Subdivided Module Catalogue
for the Subject
Chemistry
as vertieft studiertes Fach (studied with a focus on the scientific discipline)
with the degree "Erste Staatsprüfung für das Lehramt an Gymnasien"

Examination regulations version: 2009
Responsible: Faculty of Chemistry and Pharmacy
Abbreviations used

Course types: E = field trip, K = colloquium, O = conversatorium, P = placement/lab course, R = project, S = seminar, T = tutorial, Ü = exercise, V = lecture

Term: SS = summer semester, WS = winter semester

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

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

Other: A = thesis, LV = course(s), PL = assessment(s), TN = participants, VL = prerequisite(s)

Conventions

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

Notes

Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should the module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with

the general regulations governing the degree subject described in this module catalogue:

LASPO2009

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

12-Jan-2012 (2011-105)

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.
# Module Catalogue for the Subject Chemistry

**LA Gymnasien**

The subject is divided into

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<th>Module title</th>
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<th>Method of grading</th>
<th>page</th>
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<td><strong>Scientific Discipline (92 ECTS credits)</strong></td>
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<tr>
<td><strong>Compulsory Courses (92 ECTS credits)</strong></td>
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<tr>
<td>08-AC1-LA-102-m01</td>
<td>Inorganic Chemistry 1 (teaching degree)</td>
<td>20</td>
<td>NUM</td>
<td>27</td>
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<tr>
<td>08-AC2-LAGY-102-m01</td>
<td>Inorganic Chemistry of the Elements (teaching degree for secondary schools)</td>
<td>3</td>
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<tr>
<td>08-AS1-LAGY-102-m01</td>
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<td>08-OC1-092-m01</td>
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<tr>
<td>08-OC2-LAGY-102-m01</td>
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<tr>
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<tr>
<td>08-OC4-LAGY-102-m01</td>
<td>Organic Chemistry 4 - advanced course</td>
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<tr>
<td>08-OC-Spec-LAGY-092-m01</td>
<td>Practical spectroscopy 1 (teaching degree for secondary schools)</td>
<td>3</td>
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<td>32</td>
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<tr>
<td>08-PC-TKE-LAGY-092-m01</td>
<td>Thermodynamics, Kinetics, Electrochemistry</td>
<td>9</td>
<td>NUM</td>
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<tr>
<td>08-PC-QMS-LAGY-092-m01</td>
<td>Principles of quantum mechanics and spectroscopy</td>
<td>5</td>
<td>NUM</td>
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<tr>
<td>08-PC-Prakt-LAGY-092-m01</td>
<td>Physical Chemistry lab (teaching degree for secondary schools)</td>
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<td>08-Forsch-LAGY-092-m01</td>
<td>Practical Research Course for Grammar School Teachers</td>
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<td>08-PC-VKM-LA-102-m01</td>
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<td>08-PC-Prakt-LAGY-092-m01</td>
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<td>08-BC-LAGY-092-m01</td>
<td>Biochemistry (teaching degree for secondary schools)</td>
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<td>08-Ch-Gy-ÜiV-092-m01</td>
<td>Exercises in Experimental Presentation, Intermediate School</td>
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<td><strong>Teaching (10 ECTS credits)</strong></td>
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<td>08-FD-Gru-G-092-m01</td>
<td>Introduction in Planning and Methods</td>
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<td>08-FD-CEx-092-m01</td>
<td>Chemistry Education, Part II</td>
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<td>08-FD-SinKo-092-m01</td>
<td>Chemistry Education, Part III</td>
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<td><strong>Freier Bereich (general as well as subject-specific electives)</strong></td>
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<tr>
<td>Teaching degree students must take modules worth a total of 15 ECTS credits in the area Freier Bereich (general as well as subject-specific electives) (Section 9 LASPO (general academic and examination regulations for teaching-degree programmes)). To achieve the required number of ECTS credits, students may take any modules from the areas below. Freier Bereich -- interdisciplinary: The interdisciplinary additional offer for a teaching degree can be found in the respective Annex &quot;Ergänzende Bestimmungen für den &quot;Freien Bereich&quot; im Rahmen des Studiums für ein Lehramt&quot;.</td>
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<td>08-AC3-LA-102-m01</td>
<td>Elemental Organic Chemistry (teaching degree for secondary schools)</td>
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<td>08-TC-LA-092-m01</td>
<td>Theoretical Models in Chemistry (teaching degree for secondary schools)</td>
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<td>Credits</td>
<td>Type</td>
<td>Number</td>
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<tr>
<td>08-PC-ESS-092-m01</td>
<td>Electronic structure and spectroscopy</td>
<td>3</td>
<td>NUM</td>
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<tr>
<td>08-OC3-LA-102-m01</td>
<td>Organic Chemistry 3 (teaching degree for secondary schools)</td>
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<tr>
<td>08-PC3-092-m01</td>
<td>Physical and Theoretical Chemistry 3: Symmetry and Quantum Chemistry</td>
<td>6</td>
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<tr>
<td>08-PC4-092-m01</td>
<td>Physical Chemistry 4: Statistical Thermodynamics</td>
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<td>03-TR-072-m01</td>
<td>Toxicology and legal studies</td>
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<td>NUM</td>
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<tr>
<td>08-FBC2-PV-101-m01</td>
<td>Preparation of Exams Chemistry</td>
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</table>

**Teaching**

(Freier Bereich (general as well as subject-specific electives) -- subject specific)

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
<th>Type</th>
<th>Number</th>
</tr>
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<tr>
<td>08-FD-WPF-WA-092-m01</td>
<td>Guidance in Self-reliant Scientific Work</td>
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<tr>
<td>08-FD-WPF-LLL-092-m01</td>
<td>Extracurricular Sites</td>
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<td>B/NB</td>
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<tr>
<td>08-FBC1-092-m01</td>
<td>Instruction of pupils in making chemical experiments</td>
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<td>B/NB</td>
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<tr>
<td>08-FD-WP-102-m01</td>
<td>W- and P-Courses in Secondary Classes of Gymnasium</td>
<td>3</td>
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**Thesis (20 ECTS credits)**

Preparation of a written Hausarbeit (thesis) in accordance with the provisions of Section 29 LPO I (examination regulations for teaching-degree programmes) is a prerequisite for teaching degree students to be admitted to the Erste Staatsprüfung (First State Examination). In accordance with the provisions of Section 29 LPO I, students studying for a teaching degree Gymnasium may write this thesis in one of the subjects they selected as vertieft studiertes Fach (subject studied with a focus on the scientific discipline) or in the subject Erziehungswissenschaften (Educational Science). Pursuant to Section 29 Subsection 1 Sentence 2 LPO I, students may also choose to write an interdisciplinary thesis.

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Title</th>
<th>Credits</th>
<th>Type</th>
<th>Number</th>
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<tr>
<td>08-Ch-HA-GY-092-m01</td>
<td>Admission work (Chemistry for Grammer School Teachers)</td>
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<td>NUM</td>
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<tr>
<td>Module title</td>
<td>Abbreviation</td>
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<td></td>
</tr>
<tr>
<td>Toxicology and legal studies</td>
<td>03-TR-072-m01</td>
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</table>

**Module coordinator**
lecturer of lecture "Toxikologie und Rechtskunde"

**Module offered by**
Faculty of Medicine

<table>
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<tr>
<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>3</td>
<td>numerical grade</td>
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</tr>
</tbody>
</table>

**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**
--

**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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</thead>
<tbody>
<tr>
<td>Basic Mathematics (teaching degree)</td>
<td>08-PC-VKM-LA-102-m01</td>
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<table>
<thead>
<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
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</thead>
<tbody>
<tr>
<td>lecturer of block course &quot;Mathematik&quot; (Mathematics)</td>
<td>Institute of Physical and Theoretical 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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<tbody>
<tr>
<td>2</td>
<td>(not) successfully completed</td>
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<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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</tr>
</tbody>
</table>

**Contents**

German contents available but not translated yet.


**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Der/Die Studierende erlernt den Umgang mit mathematischen Methoden. Er/Sie ist in der Lage, diese auf konkrete Fragestellungen in der Chemie anzuwenden.

**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)

exercises (4 work sheets)

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)

--
Module title | Chemistry Education, Part II
---|---
Abbreviation | 08-FD-CEx-092-m01

Module coordinator | holder of the Professorship of Didactics of Chemistry
Module offered by | Institute of Inorganic Chemistry

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

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

Contents

German contents available but not translated yet.

Das Modul behandelt die Auswahl und Präsentation von Experimenten im Chemieunterricht an der Realschule/am Gymnasium.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Der/Die Studierende verfügt über einen Grundstock an schulartspezifischen Unterrichtsversuchen, kann diese vorbereiten und unter Beachtung relevanter Sicherheitsbestimmungen durchführen.

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

S (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. 60 minutes)

Allocation of places

Number of places: 25. Places will be allocated according to the number of subject semesters. Among applicants with the same number of subject semesters, places will be allocated by lot.

Additional information

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

§ 42 Chemie Fachdidaktik
§ 62 (1) 6. Chemie Didaktik
Module title | Abbreviation
---|---
Admission work (Chemistry for Grammer School Teachers) | 08-Ch-HA-GY-092-m01

| Module coordinator | Module offered by |
---|---
head of the research group offering the module | Faculty of Chemistry and Pharmacy |

| ECTS | Method of grading | Only after succ. compl. of module(s) |
---|---|---|
10 | numerical grade | Where applicable, specific modules/module components as specified by supervisor. |

| Duration | Module level | Other prerequisites |
---|---|---|
1 semester | undergraduate | Depending on their choice of topic, students who are writing their Hausarbeit (thesis) according to Section 29 LPO I (examination regulations for teaching-degree programmes) in the vertieft studiertes Fach (subject studied with a focus on the scientific discipline) Chemie (Chemistry) are highly recommended to complete module 08-Forsch-LAGY directly before completing module 08-Ch-HA-GY. |

### Contents

German contents available but not translated yet.

Selbstständige wissenschaftliche Bearbeitung eines gemäß § 29 LPO mit einer prüfungsberechtigten Dozentin/einem prüfungsberechtigten Dozenten vereinbarten Themas aus den Teilbereichen des Faches Chemie oder der Didaktik der Chemie.

### Intended learning outcomes

German intended learning outcomes available but not translated yet.


### 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 (Zulassungsarbeit, approx. 40 pages)
Language of assessment: German, exceptions in accordance with Section 29 LPO I (examination regulations for teaching degree programmes)

### 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
Introduction in Planning and Methods

Abbreviation
08-FD-Gru-G-092-m01

Module coordinator
holder of the Professorship of Didactics of Chemistry

Module offered by
Institute of Inorganic Chemistry

ECTS
5

Method of grading
numerical grade

Only after succ. compl. of module(s)

Duration
1 semester

Module level
undergraduate

Other prerequisites

Contents

German contents available but not translated yet.

Das Modul führt in die Grundlagen der Fachdidaktik Chemie ein.

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-FD-Gru-RSGy-2-092: S (no information on SWS (weekly contact hours) and course language available)
- 08-FD-Einf-1-092: 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-FD-Gru-RSGy-2-092: Basics of Planning and Organization of Chemistry Education

- 2 ECTS, Method of grading: (not) successfully completed
- Testat (exam, approx. 20 minutes)
- Language of assessment: German or English

Assessment in module component 08-FD-Einf-1-092: Introduction in Chemistry Education

- 3 ECTS, Method of grading: numerical grade
- written examination (approx. 90 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)

§ 36 (1) 7. Didaktik der Grundschule Chemie
§ 38 (1) 1. Didaktik der Hauptschule Chemie
§ 38 (1) 1. Didaktik der Mittelschule Chemie
§ 42 Chemie Fachdidaktik
§ 62 (1) 6. Chemie Didaktik
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<th>Module title</th>
<th>Abbreviation</th>
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<tr>
<td>Exercises in Experimental Presentation, Intermediate School</td>
<td>08-Ch-Gy-ÜiV-092-m01</td>
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<thead>
<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
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<tbody>
<tr>
<td>lecturers of the three lectures offered in this module</td>
<td>Faculty of Chemistry and Pharmacy</td>
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<table>
<thead>
<tr>
<th>Duration</th>
<th>Module level</th>
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<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</table>

### Contents

German contents available but not translated yet.

Im Rahmen dieses Moduls werden von den Studierenden Vorträge mit Demonstrationen auf verschiedenen Gebieten der Chemie konzipiert, vorbereitet und präsentiert.

### Intended learning outcomes

German intended learning outcomes available but not translated yet.


### Courses

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

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)

one talk each in the fields of inorganic, organic and physical chemistry including demonstrations (approx. 45 minutes each)

Assessment offered: once a year, winter semester

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) 5. Chemie "Übungen im Vortragen mit Demonstrationen"
### Module Catalogue for the Subject Chemistry LA Gymnasien

<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>Organic Chemistry - laboratory course (teaching degree for secondary schools)</td>
<td>08-OC-Prakt-LAGY-092-m01</td>
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<th>Module offered by</th>
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<td>lecturers Organische Chemie (Organic Chemistry)</td>
<td>Institute of Organic Chemistry</td>
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<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</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)

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)

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 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) 2. Chemie "Organische und Bioorganische Chemie"
### Module title

Physics lab (teaching degree for secondary schools)

### Abbreviation

08-PH-Prakt-LAGY-092-m01

### Module coordinator

lecturers Physikalische Chemie (Physical Chemistry)

### Module offered by

Institute of Physical and Theoretical Chemistry

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### Duration

1 semester

### Module level

undergraduate

### Other prerequisites

--

### Contents

This module deals with basic experiments in physics.

### Intended learning outcomes

German intended learning outcomes available but not translated yet.

Der/Die Studierende kann grundlegende Versuche zur Physik planen, durchführen und auswerten.

### 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)

pre/post-experiment examination talks (Vor-/Nachtestate, approx. 15 minutes each), log (approx. 5 to 10 pages)

Language of assessment: German or English

### Allocation of places

--

### Additional information

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

§ 62 (1) 3. Chemie "Physik"
Module title: Practical Research Course for Grammar School Teachers
Abbreviation: 08-Forsch-LAGY-092-m01

Module coordinator: Lecturer of the respective research group
Module offered by: Faculty of Chemistry and Pharmacy

ECTS: 8
Method of grading: Numerical grade
Only after successful completion of module(s)

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

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):
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):
Written thesis (approx. 20 pages)
Language of assessment: German or English

Allocation of places:
--

Additional information:
--

Referred to in LPO I (examination regulations for teaching-degree programmes):
§ 62 (1) 4. Chemie "Forschungsorientiertes Laborpraktikum"
### Module Catalogue for the Subject Chemistry

**LA Gymnasien**

#### Module title

Thermodynamics, Kinetics, Electrochemistry

#### Abbreviation

08-PC-TKE-LAGY-092-m01

#### Module coordinator

Lecturer of lecture "Thermodynamik, Kinetik, Elektrochemie"

#### Module offered by

Institute of Physical and Theoretical Chemistry

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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>
</tr>
</tbody>
</table>

### 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, die Hauptsätze der Thermodynamik zu erklären. Er/Sie kann thermodynamische Aspekte von Lösungen, Gasen, Mischphasen sowie elektrochemischen Reaktionen darstellen. Die Studierenden können chemische Reaktionen auf kinetischer Ebene interpretieren.

### Courses

(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

--

### Referred to in LPO I

(examination regulations for teaching-degree programmes)

### 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

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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.

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
--

### Additional information
--

### Referred to in LPO I (examination regulations for teaching-degree programmes)
§ 62 (1) 2. Chemie "Organische und Bioorganische Chemie"
Module title: Biochemistry (teaching degree for secondary schools)
Abbreviation: 08-BC-LAGY-092-m01

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

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
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
(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
2) oral examination of one candidate each (approx. 20 minutes) or
3) 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) 2. Chemie "Organische und Bioorganische Chemie"
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</table>

**Contents**

German contents available but not translated yet.

Das Modul vermittelt Chemieunterricht im sinnstiftenden Kontext.

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Der/Die Studierende besitzt Kenntnisse über die kontextbasierte Umsetzung von Unterrichtsinhalten im Chemieunterricht der Sekundarstufe II. Er/Sie kann die fachwissenschaftlichen Inhalte didaktisch integrieren und fächerübergreifend vernetzen.

**Courses**

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

S (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)

Testat (exam, approx. 20 minutes)

Language of assessment: German or English

**Allocation of places**

--

**Additional information**

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**Referred to in LPO I**

(examination regulations for teaching-degree programmes)

§ 62 (1) 6. Chemie Didaktik
### Module title
Principles of quantum mechanics and spectroscopy

### Abbreviation
08-PC-QMS-LAGY-092-m01

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

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

### ECTS
5

### 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.

Das Modul führt in die elementaren Grundlagen der Quantenmechanik ein. Anhand der Modelle Teilchen im Kasten, Harmonischer Oszillator und Starker Rotator werden Moleküle analysiert. Spektroskopische Schwerpunkte sind die Schwingungsspektroskopie, Drehimpulsquantelung, Mikrowellenspektroskopie und UV/VIS-Spektroskopie.

### Intended learning outcomes
The student is able to explain basic models of quantum mechanics and to apply them on molecules. He/She can outline different spectroscopical methods.

### 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)
Language of assessment: German or English

### Allocation of places
--

### Additional information
--

### Referred to in LPO I (examination regulations for teaching-degree programmes)
§ 62 (1) 1. Chemie "Allgemeine und Anorganische Chemie"; "Physikalische und Analytische Chemie"
### Guidance in Self-reliant Scientific Work

**Abbreviation**: 08-FD-WPF-WA-092-m01

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<td>Institute of Inorganic Chemistry</td>
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**Contents**

German contents available but not translated yet.

Anleitung zum selbständigen wissenschaftlichen Arbeiten.

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Der/Die Studierende ist in der Lage, ausgewählte Themenstellungen auf dem Gebiet der Chemiedidaktik auf wissenschaftlicher Basis selbständig zu bearbeiten. Dabei werden neben der Widerspiegelung des aktuellen Forschungsstandes Ansätze zur dynamischen Weiterentwicklung erarbeitet.

**Courses**

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

**Method of assessment**

presentation (approx. 30 minutes)

Language of assessment: German or English

**Allocation of places**

--

**Additional information**

--

**Referred to in LPO I**

(examination regulations for teaching-degree programmes)

--
**Module title**

Extracurricular Sites

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**Module coordinator**

holder of the Professorship of Didactics of Chemistry

**Module offered by**

Institute of Inorganic Chemistry

**ECTS**

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**Duration**

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<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</table>

**Contents**

German contents available but not translated yet.

Das Modul behandelt Möglichkeiten und Grenzen der Einbeziehung außerschulischer Lernorte in den Chemieunterricht.

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Der/Die Studierende ist in der Lage, außerschulische Lernorte, insbesondere Arbeiten in Schülerlaboren, zielführend in die Planung von Chemieunterricht einzubeziehen. Er/Sie kann diese Planungen in Schülerversuchen und deren aktive Betreuung umsetzen.

**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-FD-WPF-LLL-1-092: S (no information on SWS (weekly contact hours) and course language available)
- 08-FD-WPF-LLL-2-092: 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-FD-WPF-LLL-1-092: Opportunities of Extracurricular Sites**

- 2 ECTS, Method of grading: (not) successfully completed
- presentation of a project (approx. 30 minutes)
- Language of assessment: German or English

**Assessment in module component 08-FD-WPF-LLL-2-092: School Lab**

- 2 ECTS, Method of grading: (not) successfully completed
- successful supervision of experiments in learn-teach-lab
- Language of assessment: German or English

**Allocation of places**

--

**Additional information**

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

--
# 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

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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 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

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### Referred to in LPO I

(examination regulations for teaching-degree programmes)
## Module Catalogue for the Subject Chemistry
### LA Gymnasien

### Module title
Electronic structure and spectroscopy

### Abbreviation
08-PC-ESS-092-m01

### Module coordinator
Lecturer of lecture "Elektronische Struktur und Spektroskopie" (Electronic Structure and Spectroscopy)

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

### ECTS
3

### 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 vermittelt Grundlagenwissen in den Bereichen Atom- und Molekülbau sowie der Spektroskopie.

### Intended learning outcomes
Der/Die Studierende kann die Kenntnisse des Atom- und Molekülbaus sowie die Grundlagen der Spektroskopie gezielt 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)

### Language of assessment
German or English

### Allocation of places
--

### Additional information
--

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

--
**Module title**  
Instruction of pupils in making chemical experiments  
**Abbreviation**  
08-FBC1-092-m01

**Module coordinator**  
holder of the Professorship of Didactics of Chemistry

**Module offered by**  
Institute of Inorganic Chemistry

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**Contents**

German contents available but not translated yet.

Das Modul bietet den Studierenden die Möglichkeit, Schüler bei chemischen Arbeiten anzuleiten.

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Der/Die Studierende lernt, Schüler/innen beim praktischen und theoretischen Bearbeiten chemischer Fragestellungen anzuleiten.

**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)

assessment of practical performance and final report (approx. 8 pages)

**Allocation of places**

Number of places: 30. Places will be allocated according to the number of subject semesters. Among applicants with the same number of subject semesters, places will be allocated by lot.

**Additional information**

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

--
### Module Catalogue for the Subject Chemistry

#### LA Gymnasien

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</table>

#### 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

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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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<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 focuses on polar rearrangements, olefination reactions, pericyclic reactions, carbenes, nitriles and radicals. It imparts basic knowledge of stereoselective synthesis, asymmetric catalysis, organometallic chemistry and retrosynthesis.

**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: 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**

--

**Additional information**

--

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

--
### Module title

**Physical Chemistry lab (teaching degree for secondary schools)**

### Abbreviation

08-PC-Prakt-LAGY-092-m01

### Module coordinator

lecturers Physikalische Chemie (Physical Chemistry)

### Module offered by

Institute of Physical and Theoretical Chemistry

### ECTS

3

### Method of grading

Only after succ. compl. of module(s)

### (not) successfully completed

08-PC-TKE-LAGY

### Duration

1 semester

### Module level

undergraduate

### Other prerequisites

--

### 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)

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)

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 or English

### Allocation of places

--

### 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"
Module title | Abbreviation
---|---
Inorganic Chemistry 1 (teaching degree) | 08-AC1-LA-102-m01

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

<table>
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<th>ECTS</th>
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<tr>
<td>20</td>
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<tr>
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<th>Module level</th>
<th>Other prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
<td>By way of exception, additional prerequisites are listed in the section on assessments.</td>
</tr>
</tbody>
</table>

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 3 module components. Information on courses will be listed separately for each module component.

- 08-AC1-1-102: V + V + Ü (no information on SWS (weekly contact hours) and course language available)
- 08-AC1-LA-2-102: P (no information on SWS (weekly contact hours) and course language available)
- 08-AC1-LA-3-102: 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.


- 10 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)
- Language of assessment: German or 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-AC1-LA-2-102:** Inorganic and Analytical Chemistry (lab) (teaching degree)
- 7 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 or English

**Assessment in module component 08-AC1-LA-3-102:** Inorganic Chemistry 1 (accompanying lecture) (teaching degree)
- 3 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)
- Language of assessment: German or English

**Allocation of places**
--

**Additional information**
--

**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"
<table>
<thead>
<tr>
<th><strong>Module title</strong></th>
<th><strong>Abbreviation</strong></th>
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<tbody>
<tr>
<td>Chemistry of the elements</td>
<td>08-AS1-LAGY-102-m01</td>
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</table>

**Module coordinator**

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

**Module offered by**

Institute of Inorganic Chemistry

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<th><strong>Method of grading</strong></th>
<th><strong>Only after succ. compl. of module(s)</strong></th>
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<th><strong>Duration</strong></th>
<th><strong>Module level</strong></th>
<th><strong>Other prerequisites</strong></th>
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</thead>
<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
<td>--</td>
</tr>
</tbody>
</table>

**Contents**

German contents available but not translated yet.


**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Der/Die Studierende kann Hauptgruppenelemente und Übergangsmetall-Elemente hinsichtlich Struktur, Reaktivität und Herstellung charakterisieren. Er/Sie ist in der Lage, die Koordination der Atome zu erkennen und zu benennen. Zudem kann er/sie das Periodensystem als grundlegendes Werkzeug in der Chemie verwenden.

**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)

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**

--

**Additional information**

--

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

§ 62 (1) 1. Chemie *Allgemeine und Anorganische Chemie*; *Physikalische und Analytische Chemie*
Module title
Physical and Theoretical Chemistry 3: Symmetry and Quantum Chemistry

Module coordinator

Module offered by
Institute of Physical and Theoretical Chemistry

ECTS
6

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 quantum chemistry and symmetry in chemistry.

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 + 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

Additional information

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

**LA Gymnasien**

<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<td>Organic Chemistry 2 (teaching degree for secondary schools)</td>
<td>08-OC2-LAGY-102-m01</td>
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<thead>
<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
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<tbody>
<tr>
<td>holder of the Chair of Physically Organic Chemistry</td>
<td>Institute of Organic Chemistry</td>
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<th>ECTS</th>
<th>Method of grading</th>
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<td>numerical grade</td>
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<tr>
<th>Duration</th>
<th>Module level</th>
<th>Other prerequisites</th>
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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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</tbody>
</table>

### Contents

German contents available but not translated yet.


### Intended learning outcomes

German intended learning outcomes available but not translated yet.


### Courses

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)

Language of assessment: German or English

### Allocation of places

--

### 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"
<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical spectroscopy 1 (teaching degree for secondary schools)</td>
<td>08-OC-Spec-LAGY-092-m01</td>
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<table>
<thead>
<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
</tr>
</thead>
<tbody>
<tr>
<td>lecturer of lecture &quot;Organische Chemie 2&quot;</td>
<td>Institute of Organic Chemistry</td>
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<tr>
<th>ECTS</th>
<th>Method of grading</th>
<th>Other prerequisites</th>
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<td>numerical grade</td>
<td>Only after succ. compl. of module(s)</td>
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<table>
<thead>
<tr>
<th>Duration</th>
<th>Module level</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
<td>--</td>
</tr>
</tbody>
</table>

**Contents**

German contents available but not translated yet.

Das Modul führt in die spektroskopischen Methoden der Infrarot-Spektroskopie, Massenspektrometrie und NMR-Spektroskopie ein.

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Die Studierenden können wichtige spektroskopische Methoden darstellen sowie ein Spektrum auswerten und Rückschlüsse auf die Molekülstruktur ziehen.

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

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 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) 2 Chemie "Organische und Bioorganische Chemie"
<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<td>Practical spectroscopy 2 (teaching degree for secondary schools)</td>
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<th>Module coordinator</th>
<th>Module offered by</th>
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<tbody>
<tr>
<td>lecturer of lecture &quot;Praktische Spektroskopie 2&quot;</td>
<td>Institute of Inorganic Chemistry</td>
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<th>Method of grading</th>
<th>Other prerequisites</th>
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<td>numerical grade</td>
<td>Only after succ. compl. of module(s)</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.


## 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 (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 or English

## Allocation of places

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## Additional information

--

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

--
### Module title

**Inorganic Chemistry of the Elements (teaching degree for secondary schools)**

### Abbreviation

08-AC2-LAGY-102-m01

### Module coordinator

Lecturer of lecture "Festkörperchemie" (Solid State Chemistry)

### Module offered by

Institute of Inorganic Chemistry

### ECTS

3

### Method of grading

Numerical grade

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

Only after success completion of the module.

### Duration

1 semester

### Module level

Undergraduate

### Other prerequisites

None specified.

### Contents

German contents available but not translated yet.


### Intended learning outcomes

German intended learning outcomes available but not translated yet.

Der/Die Studierende kann die Struktur und Eigenschaften von Metallen, Legierungen und salzartige Verbindungen fachgerecht darstellen. Er/Sie ist in der Lage, diese zu systematisieren und in Bezug auf Struktur und Reaktivität zu charakterisieren.

### Courses

(V 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)

Language of assessment: German or English

### Allocation of places

None specified.

### Additional information

None specified.

### Referred to in LPO I

(Examination regulations for teaching-degree programmes)

§ 62 (1) 1. Chemie "Allgemeine und Anorganische Chemie"; "Physikalische und Analytische Chemie"
### Module Catalogue for the Subject Chemistry
LA Gymnasien

<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>Elemental Organic Chemistry (teaching degree for secondary schools)</td>
<td>08-AC3-LA-102-m01</td>
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<th>Module coordinator</th>
<th>Module offered by</th>
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<tr>
<td>lecturer of lecture &quot;Elementorganische Chemie&quot; (Elemental Organic Chemistry)</td>
<td>Institute of Inorganic Chemistry</td>
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<tr>
<th>Duration</th>
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<th>Other prerequisites</th>
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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>
</tr>
</tbody>
</table>

### Contents

German contents available but not translated yet.

Das Modul vermittelt vertiefendes Wissen über Organometalle. Schwerpunkte sind Stuktur und Eigenschaften, Spezielle Stoffklassen, Reaktivität und Technische Prozesse.

### Intended learning outcomes

German intended learning outcomes available but not translated yet.

Der/Die Studierende kann die Struktur und Eigenschaften von Organometallen fachgerecht darstellen. Er/Sie ist in der Lage, diese zu systematisieren und in Bezug auf Struktur und Reaktivität zu charakterisieren. Zudem kann er/sie Syntheseprinzipien für elementorganische Verbindungen entwickeln und erklären.

### 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)

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)

--
# Module Catalogue for the Subject Chemistry

**LA Gymnasien**

## Module title
**Preparation of Exams Chemistry**

### Abbreviation
08-FBC2-PV-101-m01

## Module coordinator
Lecturers Inorganic and Organische Chemie (Organic Chemistry)

## Module offered by
Faculty of Chemistry and Pharmacy

## ECTS
5

## Method of grading
(Not) successfully completed

## Only after succ. compl. of module(s)
o8-OC2-GHR and o8-OC2-Prakt-GHR or o8-OC2-LAGY and o8-OC-Prakt-LAGY

## Duration
1 semester

## Module level
Undergraduate

## Other prerequisites
--

## Contents
Repetition of relevant topics and work on selected state examination issues in Inorganic and Organic Chemistry.

## Intended learning outcomes
The student is able to solve selected state examination issues of the previous years in Inorganic and Organic Chemistry.

## Courses

<table>
<thead>
<tr>
<th>Course Component</th>
<th>Type</th>
<th>Number of Weekly Contact Hours</th>
<th>Language</th>
<th>Examination Offered</th>
<th>Whether Module Can Be Chosen to Earn a Bonus</th>
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<td>S</td>
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<td>German or English</td>
<td>Once a year, Summer Semester</td>
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## 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-FBC2-PV-1-101: Preparation of Exams Inorganic Chemistry**
- 2 ECTS, Method of grading: (not) successfully completed
- Successful participation in the form of short presentations on selected assignments
- Assessment offered: once a year, summer semester
- Language of assessment: German or English

**Assessment in module component 08-FBC2-PV-2-101: Preparation of Exams Organic Chemistry**
- 3 ECTS, Method of grading: (not) successfully completed
- Successful participation in the form of short presentations on selected assignments
- Assessment offered: once a year, summer semester
- Language of assessment: German or English

## Allocation of places
--

## Additional information
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## Referred to in LPO 1 (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>
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<td>Organic Chemistry 4 - advanced course</td>
<td>08-OC4-LAGY-102-m01</td>
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<th>Module offered by</th>
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<tbody>
<tr>
<td>holder of the Chair of Organic Chemistry II</td>
<td>Institute of Organic Chemistry</td>
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<tr>
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<th>Module level</th>
<th>Other prerequisites</th>
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<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**

German contents available but not translated yet.

Das Modul behandelt biologisch wichtige Verbindungsklassen, deren Reaktionen und Synthesen, den Umgang mit besonderen Gefahrstoffen, anspruchsvollere Arbeits- und Synthesetechniken, Reinigungsmethoden und Produktanalytik.

**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: 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) 2. Chemie "Organische und Bioorganische Chemie"
<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>W- and P-Courses in Secondary Classes of Gymnasium</td>
<td>08-FD-WP-102-m01</td>
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</table>

<table>
<thead>
<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
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<tbody>
<tr>
<td>holders of the Professorships of Chemistry Teaching and Physics Teaching</td>
<td>Institute of Inorganic Chemistry</td>
</tr>
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<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>3</td>
<td>(not) successfully completed</td>
<td>--</td>
</tr>
</tbody>
</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: regular participation in practical exercise (sitting in on classes at a Gymnasium).</td>
</tr>
</tbody>
</table>

**Contents**

German contents available but not translated yet.


**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Die Studierenden können W- und P-Seminare der gymnasialen Oberstufe eigenständig planen und durchführen.

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

S + 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)

written elaboration (approx. 10 to 15 pages) and presentation (approx. 30 minutes)

Language of assessment: German or English

**Allocation of places**

Number of places: 12. Places will be allocated according to the number of subject semesters. Among applicants with the same number of subject semesters, places will be allocated by lot.

**Additional information**

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

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