



Master of Science in Chemistry (MSc in Chemistry)

This is a translation from the original German version of the „Infoblatt zum Masterstudiengang Chemie (MSc in Chemistry)“. It is provided for information purposes only and has no legal force.

General

The Master's program in Chemistry is aiming for the second undergraduate degree *Master of Science in Chemistry*. Based on the knowledge imparted in the Bachelor's program, you will gain a solid foundation for postgraduate study or a career in science. The three-semester (full-time study) Master's program comprises compulsory lectures in the core subjects inorganic, organic and physical chemistry, plus a comprehensive range of electives. During the two internships and the Master's thesis project, the students work in a research group, and will develop the ability to design experiments and interpret results. This is their first opportunity to perform independent research at the forefront of science. The setup of the program also allows a first specialisation in a specific field.

Program Structure

During the Master course 90 credit points have to be earned. The first two semesters comprise lectures (total of 30 credit points, see below) and two elective internships (15 credit points each). The Master thesis (26 credit points) and the oral Master examination (4 credit points) are usually completed in the third semester. One credit point corresponds to a workload of approximately 30 working hours according to the European credit transfer system (ECTS).

The program is structured in courses of modules a-g:

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|------------------------|--|
| a) Inorganic Chemistry | e) Elective internships |
| b) Organic Chemistry | f) Master project and thesis (max. 24 weeks) |
| c) Physical Chemistry | g) oral Master examination |
| d) Mixed Topics | |

The **lectures** offered are structured in compulsory lectures in the core subjects Inorganic Chemistry, Organic Chemistry und Physical Chemistry (12 credit points, modules a-c) and electives (18 credit points, modules a-d). Compulsory lectures must be chosen from at least two different modules a, b or c (table 1, each lecture is worth 3 credit points). Elective lectures can be chosen from modules a-d (tables 1 and 2, each lecture is worth 3 credit points).

Elective internships (module e) take six weeks fulltime or 12 weeks part-time and must be completed in two different research groups. It is possible to conduct an elective internship at non-University institutions. However, those internships take generally three months.

Table 1: Selection of compulsory lectures in the Master's program (MSc in Chemistry)

(The complete list of lectures can be found in the course directory: <http://vorlesungsverzeichnis.unibas.ch>)

Compulsory Lectures (usually 3 credit points each)		
a) Inorganic Chemistry	b) Organic Chemistry	c) Physical Chemistry
Metals in Biology	Chemical Biology	Soft Matter and Polymers
Photophysics and Photochemistry	Supramolecular Chemistry	Dynamics of Molecules and Chemical Reactions
Colloidal Nanocrystals and Quantum Dots	Synthesis and Physical Properties of Nanoscale Systems	Molecular Simulations with Chemical and Biological Applications
Surface Chemistry and Heterogenous Catalysis	Stereoselective Organic Synthesis	Biomolecular Nanotechnology
	Introduction to NMR Spectroscopy of Proteins and other Biomolecules	Chemical Reaction Dynamics: Physical Principles of Chemical Reactivity
	Total Synthesis of Natural Products	

Table 2: Selection of elective lectures in the Master's program (MSc in Chemistry)

(The complete list of lectures can be found in the course directory: <http://vorlesungsverzeichnis.unibas.ch>)

d) Elective Lectures / Mixed Topics (usually 3 credit points each)		
Bioanalytical Sciences	Organic Reactions in Industry – Theory & Case Studies	X-ray Crystallography
Testing Drugs - a Glimpse Into Analytical Chemistry	Biocatalysis in organic synthesis	Electrochemistry – Basics and Practice (lecture and practical course)
Analytical Chemistry of the Atmosphere: Quantifying Climate Change	Discovery and Optimization of Bioactive Compounds	
Forensic Chemistry and Toxicology	Basics in Recombinant Protein Production (practical course)	

General Information

Start of Program: The program can be started in the spring or in the fall semester.

Admission: An admission is possible with a Bachelor degree (BSc) in Chemistry from the University of Basel or with a degree from a University certified by the University of Basel.
After application at the Student Administration Office, the dossier is subject-specific surveyed by the responsible examination commission. If the Bachelor degree is only partially recognized as equivalent by the faculty, the admission to the Master's program can be started with the additional requirement to earn credit points of the Bachelor's program. The decision is finally communicated in writing by the Student Administration Office.

Language of Instruction: Language of instruction in the MSc curriculum is English.

Application: Application is possible online on the website <http://www.unibas.ch/anmeldung>; application fee is CHF 100.-. Application deadline for the fall semester is April 30th, for the spring semester November 30th.

Registration/ Transfer to the Master's Program:

Students matriculated at the University of Basel, who want to continue with a MSc in Chemistry after completion of the BSc degree in Chemistry and without interruption of studies, do not need to apply but can directly transfer to the Master's program by registering for the next semester (www.unibas.ch/rueckmeldung). In parallel, the „Absichtserklärung zum Bachelorabschluss“ (in German only, <https://philnat.unibas.ch/dokumente/bachelorstudium>) has to be submitted to the Office of the Dean of Studies of the Faculty of Science.

Regulations:

- Ordnung der Phil.-Nat. Fakultät der Universität Basel für das Masterstudium (of 15.9.2020, in German only)
- Studienplan für den Masterstudengang Chemie (Chemistry) (of 15.9.2020, in German only)
- Wegleitung für das Bachelor- und Masterstudium in Chemie an der Phil.-Nat. Fakultät der Universität Basel (of 15.9.2020, in German only)

Website Department of Chemistry: www.chemie.unibas.ch

Contact

Academic Advice:

Prof. Dr. Jonathan de Roo
BPR 1096, Mattenstrasse 24a
CH-4002 Basel
Email: jonathan.deroo@unibas.ch

Administration:

Dr. Ina Emme-Papastavrou
St. Johannis-Ring 19
CH-4056 Basel
T +41 61 207 18 54
Email: studium-chemie@unibas.ch