)
- Other prerequisites: Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).

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<td>§ 62 (1) 1. Chemie &quot;Allgemeine und Anorganische Chemie&quot;; &quot;Physikalische und Analytische Chemie&quot;</td>
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### Module Catalogue for the Subject
**FOKUS Chemistry**

**Bachelor’s with 1 major, 180 ECTS credits**

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<td>08-PC4-092-m01</td>
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<tr>
<td>lecturer of lecture “Statistische Thermodynamik”</td>
<td>Institute of Physical and Theoretical Chemistry</td>
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<th>Other prerequisites</th>
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</table>

**Contents**

This module deals with basics of statistical thermodynamics.

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Der/Die Studierende verfügt über Grundlagenkenntnisse der Statistischen Thermodynamik und kann diese anwenden.

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

V + Ü (no information on SWS (weekly contact hours) and course language available)

**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) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)

**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 title: Biochemistry

Abbreviation: 08-BC-092-m01

Module coordinator: holder of the Chair of Biochemistry

Module offered by: Chair of Biochemistry

ECTS: 6

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

Numerical grade: --

Duration: 2 semester

Module level: undergraduate

Other prerequisites: Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).

Contents:
The module imparts the basic knowledge of biochemistry by lectures and in-depth tutorials.

Intended learning outcomes:
German intended learning outcomes available but not translated yet.

Courses:
No information on SWS (weekly contact hours) and course language available.

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) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)

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>
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<th>Module title</th>
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<tr>
<td>Theoretical Models in Chemistry</td>
<td>08-TC-092-m01</td>
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**Module coordinator**
lecturer of lecture "Quantenchemie"

**Module offered by**
Institute of Physical and Theoretical Chemistry

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<th>ECTS</th>
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**Duration**
1 semester

**Module level**
undergraduate

**Other prerequisites**
Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).

**Contents**
German contents available but not translated yet.


**Intended learning outcomes**
German intended learning outcomes available but not translated yet.

Die Studierenden sind in der Lage, mit Hilfe grundlegender Konzepte und Modelle angeregte Zustände von Molekülen zu beschreiben.

**Courses**
(type, number of weekly contact hours, language — if other than German)
V + Ü (no information on SWS (weekly contact hours) and course language available)

**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) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)

**Allocation of places**
--

**Additional information**
--

**Referred to in LPO I**
(examination regulations for teaching-degree programmes)
--
### Module title
Mathematics for students in Chemistry and Biology

### Abbreviation
10-M-MCB-101-m01

### Module coordinator
Dean of Studies Mathematik (Mathematics)

### Module offered by
Institute of Mathematics

### ECTS
5

### Method of grading
numerical grade

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

### Duration
1 semester

### Module level
undergraduate

### Other prerequisites
Registration for the exercise must be made via SB@home at the beginning of the course or as announced by the lecturer in accordance with the specified registration deadlines. Certain prerequisites must be met to qualify for admission to assessment (e.g., successful completion of a certain percentage of exercises). The lecturer will inform students about the respective details at the beginning of the course. Registration for the exercise will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew and have to register anew, too.

### Contents
Functional relations, differentiation and integration of functions in one variable, curve sketching, differentiation of functions in several variables, power series, ordinary differential equations, systems of linear equations, basic notions in statistics.

### Intended learning outcomes
The student is able to recognise and phrase simple 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 + Ü (no information on SWS (weekly contact hours) and course language available)

### 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)

### 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>
<tr>
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<tbody>
<tr>
<td>Physical and Theoretical Chemistry 3: Symmetry and Quantum Chemistry</td>
<td>08-PC3-092-m01</td>
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**Module coordinator**

lecturer of lecture "Quantenchemie"

**Module offered by**

Institute of Physical and Theoretical Chemistry

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**Duration**

1 semester

**Module level**

undergraduate

**Other prerequisites**

Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).

**Contents**

This module deals with basics of quantum chemistry and symmetry in chemistry.

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Der/Die Studierende verfügt über Kenntnisse der Quantenchemie und der Symmetrie in der Chemie und kann diese gezielt anwenden.

**Courses**

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

V + Ü (no information on SWS (weekly contact hours) and course language available)

**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) 1 to 3 written examinations (1 written examination: 90 minutes; 2 written examinations: 60 or 90 minutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)

**Allocation of places**

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**Additional information**

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

--
Module title | Abbreviation
--- | ---
Inorganic Chemistry 1 | 08-AC1-102-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)
--- | --- | ---
21 | numerical grade | --

Duration | Module level | Other prerequisites
--- | --- | ---
1 semester | undergraduate | By way of exception, additional prerequisites are listed in the section on assessments.

Contents

German contents available but not translated yet.


Intended learning outcomes

German intended learning outcomes available but not translated yet.


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

This module has 4 components; information on courses listed separately for each component.

- 08-AC1-1-102: V + V + Ü (no information on language and number of weekly contact hours available)
- 08-AC1-2-102: P (no information on language and number of weekly contact hours available)
- 08-AC1-3-102: V (no information on language and number of weekly contact hours available)
- 08-AC1-4-102: P (no information on language and number of weekly contact hours available)

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)

This module has the following 4 assessment components. Unless stated otherwise, students must pass all of these assessment components to pass the module as a whole.

Assessment in module component 08-AC1-2-102: Praktikum Anorganische Chemie 1 (Lab Course Inorganic Chemistry 1)

- 6 ECTS credits, pass / fail
- pre/post-experiment examination talks (Vor-/Nachtestate, approx. 15 minutes each), log (approx. 5 to 10 pages)
- Assessment offered: once a year, winter semester
- Language of assessment: German, English
- Only after successful completion of module components: Module component 08-AC1-2 can only be taken by students who successfully completed module component 08-AC1-4.
Assessment in module component 08-AC1-3-102: Erläuterungen zum Praktikum Anorganische Chemie 1 (Discussion of Experiments Performed in Lab Course Inorganic Chemistry 1)
- 4 ECTS credits, numerical grading
- a) 1 to 3 written examinations (approx. 45, 60 or 90 minutes each) or x) oral examination of one candidate each (approx. 20 minutes) or x) oral examination in groups of 2 candidates (approx. 30 minutes total)
- Language of assessment: German, English

Assessment in module component 08-AC1-4-102: Sicheres Arbeiten in chemischen Laboratorien (Chemical Laboratory Safety)
- 1 ECTS credit, pass / fail
- Assessment of practical assignments
- Language of assessment: German, English

Assessment in module component 08-AC1-1-102: Grundlagen der Allgemeinen und Anorganischen Chemie (Fundamental Principles of General and Inorganic Chemistry)
- 10 ECTS credits, numerical grading
- a) 1 to 3 written examinations (1 written examination: approx. 90 minutes, 2 written examinations: 60 minutes or 90 minutes each, 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups of 2 candidates (approx. 30 minutes)
- Language of assessment: German or English
- Additional prerequisites: admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually no more than 2 incidents of unexcused absence).

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 (1) 1. Chemie "Allgemeine und Anorganische Chemie" und "Physikalische und Analytische Chemie"
§ 62 (1) 1. Chemie "Allgemeine und Anorganische Chemie"; "Physikalische und Analytische Chemie"
### Inorganic Chemistry 2

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#### Contents

German contents available but not translated yet.


#### Intended learning outcomes

German intended learning outcomes available but not translated yet.


#### Courses

V + V (no information on SWS (weekly contact hours) and course language available)

#### 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) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)

Language of assessment: German, English

#### 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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<td>Institute of Inorganic Chemistry</td>
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<td>By way of exception, additional prerequisites are listed in the section on assessments.</td>
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### Contents

German contents available but not translated yet.


### Intended learning outcomes

German intended learning outcomes available but not translated yet.


### Courses

This module comprises 2 module components. Information on courses will be listed separately for each module component.

- 08-AC3-1-102: V + Ü (no information on SWS (weekly contact hours) and course language available)
- 08-AC3-2-102: P (no information on SWS (weekly contact hours) and course language available)

### Method of assessment

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

**Assessment in module component 08-AC3-1-102: Elemental Organic Chemistry**

- 4 ECTS, Method of grading: numerical grade
- a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)
- Language of assessment: German, English
- Other prerequisites: Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).

**Assessment in module component 08-AC3-2-102: Inorganic Chemistry 2 (lab)**

- 5 ECTS, Method of grading: (not) successfully completed
• pre/post-experiment examination talks (Vor-/Nachtestate, approx. 15 minutes each), log (approx. 5 to 10 pages)
• Language of assessment: German, English

**Allocation of places**
--

**Additional information**
--

**Referred to in LPO I** (examination regulations for teaching-degree programmes)
--
Module title | Abbreviation
--- | ---
Chemistry of the Elements and Analytical Chemistry | 08-AS1-102-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)
--- | --- | ---
11 | numerical grade | 08-AC1 (module component 08-AC1-4 only) and 08-OC3 (module component 08-OC3-2 only)

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

Contents

German contents available but not translated yet.


Intended learning outcomes

German intended learning outcomes available but not translated yet.


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

This module comprises 2 module components. Information on courses will be listed separately for each module component.

- 08-AN1-2-102: P (no information on SWS (weekly contact hours) and course language available)
- 08-AS1-1-102: V + V (no information on SWS (weekly contact hours) and course language available)

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)

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component 08-AN1-2-102: Analytical Chemistry (lab)

- 5 ECTS, Method of grading: (not) successfully completed
- Vortestate (pre-experiment exams), assessment of practical performance, Nachtestate (post-experiment exams), log (5 to 10 pages)
- Assessment offered: once a year, summer semester
- Language of assessment: German, English

Assessment in module component 08-AS1-1-102: Chemistry of the elements Chemistry of the elements

- 6 ECTS, Method of grading: numerical grade
- a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)
- Language of assessment: German or English
Module Catalogue for the Subject
FOKUS Chemistry
Bachelor’s with 1 major, 180 ECTS credits

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<td>Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).</td>
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**Contents**

German contents available but not translated yet.


**Intended learning outcomes**

German intended learning outcomes available but not translated yet.


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

V + V + Ü (no information on SWS (weekly contact hours) and course language available)

**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) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)

Language of assessment: German, English

**Allocation of places**

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**Additional information**

--

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

--
Module title | Abbreviation
--- | ---
Organic Chemistry 3 | 08-OC3-102-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)
--- | --- | ---
15 | numerical grade | 08-OC1 and 08-AC1 (module component 08-AC1-2 only) or 08-OC1 and 08-AN1 (module component 08-AN1-2 only), 08-OC1 may be replaced by 08-OC1-GHR

Duration | Module level | Other prerequisites
--- | --- | ---
1 semester | undergraduate | By way of exception, additional prerequisites are listed in the section on assessments.

Contents

German contents available but not translated yet.

Das Modul behandelt im Schwerpunkt polare Umlagerungen, Olefinierungsreaktionen, pericyclische Reaktio-
nen, Carbene, Nitrile und Radikale. Im Modul werden Grundkenntnisse der stereoselektiven Synthese, asymme-
trischen Katalyse, Organometallchemie und Retrosynthese vermittelt. Das Modul bietet die Möglichkeit, das Wis-
sen der Grundvorlesung(en) praktisch anzuwenden. Die Studierenden experimentieren nach einer Sicherheits-
einweisung selbstständig im Labor. Neben der Durchführung der Versuche wird das Wissen der Studierenden in
Kolloquien und Protokollen geprüft. Schwerpunkte sind der sichere Umgang mit Gefahrenstoffen, einfache ex-
perimentelle Grundoperationen der organischen Chemie, einfache bis mehrstufige Synthesen sowie Analyse der
Produkte.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden sind in der Lage, Olefinierungsreaktionen zu formulieren. Er/Sie kann stereoselektive Synthe-
sen und asymmetrische Katalysen entwickeln. Er/Sie kann organometallchemische Reaktionen darstellen. Der/
Die Studierende kann ein Molekül retrosynthetisch analysieren. Die Studierenden sind in der Lage, sicher mit Ge-
fahrenstoffen umzugehen. Er/Sie kann experimentelle Grundoperationen der organischen Chemie durchführen.
Er/Sie kann die Produkte in Bezug auf Ausbeute und Reinheit analysieren sowie mögliche Fehlerquellen identifi-
zieren. Die Studierenden können die in der Vorlesung erarbeiteten theoretischen Inhalte mit den praktischen Ex-
perimenten im Labor vernetzen.

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

This module comprises 2 module components. Information on courses will be listed separately for each module
component.

- 08-OC3-1-102: V + Ü (no information on SWS (weekly contact hours) and course language available)
- 08-OC3-2-102: P (no information on SWS (weekly contact hours) and course language available)

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

Assessment in this module comprises the assessments in the individual module components as specified be-
low. Unless stated otherwise, successful completion of the module will require successful completion of all indi-
vidual assessments.

Assessment in module component 08-OC3-1-102: Organic Chemistry 3 Organic Chemistry 3

- 6 ECTS, Method of grading: numerical grade
- a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx.
60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one
candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)
- Language of assessment: German, English
- Other prerequisites: Admission prerequisite to assessment: successful completion of exercises in the
respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully
completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).

**Assessment in module component 08-OC3-2-102: Organic Chemistry - lab 1**
- 9 ECTS, Method of grading: (not) successfully completed
- pre/post-experiment examination talks (Vor-/Nachtestate, approx. 15 minutes each), log (approx. 5 to 10 pages)
- Assessment offered: once a year, summer semester
- Language of assessment: German, English

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

| -- |
Module title: Organic Chemistry 4  
Abbreviation: 08-OC4-102-m01

Module coordinator: holder of the Chair of Organic Chemistry II  
Module offered by: Institute of Organic Chemistry

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

Duration: 1 semester  
Module level: undergraduate  
Other prerequisites: By way of exception, additional prerequisites are listed in the section on assessments.

Contents

German contents available but not translated yet.


Intended learning outcomes

German intended learning outcomes available but not translated yet.


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

This module comprises 2 module components. Information on courses will be listed separately for each module component.

- 08-OC4-1-102: V + Ü (no information on SWS (weekly contact hours) and course language available)
- 08-OC4-2-102: P (no information on SWS (weekly contact hours) and course language available)

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)

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component 08-OC4-1-102: Organic Chemistry 4

- 5 ECTS, Method of grading: numerical grade
- a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)
- Language of assessment: German or English
- Only after successful completion of module components: 08-OC1 or 08-OC1-GHR
- Other prerequisites: Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).

Assessment in module component 08-OC4-2-102: Organic Chemistry - advanced laboratory course for students of chemistry

- 5 ECTS, Method of grading: (not) successfully completed
• pre/post-experiment examination talks (Vor-/Nachtestate, approx. 15 minutes each), log (approx. 5 to 10 pages)
• Assessment offered: once a year, winter semester
• Language of assessment: German, English
• Only after successful completion of module components: 08-OC3 (module component 08-OC3-2 only) or 08-OC3P

### 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 (1) 2. Chemie "Organische und Bioorganische Chemie"
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</table>

<table>
<thead>
<tr>
<th>Duration</th>
<th>Module level</th>
<th>Other prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
<td>Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).</td>
</tr>
</tbody>
</table>

**Contents**

The module introduces students to the basics of a programming language and gives applications to problems related to chemistry.

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Die Studierenden können einfach Grundlagen der Programmiersprache beschreiben und auf chemierelevante Probleme anwenden.

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

S + Ü (no information on SWS (weekly contact hours) and course language available)

**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)

practical examination: completion of programming exercises and oral description of algorithms used

Language of assessment: German, English

**Allocation of places**

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**Additional information**

--

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

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### Module Catalogue for the Subject FOKUS Chemistry

Bachelor's with 1 major, 180 ECTS credits

<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific Discussion</td>
<td>08-WD-FOKUS-112-m01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>degree programme coordinator FOKUS Chemie (Chemistry)</td>
</tr>
<tr>
<td></td>
<td>Faculty of Chemistry and Pharmacy</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>ECTS</th>
<th>Method of grading</th>
<th>Only after succ. compl. of module(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>numerical grade</td>
<td>Where applicable, specific modules/module components as specified by supervisor (cf. Section 12 Subsection 4 FSB (subject-specific provisions)).</td>
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<table>
<thead>
<tr>
<th>Duration</th>
<th>Module level</th>
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</thead>
<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</tbody>
</table>

### Contents

German contents available but not translated yet.

Das Modul bietet die Möglichkeit, wissenschaftliche Themen aus verschiedenen Fachbereichen in Form von Vorträgen zu präsentieren und anschließend zu diskutieren.

### Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden sind in der Lage wissenschaftliche Fragestellungen zielgruppengerecht aufzuarbeiten und zu präsentieren sowie über aktuelle wissenschaftliche Fragestellungen zu diskutieren.

### Courses

Ü (no information on SWS (weekly contact hours) and course language available)

### 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) oral examination of one candidate each (approx. 45 minutes) or b) 2 oral examinations of one candidate each (approx. 30 minutes each) or c) 3 oral examinations of one candidate each (approx. 20 minutes each) |
| Language of assessment: German, 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>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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</thead>
<tbody>
<tr>
<td>Advanced research lab course</td>
<td>08-FOP-112-m01</td>
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</table>

<table>
<thead>
<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
</tr>
</thead>
<tbody>
<tr>
<td>head of the research group offering the module</td>
<td>Faculty of Chemistry and Pharmacy</td>
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<tbody>
<tr>
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</thead>
<tbody>
<tr>
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<td>undergraduate</td>
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</tbody>
</table>

**Contents**

German contents available but not translated yet.

Das Modul bietet die Möglichkeit sich mit Hilfe der für den jeweiligen Fachbereich üblichen wissenschaftlichen Arbeitstechniken und Methoden vertieft in ein Forschungsthema einzuarbeiten.

**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 (no information on SWS (weekly contact hours) and course language available)

**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)

Talk (approx. 15 minutes) or written report (approx. 10 to 20 pages)
Language of assessment: German, English

**Allocation of places**

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**Additional information**

Additional information on module duration: 8 weeks.

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

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<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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</thead>
<tbody>
<tr>
<td>FOKUS Foreign Studies</td>
<td>08-FAP-112-m01</td>
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<tbody>
<tr>
<td>degree programme coordinator FOKUS Chemie (Chemistry)</td>
<td>Faculty of Chemistry and Pharmacy</td>
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### Contents

The internship is carried out at universities abroad and can be embedded within offered study programs (e.g. Erasmus). The content requirements should comply with those of the electives of the Chemistry Bachelor program at the University of Würzburg (what has to be ascertained in advance under discussion with the module coordinator).

### Intended learning outcomes

The students are familiar with working methods at universities abroad. Besides professional competences they have also acquired language and social skills.

### Courses

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

P (no information on SWS (weekly contact hours) and course language available)

### 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)

Talk (approx. 15 minutes) or written report (approx. 10 to 20 pages)

Language of assessment: German, English

### Allocation of places

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### Additional information

Additional information on module duration: 8 weeks.

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

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<table>
<thead>
<tr>
<th>Module title</th>
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<tbody>
<tr>
<td>FOKUS Industrial work experience</td>
<td>08-FIP-112-m01</td>
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## Contents

German contents available but not translated yet.

Das Praktikum wird in einem industriellen Betrieb durchgeführt. Die inhaltlichen Anforderungen sollen denen eines im Bachelor-Studienganges Chemie (180 ECTS) angebotenen Praktikums entsprechen, was im Vorfeld mit dem Verantwortlichen abzusprechen ist.

## Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden sind mit Arbeitsweisen in der Industrie vertraut. Sie haben neben Fachkompetenz auch Kompetenzen im sozialen Bereich erworben.

## Courses

P (no information on SWS (weekly contact hours) and course language available)

## Method of assessment

Talk (approx. 15 minutes) or written report (approx. 10 to 20 pages)

Language of assessment: German, English

## Allocation of places

--

## Additional information

Additional information on module duration: 8 weeks.

## Referred to in LPO I

(examination regulations for teaching-degree programmes)

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<table>
<thead>
<tr>
<th>Module title</th>
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<tbody>
<tr>
<td>Bachelor Thesis FOKUS Chemistry</td>
<td>08-BA-FOKUS-112-m01</td>
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<tbody>
<tr>
<td>head of the research group offering the module</td>
<td>Chair of Biochemistry</td>
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**Contents**

The module enables the processing of a defined problem within a specified period by applying the scientific methods learned in the course of study.

**Intended learning outcomes**

The student has the ability to deal with a defined problem/issue using scientific methods and to document the results.

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

no courses assigned

**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 thesis (approx. 40 pages)
Language of assessment: German, English

**Allocation of places**

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**Additional information**

Additional information on module duration: 8 weeks.

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

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