

## **Study Regulations for the Master's degree programme in Chemistry**

---

**Note:** This translation is provided for information purposes only. In the event of any discrepancy between the translation and the original German version published in the Official Bulletin (*Dienstblatt der Hochschulen des Saarlandes*), the provisions of the latter shall take precedence.

---

**25 April 2024**

Pursuant to Section 60 of the Saarland Higher Education Institutions Act (SHSG) of 30 November 2016 (Official Gazette of Saarland I, p. 1080) as amended by Article 3 and 6 of the Act of 15 February 2023 (Official Gazette I, p. 270) and based on the Joint Examination Regulations for Bachelor's and Master's Degree Programmes of the Faculty of Natural Sciences and Technology and the Center for Human and Molecular Biology at Saarland University of 4 November 2021 (Official Bulletin p. 272), and with the consent of the University Senate, the Faculty of Natural Sciences and Technology at Saarland University hereby issues the following Study Regulations Governing the Master's Degree Programme in Chemistry.

### **Section 1 Scope**

These study regulations govern the content and structure of the Master's degree programme in Chemistry based on the Joint Examination Regulations for Bachelor's and Master's Degree Programmes of the Faculty of Natural Sciences and Technology and the Center for Human and Molecular Biology of 4 November 2021 (Official Bulletin 2022 No. 22 p. 272). The organization of the curriculum, teaching and examinations in this programme is the responsibility of the Faculty of Natural Sciences and Technology at Saarland University.

### **Section 2 Objectives of the degree programme and career relevance**

(1) The Master's degree programme in Chemistry places greater emphasis on research and aims to complete the student's theoretical and experimental training in the fundamentals of chemistry. It has been designed to provide students with a broad general education in chemistry. The aim is to provide students with a deeper understanding of the subject and to teach them the skills and methods needed for them to undertake independent scientific work, to critically appraise research findings and to act responsibly. It also aims to provide students with a deeper understanding in selected specialist areas.

(2) Graduates should have an overview of the synthesis and properties of chemical compounds and be able to apply methods to solve complex chemical problems. In addition to expanding and consolidating their understanding of the fundamentals of chemistry, students on the Master's programme develop their expertise in a specialist area through the Master's thesis project and advanced modules associated with the chosen area of specialization. Graduates from the programme are ideally prepared for further scientific work, such as studying for a subsequent doctoral research degree in the natural sciences.

(3) The Master's degree programme in Chemistry also aims to prepare graduates to work as

chemists in industry, research institutes and public bodies. Students therefore require not only a solid education in chemistry, but also insight into the content and methodology of neighbouring scientific disciplines.

### **Section 3**

#### **Start and duration of programme**

(1) Students can begin the programme at the beginning of the winter or summer semester of each year.

(2) The standard period of study is 4 semesters.

### **Section 4**

#### **Types of academic instruction**

The curriculum content is taught using the following types of academic instruction:

(1) Lectures ('V', standard class size = 100) introduce students to a particular subject area and enable them to acquire a deeper understanding of the subject through supplementary self-directed study. They provide an overview of the subject area and the foundations for understanding substance properties, reactions and special techniques as well as suggestions for further reading on a topic.

(2) Exercise and problem-solving classes ('Ü', standard class size = 20): Exercise and problem-solving classes are small-group sessions used primarily to supplement and reinforce what was learned in the lectures. Students work on representative problems as this provides an opportunity for them to apply and deepen the knowledge they acquired in the lectures, to assess their personal understanding of a specific area and to clarify any questions that they may have.

(3) Seminars ('S', standard class size = 20): Seminars provide an opportunity for students to broaden the knowledge and skills that they have already acquired and to gain a deeper understanding of a particular field of research by participating in discussions, giving presentations or completing seminar assignments based on their study of the specialist literature and relevant academic sources. They also help students acquire the skills necessary for the effective oral and visual presentation of scientific and academic content and encourage students to engage in critical analysis and discussion of research results. A seminar may also include project-related work in areas of current scientific interest or debate.

(4) Practical skills classes ('P', standard class size = 10): Practical skills classes offer a number of experiments that introduce students to the specific approaches and methods used in a particular discipline or field of study. An additional aspect of practical skills classes is to provide students with the opportunity to gain practical experience with computer-aided methods. Students acquire the theoretical knowledge that underlies the experiments by attending lectures and by studying the relevant scientific literature. The experiments are undertaken in a supervised environment and provide students, working either alone or in small groups, with the opportunity to gain practical experience with the typical instruments, laboratory equipment and systems used in this field of study. Students learn about the relationships between theory and practice not only through independent study and practice, but also through teamwork. Some of the skills acquired in these practical classes can help prepare students for subsequent experimental research work. Participation in a particular practical skills class may depend on a student having first successfully

completed a required course of lectures and exercise and problem-solving classes.

(6) The standard language of instruction is English. Another language of instruction may be agreed upon.

## **Section 5**

### **Structure and content of the programme**

(1) To graduate from the Master's degree programme in Chemistry, students shall earn a total of 120 credits (often referred to in Germany as 'credit points' or 'CPs') as defined by the European Credit Transfer System (ECTS). As a rule, students are required to earn 30 credits per semester.

(2) Of these 120 credits, students must earn 30 credits by completing 3 mandatory modules each worth 9 credits and an interdisciplinary mandatory module worth 3 credits. A module in the mandatory section shall be considered as completed when module elements amounting to 9 credits have been successfully completed. This requirement does not apply to the interdisciplinary module worth 3 credits.

(3) The supervised research project, which forms part of the Master's thesis module, is an additional mandatory module worth 30 credits. By completing a Master's thesis, students demonstrate that they are able to work independently on tackling problems in fields of chemistry. The thesis topic will be taken from one of these subdisciplines and will be supervised by a member of teaching staff on the Master's degree programme in Chemistry. The completion period for the Master's thesis is six months. Students are awarded 30 credits for completing their Master's thesis.

(4) 60 credits must be completed in mandatory elective modules, of which 42 credits in mandatory electives section I and 18 credits in mandatory electives section II. These modules enable students to select areas of specialization. A module in mandatory electives section 1 shall be considered as completed when module elements amounting to at least 6 credits have been successfully completed. Students taking the modules 'Natural Sciences I' and 'Natural Sciences II' must complete 6 credits. Modules in mandatory electives section I are graded, with the exception of 'Natural Sciences II'.

(5) In mandatory electives section II, students complete 3 ungraded advanced lab courses each worth 6 credits in three different areas of chemistry.

(6) Detailed information regarding the content of modules, module elements and specializations are described in the module catalogue that will be made available in suitable form. Any changes or amendments to the information in the module catalogue not covered in these study regulations shall require approval by the Examination Board responsible for the degree programme and shall be reported to the Dean of Studies and documented in appropriate form.

**Section 6**  
**Academic assessment (graded/ungraded)**

Mandatory section, 60 credits								
Module	Abbreviation	Module elements	Hours per week	Semester(s) for standard period of study	ECTS credits	Repeat cycle	Assessment	
Inorganic Chemistry M	ACM	Inorganic Chemistry Ma	2V	1-2	3	once a year	Module element examinations (b)	
		Inorganic Chemistry Mb	2V	1-2	3	once a year		
		Inorganic Chemistry Mc	2V	1-2	3	once a year		
Organic Chemistry M	OCM	Organic Chemistry Ma	2V	1-2	3	once a year	Module element examinations (b)	
		Organic Chemistry Mb	2V	1-2	3	once a year		
		Organic Chemistry Mc	2V	1-2	3	once a year		
Physical Chemistry M	PCM	3 of the following 4 elements must be taken:						Module element examinations (b)
		Physical Chemistry Ma	1V + 2P	1-2	3	once a year		
		Physical Chemistry Mb	1V + 2P	1-2	3	once a year		
		Physical Chemistry Mc	1V + 2P	1-2	3	once a year		
		Physical Chemistry Md	1V + 2P	1-2	3	once a year		
Chemical Findings and their Communication	EKC	Chemical Findings and their Communication	1V+1Ü	1-2	3	once a year	85 % written assignment 15 % exercise and problem-solving class (g)	
Thesis	ZZ	Master's thesis		4	30	once a year	Written thesis (g)	

Mandatory electives section I, 42 credits						
Module	Abbreviation	Hours per week	Semester(s) for standard period of study	ECTS credits	Repeat cycle	Assessment
Structural Characterization using Diffraction Methods	ACVI	2V+4P	1-3	Min. 6	once a year	Module exams/assessments (b)

**Mandatory electives section I, 42 credits**

Module	Abbreviation	Hours per week	Semester(s) for standard period of study	ECTS credits	Repeat cycle	Assessment
Sustainable Analytical Chemistry	ACVII	4V+6P	1-3	Min. 6	once a year	Module exams/assessments (b)
Modern Synthesis Methods	OCVI	6V	1-3	Min. 6	once a year	Module exams/assessments (b)
Organic Natural Product Chemistry I	OCVII	4V	1-3	Min. 6	once a year	Module exams/assessments (b)
Organic Natural Product Chemistry II	OCVIII	6V	1-3	Min. 6	once a year	Module exams/assessments (b)
Biological Chemistry	OCIX	4V	1-3	Min. 6	once a year	Module exams/assessments (b)
Medical Chemistry I	MEDI	4V	1-3	Min. 6	once a year	Module exams/assessments (b)
Medical Chemistry II	MEDII	1Ü+10P	1-3	Min. 6	once a year	Module exams/assessments (b)
Introduction to Polymers	MCI	2V+1Ü+1S	1-3	Min. 6	once a year	Module exams/assessments (b)
Modern Polymer Chemistry	MCII	4V+4P	1-3	Min. 6	once a year	Module exams/assessments (b)
Hybrid Materials and Coatings	MCIII	6V+6P	1-3	Min. 6	once a year	Module exams/assessments (b)
Biomaterials	MCIV	3V+1P	1-3	Min. 6	once a year	Module exams/assessments (b)
NanoBioMaterials	MCV	4V	1-3	Min. 6	once a year	Module exams/assessments (b)
Theoretical Chemistry	TCI	5V +5Ü+4P	1-3	Min. 6	once a year	Module exams/assessments (b)
Theoretical Inorganic Chemistry	TCII	6V	1-3	Min. 6	once a year	Module exams/assessments (b)
Electronic Spectroscopy	PCVI	10V	1-3	Min. 6	once a year	Module exams/assessments (b)
Natural Sciences I	NaWil	4V	1-3	6	once a year	Module exams/assessments (b)
Natural Sciences II	NaWill	4V	1-3	6	once a year	Module exams/assessments (ub)

**Mandatory electives section II, 18 credits**

Module	Abbreviation	Hours per week	Semester(s) for standard period of study	ECTS credits	Repeat cycle	Assessment
Advanced lab course I	VPI	8P	1-3	6	once a year	Log (ub)
Advanced lab course II	VPII	8P	1-3	6	once a year	Log (ub)

Advanced Practical Skills Class III	VPIII	8P	1-3	6	once a year	Experimental log (ub)
--	-------	----	-----	---	-------------	-----------------------

V: Lecture; Ü: Exercise and problem-solving class; P: Practical skills class; S: Seminar  
 RSS: Semester(s) for standard period of study; b: graded; ub: ungraded

### **Section 7 Studying abroad**

All students on the Master's degree programme in Chemistry are encouraged to spend part of the programme studying abroad. Students interested in studying abroad should seek advice from the programme coordinator and clarify credit transfer arrangements by completing a study abroad learning agreement before they travel. Course and examination credits earned during a study abroad period will be recognized provided that equivalence has been verified. Credits earned at the host institution abroad will be recognized provided that, when compared with the corresponding study programme at Saarland University, there is no significant difference in the time required for completion or in the student assessments used, nor in the content, scope and academic requirements of the modules taken. Information on study abroad opportunities, exchange programmes, scholarships and administrative formalities is available from Saarland University's International Office or from the chemistry teaching staff. As foreign host universities and scholarship-awarding bodies often have early application deadlines and long application processing times, study abroad applications should normally be submitted one year before the planned start date.

### **Section 8 Study plan**

The Dean of Studies shall compile a programme-specific study plan (module catalogue) based on the study regulations. The study plan shall be appended to the study regulations as a recommendation for students on how to structure their studies effectively. The study plan will be made available in suitable form.

### **Section 9 Study counselling**

(1) The Central Student Advisory Service (*Zentrale Studienberatung*) at Saarland University provides counselling and guidance to prospective students concerning the content, structure and requirements of academic study at Saarland University.

(2) The Department of Chemistry shall designate members of professorial staff or non-professorial academic staff to provide programme-related advice during the specified office hours. Questions relating to individual modules can be addressed to the respective module coordinators.

### **Section 10 Commencement**

These regulations shall come into force on the day after they are announced in the Official Bulletin of the Institutions of Higher Education in Saarland (*Dienstblatt der Hochschulen des Saarlandes*).

Saarbrücken, XX Month 2024

President of Saarland University  
(Univ.-Prof. Dr. Ludger Santen)