

Subdivided Module Catalogue
for the Subject

Food Chemistry

as a Master's with 1 major
with the degree "Master of Science"
(120 ECTS credits)

Examination regulations version: 2012
Responsible: Faculty of Chemistry and Pharmacy

Course of Studies - Contents and Objectives

No translation available.

Abbreviations used

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

Term: **SS** = summer semester, **WS** = winter semester

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

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

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

Conventions

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

Notes

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

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

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

In accordance with

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

ASPO2009

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

28-Aug-2012 (2012-153)

25-Oct-2017 (2017-64)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.

The subject is divided into

Abbreviation	Module title	ECTS credits	Method of grading	page
Compulsory Courses (75 ECTS credits)				
o8-LMC-BCdE1-122-m01	Nutritional Biochemistry	7	NUM	7
o8-LMC-BCdE2-122-m01	Laboratory Courses in Nutritional Biochemistry	7	NUM	8
o8-LMC-LMTox-122-m01	Toxicology of Food	9	NUM	15
o8-LMC-LMRecht-122-m01	Food Law, Tobacco Law, Feed Law and Tangented Law	5	NUM	12
o8-LMC-SpezLM-122-m01	Special Food and Animal Feed	8	NUM	19
o8-LMC-LMCP-122-m01	Analysis and Evaluation of Foodstuffs, Cosmetics, Commodities, Tobacco Products, and Animal Feed: practical course	5	NUM	11
o8-LMC-KBT-122-m01	Cosmetics, Commodities and Tobacco Products	4	NUM	9
o8-LMC-UA-122-m01	Environmental Analysis	5	NUM	21
o8-LMC-LMT-122-m01	Technology of Foodstuffs including water for human use, Cosmetics, Commodities, Tobacco Products, and Animal Feed	5	NUM	14
o8-LMC-MEV-122-m01	Development and Validation of Methods in Food Analysis	5	NUM	18
o8-LMC-LMCF-122-m01	Current Research in Food Chemistry	15	NUM	10
Compulsory Electives (15 ECTS credits)				
Specialist Lab Course (5 ECTS credits)				
o8-LMC-WPV1-122-m01	Advanced Laboratory Courses in the Toxicology of Food	5	NUM	22
o8-LMC-WPV2-122-m01	Advanced Laboratory Course in Environmental Analysis	5	NUM	23
Additional Qualifications (10 ECTS credits)				
o8-LMC-WPZ1-122-m01	Industrial Internship 1 (Short)	5	B/NB	24
o8-LMC-WPZ2-122-m01	Industrial Internship 2 (Long)	10	B/NB	25
o8-LMC-WPZ3-122-m01	Safety Evaluation of Food	5	B/NB	26
o8-LMC-WPZ4-122-m01	Applied Food Law	5	B/NB	27
o8-LMC-WPZ5-122-m01	Courses related to Food Chemistry outside of the Natural Sciences	5	B/NB	28
o8-LMC-WPZ6-122-m01	Courses related to Food Chemistry within the Natural Sciences	5	B/NB	29
o8-APM1-102-m01	Foreign Studies (short)	5	B/NB	5
o8-APM2-102-m01	Foreign Studies (long)	10	B/NB	6
o8-WRM1-102-m01	Tutoring 1 (practical course)	5	B/NB	30
o8-WRM2-102-m01	Tutoring 2 (practical course)	5	B/NB	31
Thesis (30 ECTS credits)				
o8-LMC-MA-122-m01	Master Thesis	30	NUM	17

Module title		Abbreviation
Foreign Studies (short)		o8-APM1-102-m01
Module coordinator		Module offered by
Erasmus programme coordinator Chemie (Chemistry)		Faculty of Chemistry and Pharmacy
ECTS	Method of grading	Only after succ. compl. of module(s)
5	(not) successfully completed	--
Duration	Module level	Other prerequisites
1 semester	graduate	Admission prerequisite to assessment: regular attendance of placement.
Contents		
Practical course to be completed at universities abroad. Students may complete this course in the context of exchange programmes such as Erasmus etc. The contents of the course should correspond to the contents of a lab course offered in the context of the Master's programme in Chemistry (120 ECTS credits); please consult with the competent coordinator in advance.		
Intended learning outcomes		
Students are familiar with procedures and processes used at universities in countries other than Germany. They have acquired subject-specific skills as well as language and interpersonal skills.		
Courses (type, number of weekly contact hours, language — if other than German)		
P (no information on SWS (weekly contact hours) and course language available)		
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
report (2 pages); proof of having completed lab course Language of assessment: German or English; language of the respective placement country where required		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Chemistry (2010) Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Foreign Studies (long)		o8-APM2-102-m01
Module coordinator		Module offered by
Erasmus programme coordinator Chemie (Chemistry)		Faculty of Chemistry and Pharmacy
ECTS	Method of grading	Only after succ. compl. of module(s)
10	(not) successfully completed	--
Duration	Module level	Other prerequisites
2 semester	graduate	Admission prerequisite to assessment: regular attendance of placement.
Contents		
Practical course to be completed at universities abroad. Students may complete this course in the context of exchange programmes such as Erasmus etc. The contents of the course should correspond to the contents of a lab course offered in the context of the Master's programme in Chemistry (120 ECTS credits); please consult with the competent coordinator in advance.		
Intended learning outcomes		
Students are familiar with procedures and processes used at universities in countries other than Germany. They have acquired subject-specific skills as well as language and interpersonal skills.		
Courses (type, number of weekly contact hours, language — if other than German)		
P (no information on SWS (weekly contact hours) and course language available)		
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
report (2 pages); proof of having completed lab course Language of assessment: German or English; language of the respective placement country where required		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Chemistry (2010) Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Nutritional Biochemistry		o8-LMC-BCdE1-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
7	numerical grade	--
Duration	Module level	Other prerequisites
2 semester	graduate	In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 2. Letter e of Annex 1 of APOLmCh.
Contents		
Quantitative and qualitative aspects of nutrition, e.g. energy balance, basal metabolic rate, the gross and metabolisable energy of the three main nutrients, biological value; fundamental principles of dietetics and special diets; functions of the main organs; fundamental principles of digestion, absorption and excretion as well as of the biosynthesis and metabolism of food constituents; interactions in intermediary metabolism; principles of metabolic regulation and hormonal regulation; mineral metabolism; nutrition and vitamins.		
Intended learning outcomes		
Students know how the relevant micro and macronutrients are transported through the human body. They have developed an understanding of the biochemical processing of nutrients in the cells and of the regulatory mechanisms of metabolic pathways.		
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 or approx. 120 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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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Laboratory Courses in Nutritional Biochemistry		o8-LMC-BCdE2-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
7	numerical grade	--
Duration	Module level	Other prerequisites
2 semester	graduate	In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 1. Letter c of Annex 1 of APOLmCh.
Contents		
Lab course in biochemistry: cell fractionation and characterisation, enzyme kinetics.		
Intended learning outcomes		
Students have developed the ability to independently perform homogenisations and fractionations of cells and tissues as well as to use biochemical methods (e.g. determination of enzyme kinetics) to characterise the fractions.		
Courses (type, number of weekly contact hours, language — if other than German)		
P + 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)		
workshop: theoretical and practical assignments to be completed in groups of up to 3 candidates, including Vortestate and Nachtestate (pre and post-experiment exams) and lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes each), assessment and documentation of practical performance (approx. 10 pages) and written report (approx. 5 to 10 pages) Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Cosmetics, Commodities and Tobacco Products		o8-LMC-KBT-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
4	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 2. Letter a of Annex 1 of APOLmCh.
Contents		
Chemical constituents, production and analysis of cosmetics, consumer goods and tobacco products. Chemical changes caused in those products during processing, storage and transportation as well as pharmacological and toxicological effects of their normal and abnormal constituents.		
Intended learning outcomes		
Students are familiar with the chemistry of cosmetics. They are able to use methods for the analysis of cosmetics, consumer goods and tobacco products as well as to interpret measured data with statistical methods.		
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 or approx. 120 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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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Current Research in Food Chemistry		o8-LMC-LMCF-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
15	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
Working with the food chemistry literature and databases, discussion of recent research findings and current methods in food chemistry, solution of research problems, statistical analysis of data, presentation of research findings.		
Intended learning outcomes		
Students can research literature on a scientific problem, solve it experimentally, document this process, and present the result in a presentation.		
Courses (type, number of weekly contact hours, language — if other than German)		
S + S + Ü + 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 and documentation of practical performance (approx. 30 pages), written report (approx. 5 to 10 pages) and talk (approx. 20 minutes) Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Analysis and Evaluation of Foodstuffs, Cosmetics, Commodities, Tobacco Products, and Animal Feed: practical course		o8-LMC-LMCP-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 1. Letter a and No. II 2. Letters a and c of Annex 1 of APOLmCh.
Contents		
Methods for the analysis of foods, tobacco products, cosmetics, consumer goods and feeds including the interpretation of measured data with statistical methods.		
Intended learning outcomes		
Students are able to select and apply an appropriate method for the analysis of particular foods, tobacco products, cosmetics, consumer goods or feeds. They are able to interpret the measured data with statistical methods as well as to assess the foods, tobacco products, cosmetics, consumer goods or feeds conclusively.		
Courses (type, number of weekly contact hours, language — if other than German)		
Ü + 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)		
workshop: theoretical and practical assignments to be completed in groups of up to 3 candidates, including Vortestate (pre-experiment exams) and Nachtestate (post-experiment exams) and/or lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical performance (approx. 10 pages) and written report (approx. 5 to 10 pages) Language of assessment: German or English		
Allocation of places		
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Additional information		
Additional information on module duration: 1 to 2 semesters.		
Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Food Law, Tobacco Law, Feed Law and Tangented Law		o8-LMC-LMRecht-122-mo1
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
2 semester	graduate	In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 2. Letters h, i and j of Annex 1 of APOLmCh.
Contents		
a) General food law, aa) Structure and contents of food law, bb) Structure and contents of EU food law. b) Overview of the organisation and purpose of official controls on products and tobacco products pursuant to Section 1 Subsection 1 Sentence 1 No. 2, aa) Administrative structures at the federal and state levels, bb) Constitutional law and general administrative law, cc) Administrative jurisdiction, dd) Offences and legal proceedings, ee) EU institutions and bodies, ff) Legal acts of the EU. c) Overview of quality assurance procedures in laboratories and industry, aa) Quality management systems in laboratories and industry (DIN EN ISO 9000 and EN 45000 or ISO/IEC 17000 standards, OECD Principles of Good Laboratory Practice (GLP)), bb) German and EU legislation on conformity assessment including certification and testing, cc) Handbooks and documentation of quality assurance procedures in laboratories and the food industry.		
Intended learning outcomes		
Students identify foods, cosmetics, feeds, consumer goods and tobacco products and use the appropriate legal basis for their assessment. They know the relevant national and international structures for all food law issues. They have the theoretical knowledge to set up a quality management system and to work according to "Good Laboratory Practice" standards.		
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 or approx. 120 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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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		

Master's degree (1 major) Food Chemistry (2012)

Module title			Abbreviation
Technology of Foodstuffs including water for human use, Cosmetics, Commodities, Tobacco Products, and Animal Feed			o8-LMC-LMT-122-m01
Module coordinator		Module offered by	
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry	
ECTS	Method of grading	Only after succ. compl. of module(s)	
5	numerical grade	--	
Duration	Module level	Other prerequisites	
1 semester	graduate	In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 1. Letter e and No. II 2. Letters b and d of Annex 1 of APOLmCh.	
Contents			
Basic unit operations in the production and processing of foods, tobacco products pursuant to Section 1 Subsection 1 Sentence 1 No. 2, cosmetics, consumer goods and feeds; e.g. mechanical operations (cleaning, sorting, comminution, sieving, mixing, filtering, expressing, emulsification, centrifugation, extracting), thermal operations (heating, cooling and freezing, concentration, drying, distillation), biotechnological processes (e.g. fermentation, acidification).			
Intended learning outcomes			
Students know all relevant processes in food technology as well as examples of their application.			
Courses (type, number of weekly contact hours, language — if other than German)			
V + E (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 or approx. 120 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) and written report (approx. 2 to 5 pages) Language of assessment: German or English			
Allocation of places			
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Additional information			
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Workload			
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Teaching cycle			
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Referred to in LPO I (examination regulations for teaching-degree programmes)			
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Module appears in			
Master's degree (1 major) Food Chemistry (2012)			

Module title		Abbreviation
Toxicology of Food		o8-LMC-LMTox-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
9	numerical grade	--
Duration	Module level	Other prerequisites
2 semester	graduate	In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 1. Letter d and 2. Letter g of Annex 1 of APOLmCh.
Contents		
Harmful effects of natural and synthetic chemicals, toxicodynamics (receptor theory, dose-response relationships); toxicokinetics (absorption, distribution, biotransformation, elimination); classification of toxicants and their biological effects; toxicology and animal testing; methods for toxicity testing (acute, subacute, subchronic, chronic, carcinogenic, mutagenic and teratogenic toxicity tests); principles of epidemiological studies; risk assessment and definition of exposure limits and guidelines.		
Intended learning outcomes		
Students are familiar with the toxicokinetics and modes of toxic action of relevant natural and synthetic chemicals as well as with methods for toxicity testing. They have learned the principles of epidemiological studies. They know the steps involved in a risk assessment and in the definition of exposure limits and guidelines. Students are able to independently select an appropriate test for the solution of a given food toxicological question and are able to perform that test.		
Courses (type, number of weekly contact hours, language — if other than German)		
V + V + 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: a) 1 to 3 written examinations (1 written examination: approx. 90 minutes or approx. 120 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) and lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical performance (approx. 10 pages) and written report (approx. 5 to 10 pages) assessment: a) 1 to 3 written examinations (1 written examination: approx. 90 minutes or approx. 120 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) and lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical performance (approx. 10 pages) and written report (approx. 5 to 10 pages) Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Food Chemistry (2012)

Module title		Abbreviation
Master Thesis		o8-LMC-MA-122-mo1
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
30	numerical grade	o8-LMC-LMCF and, where applicable, specific modules/module components as specified by supervisor (cf. Section 15 Subsection 2 FSB (subject-specific provisions)).
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
Students search for literature on a problem in food chemistry, select appropriate methods for solution of that problem and use those methods in the laboratory. They prepare a written account of their work and deliver an academic presentation on their findings.		
Intended learning outcomes		
Students independently investigate a problem in food chemistry.		
Courses (type, number of weekly contact hours, language — if other than German)		
C (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. 40 pages) and presentation (poster or talk, approx. 20 minutes), weighted 4:1 Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Development and Validation of Methods in Food Analysis		o8-LMC-MEV-122-mo1
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 1. Letter a and No. II 2. Letters a and c of Annex 1 of APOLmCh.
Contents		
Theory and practice of the development as well as the statistical validation of methods for the quantitative analysis of foods, tobacco products, cosmetics, consumer goods and feeds.		
Intended learning outcomes		
Students are able to establish and validate a method for the quantitative analysis of foods, tobacco products, cosmetics, consumer goods and feeds.		
Courses (type, number of weekly contact hours, language — if other than German)		
V + P + 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)		
lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical performance (approx. 10 pages) and written report (approx. 5 to 10 pages) Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Special Food and Animal Feed		o8-LMC-SpezLM-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
8	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	By way of exception, additional prerequisites are listed in the section on assessments.
Contents		
Chemical constituents, production and analysis of particular foods and feeds, chemical changes caused in those foods and feeds during processing, storage and transportation as well as pharmacological and toxicological effects of their normal and abnormal constituents. Thorough knowledge of the chemistry of food constituents and methods for the analysis of particular foods and feeds including the interpretation of measured data with statistical methods.		
Intended learning outcomes		
Students are able to independently select relevant analysis parameters for the assessment of functional foods and feeds as well as foods/feeds containing genetically modified organisms, to independently select appropriate analytical methods, to independently apply those methods as well as to interpret the measured data with appropriate statistical methods. They are able to assess the foods/feeds on the basis of the analytical values.		
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. <ul style="list-style-type: none"> o8-LMC-SpezLM-1-122: V + V + P (no information on SWS (weekly contact hours) and course language available) o8-LMC-SpezLM-2-122: 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)		
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 o8-LMC-SpezLM-1-122: Special Food and Animal Feed Special Food and Animal Feed Special Food and Animal Feed <ul style="list-style-type: none"> 6 ECTS, Method of grading: numerical grade assessment: a) 1 to 3 written examinations (1 written examination: approx. 90 minutes or approx. 120 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) and lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical performance (approx. 10 pages) and written report (approx. 5 to 10 pages) Language of assessment: German or English Other prerequisites: In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 1. Letter a and No. II 2. Letter e of Annex 1 of APOLmCh. Assessment in module component o8-LMC-SpezLM-2-122: Seminar of Animal Feed <ul style="list-style-type: none"> 2 ECTS, Method of grading: numerical grade written report (approx. 20 pages) and talk (approx. 20 minutes) Other prerequisites: In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelche- 		

miker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 2. Letters c and d of Annex 1 of APOLmCh.
Allocation of places
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Additional information
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Workload
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Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Food Chemistry (2012)

Module title		Abbreviation
Environmental Analysis		o8-LMC-UA-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 2. Letter g of Annex 1 of APOLmCh.
Contents		
Toxic effects on the ecosystem; risk assessment and definition of exposure limits and guidelines. (Bio)monitoring methods, environmental chemistry and analysis in biotic and abiotic environments.		
Intended learning outcomes		
Students are able to answer retrospective questions in environmental analysis, selecting appropriate (bio)monitoring and analytical methods and performing statistical analyses of data. They are able to assess the ecotoxicity of pollutants and their fate in the environment by performing experiments in the lab.		
Courses (type, number of weekly contact hours, language — if other than German)		
V + V + Ü (no information on SWS (weekly contact hours) and course language available)		
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
a) 1 to 3 written examinations (1 written examination: approx. 90 minutes or approx. 120 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) and written report (approx. 3 to 6 pages) Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Advanced Laboratory Courses in the Toxicology of Food		o8-LMC-WPV1-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 1. Letter d and No. II 2. Letter g of Annex 1 of APOLmCh.
Contents		
Cell culturing techniques, extended toxicity tests (e.g. genotoxicity testing, reporter gene assays).		
Intended learning outcomes		
Students are able to culture adherent and suspension cells independently. They are able to perform toxicity tests under guidance in order to determine the biological potential of constituents of foods, cosmetics, consumer goods or tobacco products.		
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)		
lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical performance (approx. 10 pages) and written report (approx. 5 to 10 pages) Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Advanced Laboratory Course in Environmental Analysis		o8-LMC-WPV2-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	In accordance with Section 2 Subsection 2 Sentence 2 APOLmCh (Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker, Regulation on the training and examination of state-certified food chemists) in connection with No. II 1. Letter d and No. II 2. Letter g of Annex 1 of APOLmCh.
Contents		
Trace analysis by gas or liquid chromatography-mass spectrometry.		
Intended learning outcomes		
Students are able to perform qualitative and quantitative analyses of environmental contaminants or residues in environmental samples using common mass spectrometric methods.		
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)		
lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical performance (approx. 10 pages) and written report (approx. 5 to 10 pages) Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Industrial Internship 1 (Short)		o8-LMC-WPZ1-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	(not) successfully completed	--
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
Work placement in the field of food production or analysis.		
Intended learning outcomes		
Students have become familiar with the occupation of a food chemist.		
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 report (approx. 5 to 10 pages) Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Industrial Internship 2 (Long)		o8-LMC-WPZ2-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
10	(not) successfully completed	--
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
Work placement in the field of food production or analysis.		
Intended learning outcomes		
Students have become familiar with the occupation of a food chemist.		
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 report (approx. 5 to 10 pages) Language of assessment: German or English		
Allocation of places		
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Additional information		
Additional information on module duration: 1 to 2 semesters.		
Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Safety Evaluation of Food		o8-LMC-WPZ3-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	(not) successfully completed	--
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
Assessment of the safety of foods on the basis of their constituents.		
Intended learning outcomes		
Students are able to assess the safety of foods in accordance with applicable guidelines for food safety assessment.		
Courses (type, number of weekly contact hours, language — if other than German)		
Ü (no information on SWS (weekly contact hours) and course language available)		
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
written report (approx. 5 to 10 pages) Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Applied Food Law		o8-LMC-WPZ4-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	(not) successfully completed	--
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
Assessment of foods on the basis of applicable food law.		
Intended learning outcomes		
Students are able to assess foods on the basis of applicable food law.		
Courses (type, number of weekly contact hours, language — if other than German)		
Ü (no information on SWS (weekly contact hours) and course language available)		
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
written report (approx. 5 to 10 pages) Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Courses related to Food Chemistry outside of the Natural Sciences		o8-LMC-WPZ5-122-m01
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	(not) successfully completed	--
Duration	Module level	Other prerequisites
1 semester	graduate	Please consult with course advisory service.
Contents		
This module gives students the opportunity to transfer credits from chemistry-related courses that are offered by other Faculties and are not explicitly included in the academic regulations for their programmes. Students MUST consult with their course advisors in advance.		
Intended learning outcomes		
Students have developed the knowledge and skills taught in the courses attended by them.		
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)		
assessment: a) 1 to 3 written examinations (1 written examination: approx. 90 minutes or approx. 120 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) or successful completion as certified by the lecturer Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Courses related to Food Chemistry within the Natural Sciences		o8-LMC-WPZ6-122-mo1
Module coordinator		Module offered by
holder of the Chair of Food Chemistry		Institute of Pharmacy and Food Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	(not) successfully completed	--
Duration	Module level	Other prerequisites
1 semester	graduate	Please consult with course advisory service.
Contents		
This module gives students the opportunity to transfer credits from chemistry-related courses that are offered by other Faculties and are not explicitly included in the academic regulations for their programmes. Students MUST consult with their course advisors in advance.		
Intended learning outcomes		
Students have developed the knowledge and skills taught in the courses attended by them.		
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)		
assessment: a) 1 to 3 written examinations (1 written examination: approx. 90 minutes or approx. 120 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) or successful completion as certified by the lecturer Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Food Chemistry (2012)		

Module title		Abbreviation
Tutoring 1 (practical course)		o8-WRM1-102-m01
Module coordinator		Module offered by
Dean of Studies Chemie (Chemistry)		Faculty of Chemistry and Pharmacy
ECTS	Method of grading	Only after succ. compl. of module(s)
5	(not) successfully completed	--
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
This module gives students the opportunity to teach a tutorial accompanying a lecture offered by the Faculty of Chemistry and Pharmacy and learn how to present and teach scientific topics in an appropriate manner.		
Intended learning outcomes		
Students are able to teach students in earlier stages of their degrees and tailor their teaching to those students' needs.		
Courses (type, number of weekly contact hours, language — if other than German)		
Ü (no information on SWS (weekly contact hours) and course language available)		
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
preparation of materials for demonstrations and exercises Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Chemistry (2010) Master's degree (1 major) Food Chemistry (2012) Master's degree (1 major) FOKUS Pharmacy (2012)		

Module title		Abbreviation
Tutoring 2 (practical course)		o8-WRM2-102-m01
Module coordinator		Module offered by
Dean of Studies Chemie (Chemistry)		Faculty of Chemistry and Pharmacy
ECTS	Method of grading	Only after succ. compl. of module(s)
5	(not) successfully completed	--
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
This module gives students the opportunity to teach a tutorial accompanying a lecture offered by the Faculty of Chemistry and Pharmacy and learn how to present and teach scientific topics in an appropriate manner.		
Intended learning outcomes		
Students are able to teach students in earlier stages of their degrees and tailor their teaching to those students' needs.		
Courses (type, number of weekly contact hours, language — if other than German)		
Ü (no information on SWS (weekly contact hours) and course language available)		
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
preparation of materials for demonstrations and exercises Language of assessment: German or English		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Chemistry (2010) Master's degree (1 major) Food Chemistry (2012)		