Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

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: 2021
Responsible: Faculty of Chemistry and Pharmacy
Responsible: Institute of Pharmacy and Food Chemistry

Contents

The subject is divided into

Learning Outcomes

German contents and learning outcome available but not translated yet.

Wissenschaftliche Befähigung

- Die Absolventinnen und Absolventen können zum Lösen einer wissenschaftlichen Fragestellung relevante Analyten in Lebensmitteln, Kosmetika, Bedarfsgegenständen, Umwelt und Futtermitteln auswählen und anhand der von ihnen ermittelten validen Analysenergebnisse korrekt die Identität, Qualität und Sicherheit von Lebensmitteln bewerten. Falls nicht vorhanden, entwickeln und validieren sie die hierzu benötigten instrumentellen sowie zell- und molekularbiologischen, quantitativen Methoden.
- Für die Auswahl relevanter Analyten besitzen die Absolventinnen und Absolventen vertiefte theoretische und praktische Kenntnisse aus den Bereichen Bio- und Umweltchemie, Lebensmittel- und Umwelttoxikologie, Lebensmittelrecht sowie der Chemie und Technologie der Lebensmittel, Kosmetika, Bedarfsgegenstände und Futtermittel. Diese eignen sie sich in den Lehrveranstaltungen der entsprechenden Module an und weisen ihr Wissen mit dem Bestehen der dazu gehörigen Klausuren und mündlichen Prüfungen nach.
- Das Entscheidungsvermögen der Absolventinnen und Absolventen, ob bestehende Methoden hinsichtlich ihrer Eignung für die Bestimmung der Analyten optimiert, weiter- oder neu entwickelt werden müssen, basiert zum einen auf ihrer Kenntnis der möglichen Methoden und ihrem Verständnis derer chemischen und physikalischen Prinzipien. Zum anderen verfügen sie über Kenntnisse in den Bereichen der Warenkunde, (Lebensmittel-)chemie und Lebensmittelrecht und können so die Eignung einer Methode auch hinsichtlich erwarteter Menge, der Matrix des Lebensmittels, Kosmetikums, Bedarfsgegenstands oder Futtermittels sowie möglicher Interferenzen und zu überwachender Grenzwerte beurteilen. In geringerem Umfang gilt dies auch für den Bereich der Umweltanalytik. Dass sich die Absolventinnen und Absolventen in Veranstaltungen der entsprechenden Module diese Kompetenzen aneignen, belegen sie durch das Bestehen der jeweiligen Abschlussklausuren.
- Die Absolventinnen und Absolventen können bei der Versuchsplanung bisher angeeignetes Fachwissen auf konkrete experimentelle oder theoretische Aufgabenstellungen anwenden, systematische Einflussfaktoren und Fehlerquellen identifizieren sowie sicherheitsrelevante Aspekte berücksichtigen. Das hierfür notwendige Abstraktionsvermögen, die Problemlösungskompetenz und die Fähigkeit, komplexe Zusammenhänge zu strukturieren, vertiefen die Studierenden in forschungsbezogenen Praktika bei denen sie wissenschaftliche Fragestellungen lösen.
- Das Vorgehen entwickeln die Studierenden unter Begleitung der Lehrenden selbstständig und diskutieren es in der Gruppe. Dies beinhaltet auch das Festlegen geeigneter Qualitätssicherungsmaßnahmen zur Sicherstellung der Validität der Ergebnisse und die Ergebnisdarstellung.
- Nach der Präsentation und Diskussion der geplanten Vorgehensweisen in Seminaren und Besprechungen, sowohl untereinander, als auch mit den Lehrenden, zeigen die Studierenden, dass die geplanten Vorgehensweisen in den jeweiligen Praktika auch praktisch sicher umgesetzt und transparent dokumentiert werden können.
- Die Absolventinnen und Absolventen können die Aussagekraft und Limitierungen der Analysenergebnisse für den geplanten Zweck beurteilen. Durch die Begleitung der Praktikumsversuche, anstatt der Abnahme der Entscheidung über Richtig und Falsch durch die Lehrpersonen, übernehmen die Studierenden für die in den Praktika generierten Werte selbst die Verantwortung und demonstrieren so die erworbene Kompetenz.
- Die abschließende Beantwortung der wissenschaftlichen Fragestellung erfolgt selbständig nach Diskussion innerhalb der Studierenden und mit den Lehrenden durch die Anwendung des theoretischen Fachwissens in den entsprechenden Disziplinen (Lebensmittel- und Umwelttoxikolo-

gie, Biochemie, Lebensmittel- und Umweltchemie, Technologie der Lebensmittel) und geeigneter Methoden der statistischen Analyse und Darstellung und belegen im Dialog mit den Lehrenden ihre Kompetenz.

- Die Befähigung zur Methodenentwicklung und -validierung wird durch zudem eigenständiges Lösen einzelner, üblicherweise bei der Entwicklung quantitativer (massenspektrometrischer) Methoden auftretender exemplarischer Fragestellungen in den Lehrveranstaltungen zu den Themenbereichen Umweltanalytik, eingeführt und durch eigenständige Bewertung der Validität einer publizierten Methode demonstriert. Bei circa der Hälfte der Masterarbeiten besteht das Hauptziel in der Entwicklung, Etablierung oder Validierung einer Methode.
- Die Eigenständigkeit im Wissenserwerb und die evidenzbasierte Diskussion werden insbesondere in den Lehrveranstaltungen mit Inhalten aus dem Umwelt- und Verbraucherschutz von den Lehrenden durch die aktive Anwendung von Datenbanken und Online Tools wissenschaftlicher Behörden und Gremien (wie die European Food Safety Authority und des Bundesinstituts für Risikobewertung) gefördert.

Befähigung zur Aufnahme einer Erwerbstätigkeit

- Die beschriebene wissenschaftliche Befähigung entspricht den Anforderungen an den Zweiten Prüfungsabschnitt der Staatsprüfung, die (nach der einjährigen Zusatzausbildung in der amtlichen Lebensmittelüberwachung) zum Dritten Prüfungsabschnitt und damit der Berufsbezeichnung „Staatlich geprüfte Lebensmittelchemikerin/staatlich geprüfter Lebensmittelchemiker (und des damit verbundenen Berufsfelds) führt.
- Die bis zum Zweiten und ggf. Dritten Prüfungsabschnitt gesammelten wissenschaftlichen Kompetenzen ermöglichen die Leitung einer Abteilung oder Aufgaben im Qualitätsmanagement in der amtlichen Lebensmittelüberwachung, in Handelslaboren sowie in Laboren der lebensmittel- kosmetika-, bedarfsgegenstände-, futtermittel- und arzneimittelproduzierenden Klein- und mittelständischen Industrie zu übernehmen. Sie befähigen zudem zur Promotion im Bereich der Lebensmittelchemie und der Lebenswissenschaften, die Berufsfelder im gesundheitlichen Verbraucherschutz bei nationalen und internationalen Behörden, leitende Positionen in der kosmetika-, bedarfsgegenstände-, futtermittel- und arzneimittelproduzierenden Industrie sowie im Wissenschaftsmanagement erschließt. Im Rahmen des Wahlpflichtpraktikums und der Präsentation der Erfahrungen der Studierenden, sowie durch Vorträge aktueller und ehemaliger wissenschaftlicher Mitarbeiterinnen und Mitarbeiter des Lehrstuhls im Rahmen der Seminare des Forschungspraktikums können die Studierenden für sie geeignete Berufsfelder von Lebensmittelchemikerinnen und Lebensmittelchemikern identifizieren.
- Neben den rein fachlichen Kompetenzen kommen den Absolventinnen und Absolventen im Berufsleben die im Studium gesammelte Erfahrung mit Problemlösungsstrategien, erfolgreicher, zielorientierter Zusammenarbeit im Team, Eigenständigkeit im Wissenserwerb und Eigenverantwortlichkeit zugute.

Persönlichkeitsentwicklung

- Die Absolventinnen und Absolventen wenden die Regeln guter wissenschaftlicher Praxis an und beachten sie. Die Lehrenden fördern zudem die Selbstverantwortung für den Wissenserwerb sowie ein an wissenschaftlichen Werten orientiertes Denken und Handeln. Das eigenverantwortliche Arbeiten und die ergebnisoffene Diskussion mit den Lehrenden fördert das Bewusstsein für Selbstreflexion, Offenheit, Verlässlichkeit, Überprüfbarkeit, Transparenz, Objektivität und Eindeutigkeit. Die Absolventinnen und Absolventen müssen sich während ihres Industrie- oder Auslandspraktikums im Wahlpflichtbereich in neue Arbeitsweisen und Organisationsstrukturen einfinden und erweitern so ihren persönlichen Horizont.

Befähigung zum gesellschaftlichen Engagement

- Die Absolventinnen und Absolventen haben ihr Wissen bezüglich wirtschaftlicher, gesellschaftlicher und naturwissenschaftlicher Fragestellungen erweitert und können begründet Position

beziehen. Durch die Behandlung aktueller Fragestellungen im Bereich des Umwelt- und Verbraucherschutzes sowie der Lebensmittelsicherheit werden die Studierenden in den Lehrveranstaltungen für die wirtschaftliche und gesellschaftliche Bedeutung ihrer Tätigkeiten sensibilisiert und ermutigt ihre im Studium erarbeiteten Kompetenzen aktiv in die Gesellschaft einzubringen.

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:

ASPO2015

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

19-May-2021 (2021-55)

22-Mar-2022 (2022-8)

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

(75 ECTS credits)

Module title			Abbreviation
Nutritional Biochemistry			08-LMC-BCdE1-161-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	--	

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 (2) + V (2)

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

a) written examination (60 to 120 minutes) or
b) oral examination of one candidate each (approx. 20 minutes) or
c) oral examination in groups (groups of 2, approx. 30 minutes total)
Language of assessment: German or English

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 3. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh. Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 2. Letter e of Annex 1 of APOLmCh.

Workload

210 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Nutritional Biochemistry - Practical course			08-LMC-BCdE2-192-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	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

German contents available but not translated yet.

Zellfraktionierung und -charakterisierung, Enzymkinetik, Umsetzung eines Substrates mit Zellfraktionen und Identifizierung der Metaboliten mittels instrumentell-analytischer Verfahren.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden homogenisieren und fraktionieren selbständig Zellen und Gewebe und charakterisieren die Fraktionen mit biochemischen Methoden, insbesondere durch Bestimmung von Enzymkinetiken. Die Studierenden planen selbständig einen Inkubationsansatz für eine metabolische Umsetzung, führen diesen aus und identifizieren die Metaboliten mit geeigneten instrumentell-analytischen Methoden.

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

P (4) + P (4)

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

lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical assignments (approx. 10 pages) and written report (approx. 5 to 10 pages)
Language of assessment: German or English
Assessment offered: usually once a year, winter semester

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 3. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh. Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 1. Letter c of Annex 1 of APOLmCh.

Workload

210 h

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 (2019)

Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Toxicology of Food			08-LMC-LMTox-192-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	--	

Contents

German contents available but not translated yet.

Grundlagen der Einwirkungsarten von natürlichen und synthetischen Chemikalien, Toxikodynamik (Rezeptor-Theorie, Dosis-Wirkungs-Beziehungen); Toxikokinetik (Aufnahme, Verteilung, Biotransformation, Elimination); Einteilung von Giftstoffen und ihrer biologischen Wirkung; Toxikologie und Tierversuche; Untersuchungsmethoden der Toxikologie (Prüfung auf akute, subakute, subchronische, chronische, kanzerogene, mutagene und teratogene Wirkungen); Prinzipien von epidemiologischen Erhebungen; Risikoabschätzung und Festlegung von Höchstmengen, Grenzwerten und Richtwerten.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden kennen die Toxikokinetik, die Wirkmechanismen und deren experimentelle Nachweise von lebensmittelchemisch relevanten natürlichen und synthetischen Chemikalien sowie die Prinzipien von epidemiologischen Erhebungen. Sie kennen die Vorgehensweise bei einer Risikoabschätzung und bei der Festlegung von Grenz- und Richtwerten. Die Studierenden wählen selbständig einen angemessenen Test für eine einfache lebensmitteltoxikologische Fragestellung aus und führen ihn durch.

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

V (2) + V (2) + P (2)

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

a) written examination (60 to 120 minutes) or
b) oral examination of one candidate each (approx. 20 minutes) or
c) oral examination in groups (groups of 2, approx. 30 minutes total)
and
lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical assignments (approx. 10 pages) and written report (approx. 5 to 10 pages)
Language of assessment: German or English
Assessment offered: usually once a year, winter semester

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 5. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh. Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 1. Letter d and 2. Letter g of Annex 1 of APOLmCh.

Workload
270 h
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 (2019) Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Food Law, Tobacco Law, Animal Feed Law and Tangented Law			08-LMC-LMRecht-161-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**	
2 semester	graduate	--	

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 are able to identify foods, cosmetics, feeds, consumer goods and tobacco products as well as to assess them on the basis of the relevant laws. They know which national and international bodies are responsible for which food regulatory issues. They have developed the necessary theoretical knowledge to enable them to develop a quality management system and work according to the standards of good laboratory practice.

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

V (1.3) + V (1.3)

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

a) written examination (60 to 120 minutes) or
b) oral examination of one candidate each (approx. 20 minutes) or
c) oral examination in groups (groups of 2, approx. 30 minutes total)
Language of assessment: German or English

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 6. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh. Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 2. Letters h, i and j of Annex 1 of APOLmCh.

Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Special Food and Animal Feed			08-LMC-SpezLM-212-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)**	
6	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Chemical composition, production and analysis of conventional and special foodstuffs and animal feed. Chemical alteration, function and effect of food ingredients as well as legal regulations in the field of special foodstuffs and animal feed. Conception and performance of experiments as well as evaluation and interpretation of measurement data with the objective to answer a scientific issue.

Intended learning outcomes

The students know the chemistry and analysis of foodstuffs and animal feed as well as of special foodstuffs with functional ingredients or genetically modified organisms. The students are able to understand and critically evaluate scientific studys and assessments of food ingredients and special foodstuffs, also considering legal regulations. The students can identify advantages and disadvantages of different analytical methods and select appropriate methods for answering a scientific issue. The students are able to evaluate the identity, quality and safety of foodstuffs using valid analysis results, appropriate methods for statistical evaluation and presentation.

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

V (1) + V (1) + P (1) + Ü (1)

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

a) written examination (60 to 120 minutes) or
b) oral examination of one candidate each (approx. 20 minutes) or
c) oral examination in groups (groups of 2, approx. 30 minutes total)
Language of assessment: German or English

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 1. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh.
Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 1. Letter a and No. II 2. Letter a and c of Annex 1 of APOLmCh.

Workload

180 h

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 (2021)

Module title			Abbreviation
Analysis and Evaluation of Food-stuffs, Cosmetics, Commodities, Tobacco Products, and Animal Feed			08-LMC-LMCPM-212-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)**	
6	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
2 semester	graduate	--	

Contents

Quantitative analysis of relevant ingredients of foodstuffs, tabacco products, cosmetics, commodities and animal feed by applying appropriate calibration and validation strategies. Basic concepts, technological processes, qualitiy and monitoring in the field of animal feed.

Intended learning outcomes

The students can select an appropriate method for the quantitative analysis of foodstuffs, tabacco products, cosmetics, commodities and animal feed and develop a calibration strategy considering analyte-and matrix-dependent characteristics. They can confim the validity of test results by selecting suitable validation parameters and evaluate the test results with respect to scientific issues. Due to basic knowledge in the field of products, technology and monitoring of animal feed as well as in the field of animal feeding, the students are able to understand the link between quality of animal feed and quality of foodstuffs and to identify critical parameters in the quality of animal feed.

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

P (8) + S (1) + S (1)

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

a) written examination (60 to 120 minutes) or
b) oral examination of one candidate each (approx. 20 minutes) or
c) oral examination in groups (groups of 2, approx. 30 minutes total)
Language of assessment: German or English

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 1. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh.
Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 1. Letter a and No. II 2. Letters a and c of Annex 1 of APOLmCh.

Workload

180 h

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 (2021)

Module title			Abbreviation
Cosmetics, Commodities and Tobacco Products			08-LMC-KBT-161-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	--	

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 cosmetics, consumer goods and tobacco products as well as with their chemical constituents. They know methods for the analysis of cosmetics, consumer goods and tobacco products, the relevant legal provisions as well as constituents that have pharmacological and toxicological effects.

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

V (1) + V (1)

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

a) written examination (60 to 120 minutes) or
b) oral examination of one candidate each (approx. 20 minutes) or
c) oral examination in groups (groups of 2, approx. 30 minutes total)
Language of assessment: German or English

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 1. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh. Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 2. Letter a of Annex 1 of APOLmCh.

Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Environmental Analysis			08-LMC-UA-161-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	--	

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 (1) + V (1) + Ü (1)

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

a) written examination (60 to 120 minutes) or
b) oral examination of one candidate each (approx. 20 minutes) or
c) oral examination in groups (groups of 2, approx. 30 minutes total)
Language of assessment: German or English

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 5. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh. Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 2. Letter g of Annex 1 of APOLmCh.

Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Technology of Foodstuffs including water for human use, Cosmetics, Commodities, Tobacco Products, and Animal Feed			08-LMC-LMT-161-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	--	

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 (2) + E (1)

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

a) written examination (60 to 120 minutes) or
b) oral examination of one candidate each (approx. 20 minutes) or
c) oral examination in groups (groups of 2, approx. 30 minutes total)
Language of assessment: German or English

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 2. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh. Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 1. Letter e and No. II 2. Letters b and d of Annex 1 of APOLmCh.

Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title	Abbreviation
Development and Validation of Methods in Food Analysis	08-LMC-MEV-212-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

German contents available but not translated yet.

Theorie und Übungen zur Entwicklung sowie der statistischen Validierung von Methoden zur quantitativen Analyse von Lebensmitteln, Tabakerzeugnissen, kosmetischen Mitteln, Bedarfsgegenständen und Futtermitteln.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden kennen Entwicklungsstrategien und statistischen Validierungsparameter einer quantitativen analytischen Methode.

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

V (1) + Ü (2)

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

a) written exercise (approx. 10 pages) or
b) talk (20 minutes)
Language of assessment: German or English

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 1. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh.
Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 1. Buschtabe a und No. II 2. Letters a and c of Annex 1 of APOLmCh.

Workload

150 h

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 (2021)

Module title			Abbreviation
Current Research in Food Chemistry			08-LMC-LMCF-161-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	(not) successfully completed	--	
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 have developed the ability to find literature about a particular research problem, perform experiments to solve that problem, prepare an account of their work and deliver a presentation on their findings.

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

S (1) + Ü (1) + P (17)

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

lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical assignments (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

450 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Compulsory Electives

(15 ECTS credits)

Subfield Laboratory Cource in Specific Topic

(5 ECTS credits)

Module title			Abbreviation
Advanced Laboratory Courses in the Toxicology of Food			08-LMC-WPV1-192-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

German contents available but not translated yet.

Zellkulturtechniken, erweiterte Toxizitätstests (beispielsweise Genotoxizitätstests oder Reportergenassays).

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden kultivieren selbständig adhärente und Suspensionszelllinien und wenden unter Anleitung Toxizitätstests zur Bestimmung des biologischen Potentials von Inhaltsstoffen von Lebensmitteln, Kosmetika, Bedarfsgegenständen oder Tabakerzeugnissen an.

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

P (8)

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

lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical assignments (approx. 10 pages) and written report (approx. 5 to 10 pages)
Language of assessment: German or English
Assessment offered: usually once a year, winter semester

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 5. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh. Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 1. Letter d and No. II 2. Letter g of Annex 1 of APOLmCh.

Workload

150 h

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 (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title	Abbreviation
Laboratory Course in Environmental Analysis	08-LMC-WPV2-192-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

German contents available but not translated yet.

Spurenanalytik mittels Gas- oder Flüssigkeitschromatographie gekoppelt mit Massenspektrometrie.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden können qualitativ und quantitativ Umweltkontaminanten oder Rückstände in Umweltproben mittels etablierten massenspektrometrischen Methoden bestimmen.

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

P (8)

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

lab course assessment components: Vortestate and Nachtestate (pre and post-experiment exams, approx. 15 minutes), assessment and documentation of practical assignments (approx. 10 pages) and written report (approx. 5 to 10 pages)
Language of assessment: German or English
Assessment offered: usually once a year, winter semester

Allocation of places

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Additional information

Pursuant to Section 20 Subsection 2 Sentence 1 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. I 5. of Annex 3 of APOLmCh and Section 20 Subsection 3 Sentence 1 APOLmCh. Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 1. Letter d and No. II 2. Letter g of Annex 1 of APOLmCh.

Workload

150 h

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 (2019)
Master's degree (1 major) Food Chemistry (2021)

Subfield Additional Qualification

(10 ECTS credits)

Module title			Abbreviation
Industrial Internship 1 (Short)			08-LMC-WPZ1-161-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 (0)

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 report (approx. 5 pages) or talk (15 minutes)
Language of assessment: German or English

Allocation of places

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Additional information

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Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Industrial Internship 2 (Long)			08-LMC-WPZ2-161-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**	
1-2 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 (0)

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 report (approx. 5 pages) or talk (15 minutes)
Language of assessment: German or English

Allocation of places

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Additional information

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Workload

300 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Safety Evaluation of Food			08-LMC-WPZ3-161-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 (0)

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 report (approx. 5 pages)
Language of assessment: German or English

Allocation of places

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Additional information

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Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Courses related to Food Chemistry outside of the Natural Sciences			08-LMC-WPZ5-161-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	undergraduate	Please consult with course advisory service in advance.	

Contents

German contents available but not translated yet.

Das Modul bietet die Möglichkeit, chemienahe Veranstaltungen anderer Fachbereiche, die nicht explizit in der Studienordnung vorgesehen sind, anrechnen zu lassen. Eine vorherige Rücksprache mit der Fachstudienberatung ist zwingend notwendig.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden erwerben Kompetenzen entsprechend der besuchten Veranstaltungen.

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

V (0)

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

[Assessment: a) written examination (60 to 120 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups of 2 candidates (approx. 30 minutes total)] or successful completion as certified by lecturer
Language of assessment: German or English

Allocation of places

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Additional information

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Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Courses related to Food Chemistry within the Natural Sciences			08-LMC-WPZ6-161-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	undergraduate	Please consult with course advisory service in advance.	

Contents

German contents available but not translated yet.

Das Modul bietet die Möglichkeit, chemienahe Veranstaltungen anderer Fachbereiche, die nicht explizit in der Studienordnung vorgesehen sind, anrechnen zu lassen. Eine vorherige Rücksprache mit der Fachstudienberatung ist zwingend notwendig.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden erwerben Kompetenzen entsprechend der besuchten Veranstaltungen.

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

V (0)

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

[Assessment: a) written examination (60 to 120 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups of 2 candidates (approx. 30 minutes total)] or successful completion as certified by lecturer
Language of assessment: German or English

Allocation of places

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Additional information

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Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Tutoring 1 (practical course)			08-WRM1-161-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	It is not permitted to use activities performed under a research assistant contract for this module. The tutorial must accompany a different course than the tutorial held in module 08-WRM1.	

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)

T (3)

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

Tutoring activities, (preparation of status and/or wrap-up reports, approx. 100 hours total)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2016)
Master's degree (1 major) Chemistry (2018)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)
Master's degree (1 major) Chemistry (2024)

Module title			Abbreviation
Tutoring 2 (practical course)			08-WRM2-161-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	It is not permitted to use activities performed under a research assistant contract for this module. The tutorial must accompany a different course than the tutorial held in module 08-WRM1.	

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)

T (3)

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

Tutoring activities, (preparation of status and/or wrap-up reports, approx. 100 hours total)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2016)
Master's degree (1 major) Chemistry (2018)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)
Master's degree (1 major) Chemistry (2024)

Module title			Abbreviation
Foreign Studies (short)			08-APM1-161-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	May not be combined with 08-APM2.	

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 (0)
Module taught in: German and/or English and potentially language of the respective country

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

a) report (10 to 20 pages) or
b) talk (10 to 20 minutes)
Language of assessment: German and/or English and potentially language of the respective country

Allocation of places

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Additional information

Additional information on module duration: block placement abroad with a duration of no less than 20 working days.

Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2016)
Master's degree (1 major) Chemistry (2018)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)
Master's degree (1 major) Chemistry (2024)

Module title			Abbreviation
Foreign Studies (long)			08-APM2-161-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**	
1 semester	graduate	May not be combined with 08-APM1.	

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 (0)
Module taught in: German and/or English and potentially language of the respective country

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

a) report (15 to 30 pages) or
b) talk (15 to 30 minutes)
Language of assessment: German and/or English and potentially language of the respective country

Allocation of places

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Additional information

Additional information on module duration: block placement abroad with a duration of no less than 40 working days.

Workload

300 h

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 (2016)
Master's degree (1 major) Food Chemistry (2016)
Master's degree (1 major) Chemistry (2018)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)
Master's degree (1 major) Chemistry (2024)

Thesis

(30 ECTS credits)

Module title			Abbreviation
Master Thesis Food Chemistry			08-LMC-MA-161-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)**	
25	numerical grade	--	
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.

Intended learning outcomes

Students independently investigate a problem in food chemistry.

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

No courses assigned to module

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. 40 pages)
Language of assessment: German or English

Allocation of places

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Additional information

Time to complete: 6 months.

Workload

750 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)

Module title			Abbreviation
Master Thesis Defense			08-LMC-KOLL-161-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	08-LMC-MA	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation of the findings from the students' thesis projects.

Intended learning outcomes

Students are able to deliver a presentation on their research findings as well as to discuss them.

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

K (0)

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

final colloquium (approx. 30 minutes): Talk (approx. 15 minutes) with subsequent discussion (approx. 15 minutes)
Language of assessment: German or English

Allocation of places

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Additional information

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Workload

150 h

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 (2016)
Master's degree (1 major) Food Chemistry (2019)
Master's degree (1 major) Food Chemistry (2021)