



Module Catalogue

for the Module studies (Bachelor)

Functional Materials

Examination regulations version: 2020
Responsible: Faculty of Chemistry and Pharmacy
Responsible: Chair of Chemical Technology of Material Synthesis

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The subject is divided into

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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:

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

15-May-2019 (2019-36)

27-Jun-2019 (2019-41)

14-Nov-2019 (2019-52)

22-Jan-2020 (2020-13)

06-May-2020 (2020-39)

22-Jul-2020 (2020-57)

17-Dec-2020 (2020-110)

10-Mar-2021 (2021-17)

09-Jun-2021 (2021-58)

22-Dec-2021 (2021-85)

05-Jul-2022 (2022-52)

31-Jan-2023 (2022-86)

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.

Winter Term 2020

(o ECTS credits)

Module title		Abbreviation
Experimental Chemistry		o8-AC-ExChem-152-mo1
Module coordinator		Module offered by
lecturer of lecture "Experimentalchemie" (Experimental Chemistry)		Institute of Inorganic Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
Contents		
The module provides an overview of the fundamental knowledge of chemistry. Emphasis is placed on the material and particle level, metals, acid-base reactions, the periodic table, chemical equilibrium and complexometry.		
Intended learning outcomes		
The student understands the principles of the periodic table and can obtain information from it. He/she is proficient in basic models of the structure of matter and can describe them properly. He/she can depict chemical reactions using typical chemical formula language and interpret them by identifying the type of reaction.		
Courses (type, number of weekly contact hours, language – if other than German)		
V (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)		
written examination (approx. 90 minutes) 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		
Teaching cycle: every year, winter semester		
Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module title		Abbreviation
Material Science 1 (Basic introduction)		o8-FU-MaWi1-152-mo1
Module coordinator		Module offered by
holder of the Chair of Chemical Technology of Material Synthesis		Chair of Chemical Technology of Material Synthesis
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
Contents		
Uncertainty analysis, process engineering: mixing, comminution, agglomeration, separation, drying, conveying. Vacuum technology, coating processes, sintering.		
Intended learning outcomes		
The students possess comprehensive knowledge about various techniques from different areas of the field of chemical process engineering. For a given objective they are able to weigh the pros and cons of different techniques and can suggest ways of fabrication, processing and treatment of materials. Furthermore they are confident in handling of measurement data as well as statistical and systematic errors and possess extensive knowledge about nomenclature, significance as well as practically determining characteristic material properties.		
Courses (type, number of weekly contact hours, language – if other than German)		
V (3) + 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 (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) 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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Winter Term 2021

(o ECTS credits)

Module title		Abbreviation
Experimental Chemistry		o8-AC-ExChem-152-mo1
Module coordinator		Module offered by
lecturer of lecture "Experimentalchemie" (Experimental Chemistry)		Institute of Inorganic Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
Contents		
The module provides an overview of the fundamental knowledge of chemistry. Emphasis is placed on the material and particle level, metals, acid-base reactions, the periodic table, chemical equilibrium and complexometry.		
Intended learning outcomes		
The student understands the principles of the periodic table and can obtain information from it. He/she is proficient in basic models of the structure of matter and can describe them properly. He/she can depict chemical reactions using typical chemical formula language and interpret them by identifying the type of reaction.		
Courses (type, number of weekly contact hours, language – if other than German)		
V (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)		
written examination (approx. 90 minutes) 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		
Teaching cycle: every year, winter semester		
Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Winter Term 2022

(o ECTS credits)

Module title		Abbreviation
Experimental Chemistry		o8-AC-ExChem-152-m01
Module coordinator		Module offered by
lecturer of lecture "Experimentalchemie" (Experimental Chemistry)		Institute of Inorganic Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
Contents		
The module provides an overview of the fundamental knowledge of chemistry. Emphasis is placed on the material and particle level, metals, acid-base reactions, the periodic table, chemical equilibrium and complexometry.		
Intended learning outcomes		
The student understands the principles of the periodic table and can obtain information from it. He/she is proficient in basic models of the structure of matter and can describe them properly. He/she can depict chemical reactions using typical chemical formula language and interpret them by identifying the type of reaction.		
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Teaching cycle		
Teaching cycle: every year, winter semester		
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