

## Annex SFB

### Studienfachbeschreibung (subject description, SFB) for the subject Chemistry as Unterrichtsfach with the degree "Erste Staatsprüfung für das Lehramt an Mittelschulen"

Responsible: Faculty of Chemistry and Pharmacy

Examination regulations version: 2015

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

Information on assessment procedures: 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 a 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:

**LASPO2015**

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

**o8-Sep-2015 (2015-129)**

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.

Every module will be described using the following form:

Abbreviation	<b>Module title</b>						
	ECTS		Duration	(in semesters)	Method of grading		Module level
	Courses		To be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y				
	Method of assessment						
	Only after successful completion of		if applicable				
	Other prerequisites		if applicable				
	Participants and allocation of places		if applicable				
	Additional information		if applicable				
	Referred to in LPO I		if applicable (examination regulations for teaching-degree programmes)				

Scientific Discipline (54 ECTS credits)							
Compulsory Courses (54 ECTS credits)							
o8-AC1-152-mo1	<b>Principles of Inorganic Chemistry</b>						
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level   undergraduate
	Courses	V (4) + V (2)					
	Method of assessment	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					
	Referred to in LPO I	§ 42 I Nr. 1 and § 22 II Nr. 1 h) § 62 I Nr. 1					
o8-AC-KAC-152-mo1	<b>Concepts of Inorganic Chemistry</b>						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level   undergraduate
	Courses	V (1) + Ü (2)					
	Method of assessment	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					
	Referred to in LPO I	§ 42 I Nr. 1 § 62 I Nr. 1					
o8-ACP1-LA-152-mo1	<b>Inorganic and Analytical Chemistry (lab) (teaching degree)</b>						
	ECTS	7	Duration	1 semester	Method of grading	(not) successfully completed	Modul level   undergraduate
	Courses	P (12)					
	Method of assessment	Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Assessment offered: Once a year, summer semester Language of assessment: German and/or English					
	Referred to in LPO I	§ 42 I Nr. 1 § 62 I Nr. 1					
o8-OC1-LAGMR-152-mo1	<b>Organic Chemistry 1 (teaching degree for secondary schools)</b>						
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level   undergraduate
	Courses	V (3) + Ü (1)					
	Method of assessment	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					
	Referred to in LPO I	§ 42 I Nr. 2 and § 22 II Nr. 1 h)					

o8-OC2-VL-152-mo1	<b>Organic Chemistry 2</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (3) + Ü (1)						
	Method of assessment	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						
	Referred to in LPO I	§ 42 I Nr. 2 and § 22 II Nr. 1 h) § 62 I Nr. 2						
o8-OCP-LAGMR-152-mo1	<b>Organic Chemistry - laboratory course (teaching degree for secondary schools)</b>							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	P (7)						
	Method of assessment	Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Assessment offered: Once a year, summer semester Language of assessment: German and/or English						
	Modules successfully completed	o8-OC1-LAGMR						
Referred to in LPO I	§ 42 I Nr. 2							
o8-PC-LAGMR-152-mo1	<b>Physical Chemistry (teaching degree for secondary schools)</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (1) + V (1) + Ü (1)						
	Method of assessment	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						
	Referred to in LPO I	§ 42 I Nr. 1 and § 22 II Nr. 1 h)						
o8-BC1-152-mo1	<b>Biochemistry 1</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (1)						
	Method of assessment	written examination (approx. 60 to 90 minutes)						
	Referred to in LPO I	§ 42 I Nr. 2 § 62 I Nr. 2						

o8-ÜiVmD- LAGMR-152-mo1	<b>Exercises in Experimental Presentation (teaching degree for secondary schools)</b>							
	ECTS	6	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (3) + Ü (3) + Ü (3)						
	Method of assessment	One talk each in the fields of inorganic, organic and physical chemistry including demonstrations (approx. 45 minutes each) Assessment offered: Once a year, winter semester Language of assessment: German and/or English						
	Modules successfully completed	o8-OCP-LAGMR						
Referred to in LPO I	§ 42 I Nr. 3							
<b>Teaching (12 ECTS credits)</b>								
<b>Compulsory Courses (12 ECTS credits)</b>								
o8-FD1- LAGMR-152-mo1	<b>Introduction into Teaching Chemistry for Elementary, Secondary and Middle School</b>							
	ECTS	4	Duration	1 semester	Method of grading	numerical grade	Modul level	unknown
	Courses	V (2) + S (2)						
	Method of assessment	a) written examination (approx. 90 minutes) and b) presentation (approx. 20 minutes) Language of assessment: German and/or English						
Referred to in LPO I	§ 42 I Nr. 4							
o8-FD2-LAGM-152- mo1	<b>Teaching Chemical Practice for Elementary and Secondary School</b>							
	ECTS	5	Duration	2 semester	Method of grading	numerical grade	Modul level	unknown
	Courses	S (2) + S (2)						
	Method of assessment	a) presentation with practical examination (approx. 30 minutes) and b) presentation (approx. 20 minutes) Language of assessment: German and/or English						
Referred to in LPO I	§ 38 I Nr. 1 § 42 I Nr. 4 and § 36 I Nr. 7							
o8-FD3-LAGM-152- mo1	<b>Chemistry in Elementary and Secondary School</b>							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	unknown
	Courses	S (2)						
	Method of assessment	presentation (approx. 20 minutes) Language of assessment: German and/or English						
Referred to in LPO I	§ 42 I Nr. 4							
<b>Paper (4 ECTS credits)</b>								
Students studying for a teaching degree Mittelschule must complete a practical training in didactics and teaching methodology (studienbegleitendes fachdidaktisches Praktikum) which refers to one of the subjects they selected as vertieft studiertes Fach (subject studied with a focus on the scientific discipline) pursuant to Section 34 Subsection 1 No. 4 LPO I (examination regulations for teaching-degree programmes). The obligatory accompanying tutorial is offered by the respective subject. The ECTS								

credits obtained are counted in the subject Erziehungswissenschaften pursuant to Section 10 Subsection 3 LASPO (general academic and examination regulations for teaching-degree programmes).

o8-Ch-SBPrakt-LAMS-152-m01	<b>Internship at Secondary Schools</b>							
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	unknown
	Courses	P (0) + S (2)						
	Method of assessment	written elaboration of teaching practice to be prepared at home (approx. 8 pages)						
Referred to in LPO I	§ 34 I 1 Nr. 4							

**Freier Bereich (general as well as subject-specific electives) (0-15 ECTS credits)**  
Teaching degree students must take modules worth a total of 15 ECTS credits in the area Freier Bereich (general as well as subject-specific electives) (Section 9 LASPO (general academic and examination regulations for teaching-degree programmes)). To achieve the required number of ECTS credits, students may take any modules from the areas below.  
Freier Bereich -- interdisciplinary: The interdisciplinary additional offer for a teaching degree can be found in the respective Annex "Ergänzende Bestimmungen für den "Freien Bereich" im Rahmen des Studiums für ein Lehramt".

**Subject-specific Extra Skills**  
(Freier Bereich (general as well as subject-specific electives) -- subject specific)

o8-AC-Spec-152-m01	<b>Practical spectroscopy 2</b>							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2)						
	Method of assessment	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						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							

o8-OC-Spec-152-m01	<b>Practical spectroscopy 1</b>							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2)						
	Method of assessment	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						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 62 I Nr. 2							

o8-AC-FK-152-mo1	<b>Solid State Chemistry</b>							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2)						
	Method of assessment	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						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 62 I Nr. 1							
o8-AC-ELO-152-mo1	<b>Elemental Organic Chemistry</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (1)						
	Method of assessment	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						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
o8-OC3-152-mo1	<b>Organic Chemistry 3</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2)						
	Method of assessment	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						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
o8-OC4-152-mo1	<b>Organic Chemistry 4</b>							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2)						
	Method of assessment	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						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 62 I Nr. 2							

o8-TC-152-m01	<b>Quantum Chemistry</b>							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (1)						
	Method of assessment	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 creditable for bonus						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
o8-PC-SBL1-152-m01	<b>Symmetry, chemical bonding and light - Part 1</b>							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (3) + Ü (2)						
	Method of assessment	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						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
o3-TR-152-m01	<b>Toxicology and legal studies</b>							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (1) + V (1)						
	Method of assessment	written examination (approx. 90 minutes)						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
o8-PVAC-152-m01	<b>Training for Exams in Inorganic Chemistry</b>							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	S (2)						
	Method of assessment	2 to 4 short talks on selected exercises (approx. 10 minutes each) Language of assessment: German and/or English						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							



o8-PVOC-152-mo1	<b>Training for Exams in Organic Chemistry</b>							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	S (2)						
	Method of assessment	4 to 8 short talks on selected assignments (approx. 10 minutes each) Language of assessment: German and/or English						
	Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)						
o8-FD-PV-LAGMRS-152-mo1	<b>Training for Exams in Chemistry Teaching for Elementary, Secondary and Middle School Teachers</b>							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	unknown
	Courses	S (2)						
	Method of assessment	talk on 3 selected assignments (approx. 30 minutes each) Language of assessment: German and/or English						
	Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f)						
o8-FD-WA-152-mo1	<b>Instructions for Scientific Research</b>							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	unknown
	Courses	S (2)						
	Method of assessment	presentation (approx. 30 minutes) Language of assessment: German and/or English						
	Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)						
o8-FD-LLL-152-mo1	<b>Chemistry SchoolLabs</b>							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	unknown
	Courses	P (3)						
	Method of assessment	practical assignment (successful supervision of 2 sessions in learn-teach-lab, approx. 4 to 6 hours each) Language of assessment: German and/or English						
	Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)						
o8-FD-CAS-152-mo1	<b>Collecting Data with CASSY System</b>							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	unknown
	Courses	S (2)						
	Method of assessment	presentation of a project (approx. 30 minutes) Language of assessment: German and/or English						
	Referred to in LPO I	§ 22 II Nr. 2 f) § 22 II Nr. 3 f) § 22 II Nr. 1 h)						

o8-FD-MS-152-mo1	<b>Microscale Experiments in Chemistry Teaching</b>							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	unknown
	Courses	S (2)						
	Method of assessment	project: presentation of a project (approx. 30 minutes) Language of assessment: German and/or English						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
o8-FD-ASL-152-mo1	<b>Out-Of-School Education</b>							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	unknown
	Courses	S (2)						
	Method of assessment	project: presentation of a project (approx. 30 minutes) Language of assessment: German and/or English						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
<b>Paper (10 ECTS credits)</b>								
Preparation of a written Hausarbeit (thesis) in accordance with the provisions of Section 29 LPO I (examination regulations for teaching-degree programmes) is a prerequisite for teaching degree students to be admitted to the Erste Staatsprüfung (First State Examination). In accordance with the provisions of Section 29 LPO I, students studying for a teaching degree Mittelschule may write this thesis in the subject Didaktik einer Fächergruppe der Mittelschule (Didactics of a Group of Subjects of Mittelschule), in the subject they selected as Unterrichtsfach (subject studied with a focus on the scientific discipline) or in the subject Erziehungswissenschaften (Educational Science). Pursuant to Section 29 Subsection 1 Sentence 2 LPO I, students may also choose to write an interdisciplinary thesis.								
o8-Ch-HA-UF-MS-152-mo1	<b>Final Thesis according to § 29 LPO I in Chemistry for Secondary School Teachers</b>							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	No courses assigned to module						
	Method of assessment	Hausarbeit (thesis) pursuant to Section 29 LPO I (examination regulations for teaching-degree programmes) (30 to 50 pages) Language of assessment: German; exceptions pursuant to Section 29 Subsection 4 LPO I (examination regulations for teaching-degree programmes)						
Referred to in LPO I	§ 29							