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
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<td>Scientific Discussion</td>
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<td>Thesis</td>
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Content and Objectives of the Programme

No translation available.
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:

ASPO2009

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

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.
Compulsory Courses
(150 ECTS credits)
General and Inorganic Chemistry
(47 ECTS credits)
### Module title

**Inorganic Chemistry 1**

**Abbreviation**

08-AC1-102-m01

### Module coordinator

Lecturer of lecture "Experimentalchemie" (Experimental Chemistry)

### Module offered by

Institute of Inorganic Chemistry

### ECTS

21

### 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

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 is creditable for 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).
# Module Catalogue for the Subject

**FOKUS Chemistry**

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

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<th>Abbreviation</th>
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<td>Inorganic Chemistry 2</td>
<td>08-AC2-102-m01</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
</tr>
</thead>
<tbody>
<tr>
<td>lecturer of lecture &quot;Festkörperchemie&quot; (Solid State Chemistry)</td>
<td>Institute of Inorganic Chemistry</td>
</tr>
</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>6</td>
<td>numerical grade</td>
<td>--</td>
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<table>
<thead>
<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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</tbody>
</table>

## 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)

<table>
<thead>
<tr>
<th>Method of assessment</th>
<th>(type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)</th>
</tr>
</thead>
<tbody>
<tr>
<td>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)</td>
<td>Language of assessment: German, English</td>
</tr>
</tbody>
</table>

## 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 3 | 08-AC3-102-m01

Module coordinator | Module offered by
--- | ---
lektor of lecture "Elementorganische Chemie" (Elemental Organic Chemistry) | Institute of Inorganic Chemistry

ECTS | Method of grading | Only after succ. compl. of module(s)
--- | --- | ---
9 | 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 | 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-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 (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for 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-AC3-1-102: Elemental Organic Chemistry 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)
<p>| | |</p>
<table>
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<th></th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>5 ECTS, Method of grading: (not) successfully completed</td>
</tr>
<tr>
<td></td>
<td>pre/post-experiment examination talks (Vor-/Nachtestate, approx. 15 minutes each), log (approx. 5 to 10 pages)</td>
</tr>
<tr>
<td></td>
<td>Language of assessment: German, English</td>
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**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 Catalogue for the Subject
### FOKUS Chemistry
#### Bachelor’s with 1 major, 180 ECTS credits

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<td>Chemistry of the Elements and Analytical Chemistry</td>
<td>08-AS1-102-m01</td>
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</table>

<table>
<thead>
<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
</tr>
</thead>
<tbody>
<tr>
<td>lecturer of lecture &quot;Chemie der Hauptgruppenelemente&quot; (Chemistry of Main-group Elements)</td>
<td>Institute of Inorganic Chemistry</td>
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</table>

<table>
<thead>
<tr>
<th>ECTS</th>
<th>Method of grading</th>
<th>Only after succ. compl. of module(s)</th>
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<td>11</td>
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<td>08-AC1 (module component 08-AC1-4 only) and 08-OC3 (module component 08-OC3-2 only)</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>
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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-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

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
### 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) 1. Chemie "Allgemeine und Anorganische Chemie"; "Physikalische und Analytische Chemie"
Organic Chemistry
(39 ECTS credits)
### Module title
Organic Chemistry 1

### Abbreviation
08-OC1-092-m01

### Module coordinator
holder of the Professorship of Organic Chemistry

### Module offered by
Institute of Organic Chemistry

### ECTS
5

### Method of grading
--

### 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
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 Eliminierungreaktionen sowie der Syntheseplanung vermittelt.

### Intended learning outcomes

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

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

### Allocation of places
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### Additional information
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### Referred to in LPO I
§ 62 (1) 2. Chemie "Organische und Bioorganische Chemie"

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Bachelor's with 1 major FOKUS Chemistry (2011)  JMU Würzburg • generated 17-Sep-2019 • exam. reg. data record Bachelor (180 ECTS) FOKUS Chemie - 2011  page 16 / 45
**Module title**

Organic Chemistry 2

**Abbreviation**

08-OC2-102-m01

**Module coordinator**

holder of the Chair of Physically Organic Chemistry

**Module offered by**

Institute of Organic Chemistry

**ECTS**

9

**Method of grading**

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.


**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 is creditable for 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**

--

**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

Module title  | Abbreviation
--- | ---
Organic Chemistry 3 | 08-OC3-102-m01

Module coordinator
holder of the Professorship of Organic Chemistry

Module offered by
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.


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-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

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-OC3-1-102: 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

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
Organic Chemistry 4

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>08-OC4-102-m01</th>
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### Module coordinator
holder of the Chair of Organic Chemistry II

### Module offered by
Institute of Organic Chemistry

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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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</thead>
<tbody>
<tr>
<td>10</td>
<td>numerical grade</td>
<td>--</td>
</tr>
</tbody>
</table>

### 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-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
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-/Nachtestat, 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"
Physical and Theoretical Chemistry
(38 ECTS credits)
Module title | Abbreviation
---|---
Physical Chemistry 1 | 08-PC1-092-m01

Module coordinator | Module offered by
lecturer of lecture "Grundlagen der Quantenmechanik and Spektroskopie" (Principles of Quantum Mechanics and Spectroscopy) | Institute of Physical and Theoretical Chemistry

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

Duration | Module level | Other prerequisites
1 semester | undergraduate | 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 is creditable for 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

--

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

--
Module title  | Abbreviation  
---|---
Physical Chemistry 2: Thermodynamics, Kinetics, Electrochemistry | 08-PC2-092-m01

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

ECTS  | Method of grading  | Only after succ. compl. of module(s)  
---|---|---
18 | 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 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 (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for 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-PC2-2-092: Physical Chemistry (lab)  

- 9 ECTS, Method of grading: (not) successfully completed
- Vortestate (pre-experiment exams, approx. 15 minutes each), assessment of practical performance, Nachtestate (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  

- 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).

<table>
<thead>
<tr>
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<tr>
<td>§ 62 (1) 1. Chemie &quot;Allgemeine und Anorganische Chemie&quot;; &quot;Physikalische und Analytische Chemie&quot;</td>
</tr>
</tbody>
</table>
### Module title

**Physical and Theoretical Chemistry 3: Symmetry and Quantum Chemistry**

### Abbreviation

08-PC3-092-m01

### Module coordinator

Lecturer of lecture "Quantenchemie"

### Module offered by

Institute of Physical and Theoretical Chemistry

### ECTS

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### Duration

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</tbody>
</table>

### 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

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

### Method of assessment

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

### 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
Physical Chemistry 4: Statistical Thermodynamics

Abbreviation
08-PC4-092-m01

Module coordinator
lecturer of lecture "Statistische Thermodynamik"

Module offered by
Institute of Physical and Theoretical Chemistry

ECTS
3

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

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

Allocation of places
--

Additional information
--

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

--
Module title | Theoretical Models in Chemistry
---|---
Abbreviation | 08-TC-092-m01

Module coordinator | ECTS 3 Method of grading Only after succ. compl. of module(s) numerical grade --
Module offered by | Institute of Physical and Theoretical Chemistry

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 is creditable for 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)
Basics of Natural Sciences
(21 ECTS credits)
Module title  
Biochemistry

Abbreviation  
o8-BC-092-m01

Module coordinator  
holder of the Chair of Biochemistry

Module offered by  
Chair of Biochemistry

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

Duration  |  Module level  |  Other prerequisites
--- | --- | ---
2 semester  |  undergraduate  |  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.

Der/Die Studierende verfügt über Grundlagenkenntnisse der Biochemie. Er/Sie ist in der Lage, die grundlegenden biochemischen Prozesse in zellulären Systemen zu beschreiben.

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 is creditable for 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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<th>Module title</th>
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<tr>
<td>Mathematics for students in Chemistry and Biology</td>
<td>10-M-MCB-101-m01</td>
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<tr>
<td>Dean of Studies Mathematik (Mathematics)</td>
<td>Institute of Mathematics</td>
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<th>Module level</th>
<th>Other prerequisites</th>
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<tr>
<td>1 semester</td>
<td>undergraduate</td>
<td>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.</td>
</tr>
</tbody>
</table>

**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 is creditable for 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>
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<td>Introduction to Physics for Students of Non-physics-related Minor Subjects</td>
<td>11-EFNF-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

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<tr>
<td>7</td>
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</table>

**Duration**
2 semester

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

**Method of assessment**
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**
--

**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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<tbody>
<tr>
<td>Practical Course Physics for Students of Non-physics-related Minor Subjects</td>
<td>11-PFNF-072-m01</td>
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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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<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</table>

**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**

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 is creditable for 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)

--
Scientific Discussion
(5 ECTS credits)
### 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>
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<td>08-WD-FOKUS-112-m01</td>
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<td>degree programme coordinator FOKUS Chemie (Chemistry)</td>
<td>Faculty of Chemistry and Pharmacy</td>
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<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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<td>1 semester</td>
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#### 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

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

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 is creditable for 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

--

#### Referred to in LPO I

(examination regulations for teaching-degree programmes)

--
Thesis

(10 ECTS credits)
<table>
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<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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<td>undergraduate</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**
(no type, number of weekly contact hours, language — if other than German)

**Method of assessment**
(written thesis (approx. 40 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)
--
Subject-specific Key Skills

(17 ECTS credits)
Compulsory Courses

(8 ECTS credits)
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<td>Toxicology and legal studies</td>
<td>03-TR-072-m01</td>
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<tbody>
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<td>lecturer of lecture &quot;Toxikologie und Rechtskunde&quot;</td>
<td>Faculty of Medicine</td>
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<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</table>

**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**

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

**Method of assessment**

written examination (approx. 90 minutes)

**Allocation of places**

--

**Additional information**

--

**Referred to in LPO I**

(examination regulations for teaching-degree programmes)

--
Module title          | Abbreviation
----------------------|--------------
Programming course for Chemistry Major | 08-PKC-102-m01

Module coordinator: Lecturer of lecture "Programmierkurs für Chemiker"
Module offered by: Institute of Physical and Theoretical Chemistry

ECTS | Method of grading | Other prerequisites
-----|-------------------|---------------------
5    | Only after succ. compl. of module(s) | 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).

Duration: 1 semester
Module level: undergraduate

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 is creditable for bonus)
practical examination: completion of programming exercises and oral description of algorithms used
Language of assessment: German, English

Allocation of places
-

Additional information
-

Referred to in LPO I (examination regulations for teaching-degree programmes)
-
Compulsory Electives
(9 ECTS credits)
### Module title
Advanced research lab course

### Abbreviation
08-FOP-112-m01

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

### Module offered by
Faculty of Chemistry and Pharmacy

<table>
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<td>(not) successfully completed</td>
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</table>

### Duration
1 semester

### Module level
undergraduate

### Other prerequisites
--

### 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
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)

--
## Module Catalogue for the Subject
**FOKUS Chemistry**
Bachelor's with 1 major, 180 ECTS credits

### Module title
- **FOKUS Foreign Studies**

### Abbreviation
- 08-FAP-112-m01

### Module coordinator
- degree programme coordinator FOKUS Chemie (Chemistry)

### Module offered by
- Faculty of Chemistry and Pharmacy

### ECTS
- 9

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

### (not) successfully completed
- --

### Duration
- 1 semester

### Module level
- undergraduate

### Other prerequisites
- --

### 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
- **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)

---

Bachelor's with 1 major FOKUS Chemistry (2011)  JMU Würzburg • generated 17-Sep-2019 • exam. reg. data record Bachelor (180 ECTS) FOKUS Chemie - 2011  page 44 / 45
Module title | Abbreviation
--- | ---
FOKUS Industrial work experience | 08-FIP-112-m01

| Module coordinator | Module offered by |
--- | ---
degree programme coordinator FOKUS Chemie (Chemistry) | Faculty of Chemistry and Pharmacy |

| ECTS | Method of grading | Only after succ. compl. of module(s) |
--- | --- | ---
9 | (not) successfully completed | -- |

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

### 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

| type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus |
--- | ---
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) --