Module Catalogue
for the Subject

Food Chemistry

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

Examination regulations version: 2009
Responsible: Faculty of Chemistry and Pharmacy
Contents

The subject is divided into 3
Content and Objectives of the Programme 4
Abbreviations used, Conventions, Notes, In accordance with 5
Compulsory Courses 6
Mathematics for students in Chemistry and Biology 7
General Biology of Economic Plants from Food and Forage 8
General and Inorganic Chemistry for Food Chemistry Students 10
Introduction to Physics for Students of Non-physics-related Minor Subjects 11
Practical Course Physics for Students of Non-physics-related Minor Subjects 12
Physical Chemistry for Biology Majors 13
Quantitative Inorganic Chemistry for Food Chemistry Students 14
Quantitative Inorganic Analysis for Food Chemistry Students 15
Toxicology and legal studies 16
Biochemistry for Food Chemistry Students 17
Introduction to Instrumental Analysis for Food Chemistry Students 18
Instrumental Analysis for Food Chemistry Students 19
Introduction to Food Chemistry 20
Food chemistry 1 21
Food chemistry 2 22
Organic Chemistry 0 (Nomenclature and Stereochemistry) for Food Chemistry Students 23
Organic Chemistry for Food Chemistry Students 24
Practical Course in Organic Chemistry for Food Chemistry Students 25
Microbiology for Food Chemistry students 26
Microbiology of Food and Hygiene for Food Chemistry Students 27
Thesis 28
Bachelor Thesis 29
Subject-specific Key Skills 30
Analysis Strategies 31
Quality management 32
Introduction to Molecular Biological Analysis for Food Chemistry Students 33
The subject is divided into

<table>
<thead>
<tr>
<th>section / sub-section</th>
<th>ECTS credits</th>
<th>starting page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory Courses</td>
<td>150</td>
<td>6</td>
</tr>
<tr>
<td>Thesis</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>Subject-specific Key Skills</td>
<td>15</td>
<td>30</td>
</tr>
</tbody>
</table>
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: \( \text{NUM} \) = 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)):

22-Jul-2010 (2010-49)

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)
<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>Mathematics for students in Chemistry and Biology</td>
<td>10-M-MCB-101-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>Dean of Studies Mathematik</td>
<td>Institute of Mathematics</td>
</tr>
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<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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<tbody>
<tr>
<td>5</td>
<td>numerical grade</td>
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<table>
<thead>
<tr>
<th>Duration</th>
<th>Module level</th>
<th>Other prerequisites</th>
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</thead>
<tbody>
<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**

| V + Ü (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>written examination</td>
<td>(approx. 90 to 120 minutes)</td>
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**Allocation of places**

--

**Additional information**

--

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

--
Module title: General Biology of Economic Plants from Food and Forage

Abbreviation: 07-LMC-BIO1-092-m01

Module coordinator: holder of the Chair of Plant Physiology and Biophysics

Module offered by: Faculty of Biology

ECTS: 7

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

Numerical grade: --

Duration: 1 semester

Module level: undergraduate

Other prerequisites: --

Contents:
The first part of the winter semester course will discuss the plant cell, the smallest unit of the plant organism, starting with its macroscopic structure before moving on to its microscopic structure. The course will point out differences and similarities between prokaryotic cells (bacteria, archaebacteria) and eukaryotic cells (animals, plants). In the second part of the winter semester course, students will acquire the fundamental knowledge necessary to understand the form (anatomy, morphology and cytology) and function of plant organisms. The summer semester course will introduce students to the fundamental principles of botany, using the example of food and fodder crops. Taking into account their taxonomy, morphology and cytology, the course will discuss physiological and genetic aspects of selected crops and their compounds as well as aspects related to the breeding of these crops. In this context, the course will point out differences that may be used, for example, for the microscopic identification of a variety of food and fodder crops.

Intended learning outcomes:
In the winter semester, students have acquired a knowledge of the structure of plant cells and their (biological) macromolecules as well as of the specific characteristics of the intracellular and extracellular structures of plant cells. In the summer semester, students have acquired the following knowledge and skills:
- Fundamental knowledge of the distinguishing characteristics, genetics and physiology of representatives of the plant kingdom with special attention to crops.
- Fundamental knowledge of major anatomical and morphological plant traits as well as of the compounds of food and fodder crops.
- Fundamental knowledge of the components and functioning of microscopes.
- Fundamental preparation skills.
- Basic familiarity with methods for the microscopic examination of crops.
- Fundamental skills in the interpretation of macroscopic and histologic plant preparations by light microscopy.

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

- 07-LMC-BIO1-1-092: V + V (no information on SWS (weekly contact hours) and course language available)
- 07-LMC-BIO1-2-092: V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment:
Assessment in module component 07-LMC-BIO1-1-092: From the Plant Cell to the Plant Organism From the Plant Cell to the Plant Organism

- 2 ECTS, Method of grading: numerical grade
- written examination (approx. 60 minutes)

Assessment in module component 07-LMC-BIO1-2-092: General Biology and Microscopy of Economic Plants, and Microscopic Analysis of Food and Forage General Biology and Microscopy of Economic Plants, and Microscopic Analysis of Food and Forage

- 5 ECTS, Method of grading: numerical grade
- practical examination (approx. 2 to 3 hours, ungraded) and written examination (approx. 60 minutes)
### Allocation of places

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### Additional information

Additional information will be listed separately for each module component.

- 07-LMC-BIO1-1-092: Will include 3 teaching units on photosynthesis.

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

---
**Module title**  | **Abbreviation**  
--- | ---  
*General and Inorganic Chemistry for Food Chemistry Students* | 08-LMC-AC1-092-m01  

**Module coordinator**  
holder of the Chair of Food Chemistry  

**Module offered by**  
Institute of Pharmacy and Food Chemistry  

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

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

**Contents**  
Basic concepts of inorganic chemistry, nomenclature, atomic structure and periodic system; types of chemical bondings, intermolecular binding forces, solutions and heterogeneous systems, basics in thermodynamics and kinetics of chemical reactions, chemical equilibrium, law of mass action, acid/base systems and redox systems, reaction equation and stoichiometry (occurence, presentation, properties, formula (molecular and strucural formula, and stereotype)) and reaction of elements and substance groups as well as their qualitative inorganic analysis, with special on elements frequently occuring in foods, and environment or which are of toxicological interest.  

**Intended learning outcomes**  
German intended learning outcomes available but not translated yet.  
Sicheres und sauberes Arbeiten im Labor. Qualitative Analyse anorganischer Ionen und Ionengemischen im Trinkwasser.  

**Courses**  
(type, number of weekly contact hours, language — if other than German)  
V + P + 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 is creditable for bonus)  
written examination (approx. 120 minutes)  

**Allocation of places**  
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**Additional information**  
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**Referred to in LPO I**  
(examination regulations for teaching-degree programmes)  
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<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>Introduction to Physics for Students of Non-physics-related Minor Subjects</td>
<td>11-EFNF-072-m01</td>
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<thead>
<tr>
<th>Module coordinator</th>
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<tbody>
<tr>
<td>Managing Director of the Institute of Applied Physics</td>
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<tbody>
<tr>
<td>Faculty of Physics and Astronomy</td>
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<th>Duration</th>
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<tr>
<td>2 semester</td>
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<table>
<thead>
<tr>
<th>Contents</th>
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<tbody>
<tr>
<td>Mechanics, vibration theory, thermodynamics, optics, science of electricity, Atomic and Nuclear Physics.</td>
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<table>
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<th>Intended learning outcomes</th>
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<tbody>
<tr>
<td>The students have knowledge of the principles of Physics.</td>
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<table>
<thead>
<tr>
<th>Courses (type, number of weekly contact hours, language — if other than German)</th>
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<tr>
<td>V + V (no information on SWS (weekly contact hours) and course language available)</td>
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<tr>
<th>Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)</th>
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<tr>
<td>written examination (approx. 120 minutes)</td>
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<table>
<thead>
<tr>
<th>Allocation of places</th>
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</thead>
<tbody>
<tr>
<td>Only as part of pool of general key skills (ASQ): 10 places. Places will be allocated by lot.</td>
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<table>
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<tr>
<th>Additional information</th>
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<table>
<thead>
<tr>
<th>Referred to in LPO I (examination regulations for teaching-degree programmes)</th>
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<th>Module title</th>
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<tr>
<td>Practical Course Physics for Students of Non-physics-related Minor Subjects</td>
<td>11-PFNF-072-m01</td>
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<th>Module coordinator</th>
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<tbody>
<tr>
<td>Managing Director of the Institute of Applied Physics</td>
<td>Faculty of Physics and Astronomy</td>
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<th>Method of grading</th>
<th>Other prerequisites</th>
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<tr>
<td>3</td>
<td>Only after succ. compl. of module(s)</td>
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<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
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
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
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### Referred to in LPO I (examination regulations for teaching-degree programmes)
--
Module title
Physical Chemistry for Biology Majors

Abbreviation
08-PC-Bio-072-m01

Module coordinator
Lecturer of lecture "Thermodynamik, Kinetik, Elektrochemie für Studierende der Biologie und Lebensmittelchemie"

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
--

Contents
This module deals with basics of thermodynamics, kinetics and electrochemistry.

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-PC-Bio-1-062: V + Ü (no information on SWS (weekly contact hours) and course language available)
- 08-PC-Bio-2-072: 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-PC-Bio-1-062: Thermodynamics, Kinetics, Electrochemistry (lecture) Thermodynamics, Kinetics, Electrochemistry (lecture)
- 4 ECTS, Method of grading: numerical grade
- Written examination (60 minutes)

Assessment in module component 08-PC-Bio-2-072: Physical Chemistry (lecture and lab)
- 1 ECTS, Method of grading: (not) successfully completed
- Vortestate (pre-experiment exams, approx. 15 minutes each), assessment of practical performance (log approx. 5 to 10 pages), Nachtestate (post-experiment exams, approx. 15 minutes each)
- Assessment offered: once a year, winter semester

Allocation of places
--

Additional information
--

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

### Bachelor's with 1 major, 180 ECTS credits

<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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</thead>
<tbody>
<tr>
<td>Quantitative Inorganic Chemistry for Food Chemistry Students</td>
<td>08-LMC-AC2-092-m01</td>
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</table>

<table>
<thead>
<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
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</thead>
<tbody>
<tr>
<td>holder of the Chair of Food Chemistry</td>
<td>Institute of Pharmacy and Food Chemistry</td>
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<tr>
<th>Duration</th>
<th>Module level</th>
<th>Other prerequisites</th>
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</thead>
<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</tr>
</tbody>
</table>

### Contents

Reaction equation, stoichiometry and reaction of elements and substance groups. Quantitative inorganic analysis, with focus on elements frequently occurring in foods, and environment or which are of toxicological interest.

### 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

written examination (120 minutes)

### Allocation of places

--

### Additional information

--

### Referred to in LPO 1

(examination regulations for teaching-degree programmes)
Module title | Abbreviation
---|---
Quantitative Inorganic Analysis for Food Chemistry Students | 08-LMC-AC3-092-m01

Module coordinator | Module offered by
holder of the Chair of Food Chemistry | Institute of Pharmacy and Food Chemistry

<table>
<thead>
<tr>
<th>ECTS</th>
<th>Method of grading</th>
<th>Other prerequisites</th>
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<tbody>
<tr>
<td>14</td>
<td>numerical grade</td>
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</tbody>
</table>

Duration | Module level |
1 semester | undergraduate |

Contents
Reaction equation, stoichiometry and reaction of elements and substance groups. Quantitative inorganic analysis, with focus on elements frequently occurring in (drinking) water, and environment or which are of toxicological interest.

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

Die Studierenden recherchieren selbstständig in der verfügbaren Literatur die Zusammensetzung und Analytik verschiedener Trink- und Brauchwasser hinsichtlich ihrer anorganischen Inhaltsstoffe und stellen sie in einer Präsentation vor. Sie wählen geeignete Methoden aus, analysieren verschiedene Wasserproben, verifizieren die Genauigkeit ihrer Analyse und interpretieren anhand relevanter Kennzahlen die Ergebnisse.

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

Method of assessment
oral examinations of one candidate each during lab course (approx. 15 minutes), talk (approx. 20 minutes), proof of correctness and reproducibility of analyses including documentation in lab notebook in the form of logs of analyses (approx. 8 pages per analysis, approx. 80 pages total)

Allocation of places
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Additional information
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<tbody>
<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>
<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>3</td>
<td>numerical grade</td>
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<thead>
<tr>
<th>Duration</th>
<th>Module level</th>
<th>Other prerequisites</th>
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</thead>
<tbody>
<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**

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**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>Biochemistry for Food Chemistry Students</td>
<td>08-LMC-BC-092-m01</td>
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<table>
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<tr>
<th>Module coordinator</th>
<th>Module offered by</th>
</tr>
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<tbody>
<tr>
<td>holder of the Chair of Food Chemistry</td>
<td>Institute of Pharmacy and Food Chemistry</td>
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<td>6</td>
<td>numerical grade</td>
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<table>
<thead>
<tr>
<th>Duration</th>
<th>Module level</th>
<th>Other prerequisites</th>
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</thead>
<tbody>
<tr>
<td>2 semester</td>
<td>undergraduate</td>
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</table>

**Contents**

German contents available but not translated yet.

Aufbau und Funktion der Makromoleküle; Grundlagen der Biosynthese und des Stoffwechsels von Lebensmittelinhaltstoffen; Energiegewinnung; biologische Oxidation; Enzyme und Biokatalyse. Replikation, Transkription, Translation, allgemeine Kontrollmechanismen.

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Die Studierenden kennen die Grundlagen der Biochemie, einschließlich dem Aufbau der Zelle und aller Aufgaben, Funktionen und Synthese aller Zellkompartmente und -inhaltstoffe.

**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)

written examination (approx. 120 minutes) or oral examination (approx. 30 minutes)

**Allocation of places**

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**Additional information**

Will include a total of 15 teaching units on the generation of energy, biological oxidation, enzymes and biocatalysis.

**Referred to in LPO I**

(examination regulations for teaching-degree programmes)

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<table>
<thead>
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<th>Module title</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>Introduction to Instrumental Analysis for Food Chemistry Students</td>
<td>08-LMC-IA-092-m01</td>
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**Module coordinator**

holder of the Chair of Food Chemistry

**Module offered by**

Institute of Pharmacy and Food Chemistry

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<th>ECTS</th>
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<tr>
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<tr>
<th>Duration</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.

Analytik organischer Moleküle unter Berücksichtigung physikalischer Trenn- und Messmethoden.

**Intended learning outcomes**

The students know the principles of spectroscopy, chromatography and electrochemistry as well as the field of application of each method. They know the mathematical and statistical analysis and interpretation of spectra and chromatograms.

**Courses**

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

**Method of assessment**

written examination (approx. 120 minutes)

**Allocation of places**

--

**Additional information**

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**Referred to in LPO I**

(examination regulations for teaching-degree programmes)

--
# Instrumental Analysis for Food Chemistry Students

<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>Instrumental Analysis for Food Chemistry Students</td>
<td>08-LMC-LMA-092-m01</td>
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**Module coordinator**

holder of the Chair of Food Chemistry

**Module offered by**

Institute of Pharmacy and Food Chemistry

<table>
<thead>
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<th>ECTS</th>
<th>Method of grading</th>
<th>Other prerequisites</th>
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<tbody>
<tr>
<td>12</td>
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</table>

**Duration**

1 semester

**Module level**

undergraduate

**Contents**

Basics in analysis of food, tobacco products, cosmetic products, consumer goods and animal feed; with special focus on spectroscopic and chromatographic methods.

**Intended learning outcomes**

The students can plan and perform qualitative and quantitative analysis of food by spectroscopic (photometry, fluorimetry) and chromatographic (thin layer chromatography, high performance liquid chromatography and gas chromatography) methods.

**Courses**

<table>
<thead>
<tr>
<th>P + V + S (no information on SWS (weekly contact hours) and course language available)</th>
</tr>
</thead>
</table>

**Method of assessment**

oral examinations of one candidate each during lab course (approx. 15 minutes), completion of written theoretical assignments (2 assignments, 180 minutes each), completion of practical assignments as specified by the lecturer including documentation in lab notebook in the form of logs of analyses (approx. 12 pages per assignment, approx. 72 pages total)

**Allocation of places**

--

**Additional information**

--

**Referred to in LPO 1**

(examination regulations for teaching-degree programmes)

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

<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>Introduction to Food Chemistry</td>
<td>08-LMC-LMC0-092-m01</td>
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<tbody>
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<td>Institute of Pharmacy and Food Chemistry</td>
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<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</tbody>
</table>

### Contents

Introduction to chemistry of food components.

### Intended learning outcomes

The students know basic structures, properties and reactions of proteins, carbohydrates and lipids as well as their importance in food.

### Courses

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

**Method of assessment**

written examination (approx. 120 minutes)

### Allocation of places

--

### Additional information

--

### Referred to in LPO I

(examination regulations for teaching-degree programmes)

--
Module title | Abbreviation
--- | ---
Food chemistry 1 | 08-LMC-LMC1-092-m01

Module coordinator | Module offered by
holder of the Chair of Food Chemistry | Institute of Pharmacy and Food Chemistry

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<th>Method of grading</th>
<th>Other prerequisites</th>
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</table>

Duration | Module level |
1 semester | undergraduate |

Contents

German contents available but not translated yet.

Basiskenntnisse über die Chemie der Lebensmittelbestandteile und über die Methoden der Analytik von Lebensmitteln, Tabakerzeugnissen und Futtermitteln einschließlich der Interpretation von Messdaten mit mathematisch-statistischen Methoden. Insbesondere kohlenhydrathaltige Lebens- und Futtermittel.

Intended learning outcomes

German intended learning outcomes available but not translated yet.


Courses

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

Method of assessment

talk (approx. 45 minutes), oral examinations of one candidate each during lab course (approx. 15 minutes), proof of correctness and reproducibility of analyses including documentation in lab notebook in the form of logs of analyses (approx. 6 pages per analysis, approx. 60 pages total), summary product analysis (approx. 15 to 20 pages)

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  | Abbreviation
--- | ---
Food chemistry 2 | 08-LMC-LMC2-092-m01

Module coordinator | Module offered by
holder of the Chair of Food Chemistry | Institute of Pharmacy and Food Chemistry

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

Contents

German contents available but not translated yet.

Basiskenntnisse über die Chemie der Lebensmittelbestandteile und über die Methoden der Analytik von Lebensmitteln, Tabakerzeugnissen und Futtermitteln einschließlich der Interpretation von Messdaten mit mathematisch-statistischen Methoden. Insbesondere lipidhaltige Lebens- und Futtermittel.

Intended learning outcomes

German intended learning outcomes available but not translated yet.


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

S + V + P + 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 is creditable for bonus)

talk (approx. 45 minutes), oral examinations of one candidate each during lab course (approx. 15 minutes), proof of correctness and reproducibility of analyses including documentation in lab notebook in the form of logs of analyses (approx. 6 pages per analysis, approx. 60 pages total), summary product analysis (approx. 15 to 20 pages)

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
---|---
Organic Chemistry 0 (Nomenclature and Stereochemistry) for Food Chemistry Students | o8-LMC-OC0-092-m01

| Module coordinator | Module offered by |
---|---|
holder of the Chair of Medicinal and Pharmaceutical Chemistry | Institute of Pharmacy and Food Chemistry |

| ECTS | Method of grading | Only after succ. compl. of module(s) |
---|---|---|
5 | numerical grade | o8-LMC-AC2 and o8-LMC-AC3 |

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

**Contents**

German contents available but not translated yet.

**Stereochemie und Nomenklatur der wichtigsten Verbindungsklassen, insbesondere auch von Naturstoffen.**

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Die Studierenden beherrschen die Regeln zur Benennung organischer Substanzen nach IUPAC, gebräuchliche Trivialnamen und die Ableitung der Strukturformeln aus den jeweiligen Strukturnamen. Sie kennen die grundlegenden Begriffe und die Bedeutung der Stereochemie sowie Regeln zur Benennung stereochemischer Verbindungen.

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

S + Ü + 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 is creditable for bonus)**

written examination (approx. 60 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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<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</table>

**Contents**

German contents available but not translated yet.

Grundprinzipien, zum Beispiel Nomenklatur, Bindungsarten; Summen-, Strukturformeln; Reaktionstypen und -mechanismen; Eigenschaften; Reaktionsverhalten und Darstellung der wichtigsten Verbindungsklassen, insbesondere auch von Naturstoffen; Chemie funktioneller Gruppen und Stoffklassen; Struktur und Reaktivität; Grundlagen von synthetischen und Biopolymeren.

**Intended learning outcomes**

German intended learning outcomes available but not translated yet.

Die Studierenden verstehen und beherrschen grundlegende Synthesemechanismen und können das Reaktionsverhalten und Eigenschaften chemischer Verbindungen aufgrund ihrer funktionellen Gruppen ableiten.

**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. 120 minutes)

**Allocation of places**

--

**Additional information**

--

**Referred to in LPO I**

(examination regulations for teaching-degree programmes)

--
## Module title
**Practical Course in Organic Chemistry for Food Chemistry Students**

## Abbreviation
08-LMC-OC2-092-m01

## Module coordinator
holder of the Chair of Food Chemistry

## Module offered by
Institute of Pharmacy and Food Chemistry

## ECTS

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<td>o8-LMC-AC2 and o8-LMC-AC3</td>
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</table>

## Contents
Basic principles of organic chemistry, such as nomenclature, types of chemical bondings; Sum formulas, structural formulas; Reaction types and mechanisms; chemical characteristics; Reaction of the most important chemical families, with focus on natural products; Chemistry of functional groups; Structure and Reactivity; Basics in synthetic and biopolymers.

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

Die Studierenden wenden grundlegende Techniken bei der Durchführung von Synthesen verschiedener Stoffklassen an und überprüfen die entstandenen Produkte hinsichtlich Reinheit und Identität.

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

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

oral examinations (approx. 15 minutes each) and logs (approx. 65 pages)

## 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>Faculty of Biology</td>
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<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</table>

**Contents**

Fundamental principles of the systematics, morphology and metabolic physiology of microorganisms (bacteria, viruses, fungi, mycoplasmas, chlamydia, Rickettsia).

**Intended learning outcomes**

Sterile techniques, bacterial culture, physiological and microscopic techniques for the detection, identification and differentiation of microorganisms.

**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)

log (approx. 30 pages)

**Allocation of places**

--

**Additional information**

--

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

--
### Module title
Microbiology of Food and Hygiene for Food Chemistry Students

### Abbreviation
03-LMC-HYG-092-m01

### Module coordinator
Institute of Hygiene and Microbiology

### Module offered by
Faculty of Medicine

### ECTS
5

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

### Duration
1 semester

### Module level
undergraduate

### Other prerequisites
--

### Contents
The students will gain knowledge on food-related topics of hygiene and microbiology. This includes relevant, food-contaminating microorganisms and the infections/diseases they provoke; antimicrobial drugs/substances; hygiene management, food decay.

### Intended learning outcomes
Students gain knowledge on food microbiology and hygiene: fundamentals of microbial systematics, morphology, cytology and physiology; knowledge on the role of pathogens (microorganisms, toxin producers, viruses, prions, parasites) for food chemistry and food technology (decay, intoxications, analytical microbiology, biotechnology); knowledge on the diagnosis and cultivation of microorganisms; knowledge on microbial inactivation (disinfection, sterilisation); fundamentals of the pathogenesis of important human pathogens and clinical consequences of microbial infection; fundamentals of medically relevant antiinfectives and the development of drug resistances.

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

### Method of assessment
written examination (approx. 60 minutes)

### Allocation of places
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### Additional information
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### Referred to in LPO 1
(examination regulations for teaching-degree programmes)

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Thesis
(10 ECTS credits)
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<tr>
<td></td>
<td>degree programme coordinator Lebensmittelchemie (Food Chemistry)</td>
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<tbody>
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<td>1 semester</td>
<td>undergraduate</td>
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</table>

**Contents**

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

**Intended learning outcomes**

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

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

(no 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 thesis (approx. 20 to 30 pages)

**Allocation of places**

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**Additional information**

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

--
Subject-specific Key Skills

(15 ECTS credits)
<table>
<thead>
<tr>
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<th>Abbreviation</th>
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<tbody>
<tr>
<td>Analysis Strategies</td>
<td>08-LMC-FSQ1-092-m01</td>
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**Module coordinator**
holder of the Chair of Food Chemistry

**Module offered by**
Institute of Pharmacy and Food Chemistry

<table>
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</table>

**Duration**
1 semester

**Module level**
undergraduate

**Other prerequisites**
--

**Contents**
The occupational profile of a Food Chemist serving as basis for the degree program food chemistry. General strategies for qualitative and quantitative analyses. Calibration strategies. Accuracy and quality of chemical analysis. Interpretation of measured data with statistical methods.

**Intended learning outcomes**
The students know the basics of planning, performing and analysis of analytical methods, including the interpretation of the data using statistical methods as well as the validation of their results.

**Courses**
R + S (no information on SWS (weekly contact hours) and course language available)

**Method of assessment**
project report (approx. 15 pages)

**Allocation of places**
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**Additional information**
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**Referred to in LPO I** (examination regulations for teaching-degree programmes)
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<table>
<thead>
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<th>Module title</th>
<th>Abbreviation</th>
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<td>Quality management</td>
<td>08-LMC-FSQ2-092-m01</td>
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<tbody>
<tr>
<td>1 semester</td>
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</tbody>
</table>

**Contents**

Quality management in chemical laboratories.

**Intended learning outcomes**

The students can apply the basic principles of industrial quality management and can develop and apply a standard operating procedure.

**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)

Term paper (approx. 10 pages) with presentation (approx. 15 minutes)

**Allocation of places**

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**Additional information**

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

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<table>
<thead>
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<td>Introduction to Molecular Biological Analysis for Food Chemistry Students</td>
<td>08-LMC-MBA-092-m01</td>
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</table>

### Contents

Basics in methods in molecular biology - theory and practice.

### Intended learning outcomes

The students can perform basic molecular biology techniques for DNA isolation, polymerase chain reaction, agarose gel electrophoresis and restriction enzyme digestion and they can interpret molecular biological data.

### Courses

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

### Method of assessment

Completion of written theoretical assignments (4 to 5 assignments, 30 minutes each), completion of practical assignments as specified by the lecturer including documentation in lab notebook in the form of logs of analyses (approx. 20 pages total)

### Allocation of places

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### Additional information

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### Referred to in LPO I

(examination regulations for teaching-degree programmes)