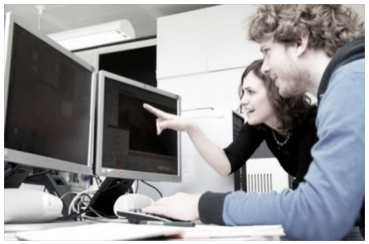
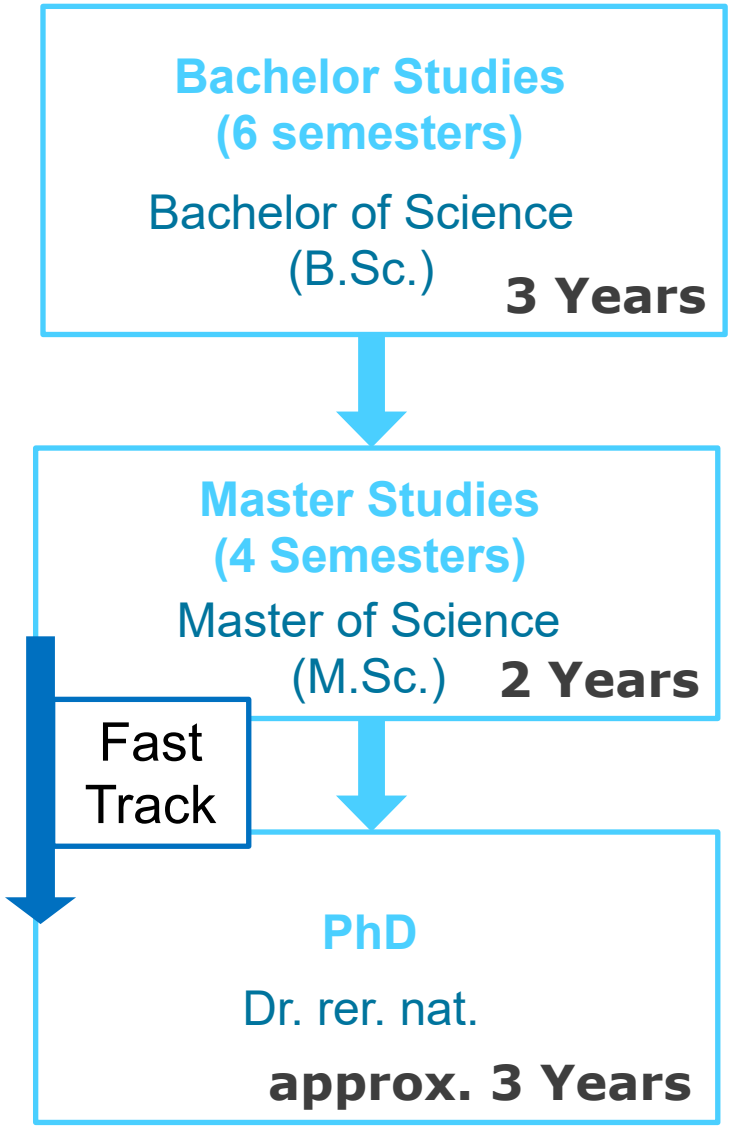
Universität Konstanz

Welcome to the Master Studies in ...

... Chemistry & Nanoscience & Master of Education Chemistry



Now the fun part begins …



Topics

Master Chemistry

- Choosing your courses (Schwerpunktkurse)
- Master exam
- Master thesis

Master Nanoscience

- Choosing your courses
- Professional internship (Berufspraktische Tätigkeit)
- Master exam

Master of Education - Chemistry

Advanced Courses (Department of Chemistry)

Advanced courses chemistry (Schwerpunktkurse):

- 6 ECTS lecture plus optional 6 ECTS lab
- description in module book (here)

Additional courses offered by the department of chemistry

- on the website (here)

Grade: exam (oral or written) + internship report for the laboratory part

Information session on the Advanced Courses of the **Chemistry Department**:

16.10.2024, 14:00 – 17:00, R611

- Please register for the courses on ZEUS
- in case of doubt: register for more courses than you plan to take
- lecturers will provide lectures and additional information on ILIAS
- !!! Registration for internship with lecturer !!!

Master Chemistry: Choosing Courses

Semester	Module combination[1]	ECTS cred-its
1-2	Modules from the focus area of study	18
1-2	Module from the 2. major	12
1-2	Modules from the 3. major	12
1-2	Modules from the area of electives or the area of the majors inorganic, organic or physical chemistry, with a maximum of 6 ECTS credits from your focus area of study and 12 ECTS credits from the area of the 2. and 3. major. You may acquire a maximum of 12 ECTS credits from modules outside of chemistry.	18
3	Oral master`s examination	15
3-4	Master`s thesis with colloquium	30 15
	Total	**120**

[1] In the module guide you can find the elective modules and the areas to which they belong (inorganic, organic and physical chemistry, electives). The Examination Board decides which other modules and electives are permitted.

Master Chemistry: Courses during the Winter Term 2024/25

Chemistry of construction materials 6 Cr bzw. 12 Cr Mi 13:30 - 15:00, L 601 Fr 13:30 - 15:00, L 601	C. Ruiz Agudo
Biophysical Chemistry 6 Cr bzw. 12 Cr ab Mo 21.10.2024 Mo 13:30 - 15:00, L 829 Do 13:30 - 15:00, L 829	K. Hauser
Gene Expression and Replication 6 Cr bzw. 12 Cr ab 07.01.2025 Di 10:00 - 11:30, L 602 Mi 15:15 - 16:45, L 602 Do 10:00 - 11:30, L 602 Fr 10:00 - 11:30, L 602 Seminar n. V.	K. Betz / D. Funck
Industrial Chemistry and Renewable Resources 6 Cr bzw. 12 Cr ab 07.01.2025 Mo 10:00 - 11:30, L 602 Di 11:45 - 13:15, L 602 Mi 11:45 - 13:15, L 602	S. Mecking / I. Göttker
Dispersion Colloids in Research and Industry 6 Cr bzw. 12 Cr Di 08:15 - 09:45, L 829 Do 08:15 - 09:45, L 829	A. Wittemann

Master Chemistry: Courses during the Winter Term 2024/25 (cont'd)

Advanced Physical Chemistry 6 Cr bzw. 12 Cr Mi 08:15 - 09:45, M 628 Fr 11:45 - 13:15, L 829	A. Zumbusch
Advanced Organic Chemistry 6 Cr bzw. 12 Cr Vorlesung 05.11.2024 - 13.12.2024 Di 10:00 - 11:30, L 602 Mi 15:15 - 16:45, L 602 Do 10:00 - 11:30, L 602 Fr 10:00 - 11:30, L 602	T. Gaich / V. Wittmann
Advanced Element-Organic Chemistry 3 Cr. bzw. 9 Cr Do 15:15 - 16:45, L 601	R. Winter
Breakthroughs in natural sciences exemplified by granted Nobel prizes 3 Cr ab 21.10.2024 Mo 15:15 - 16:45, L 829	M. Kovermann
Biocatalysis – From Chemical Logic to Modern Enzymology 6 Cr ab 21.10.2024 Mo 11:45 - 13:15, L 602 Do 11:45 - 13:15, M 630	L. Barra / D. Funck
Organometallic chemistry in the synthesis of complex molecules 3 Cr bzw. 9 Cr ab 21.10.2024 Mo 15:15 - 16:45 Uhr, M 630	T. Gaich

Master exams (Chemistry)

- two exams
- exam in your focus area:

  60 min duration with two examiners
- exam in your 2nd and 3rd major:

  duration 2 x 30 min with two examiners
- topics: master courses and Bachelor degree knowledge
- examiners: free choice

The Master thesis

- duration 6-9 months (upon application)
- independent research project in one of the research groups

- first examiner: supervisor
- second examiner: proposal of the student, needs to be approved by the dean of studies
- final oral presentation

Master thesis: Fast track option

- skip master thesis and start immediately with your PhD studies
- Master degree after 6-months report
- register after your master exams
- prerequisites? BA-Grade 1,8 or better or best 15%
  MA-Grade 1,3 or better

For information regarding study regulations etc.:

Studies Master Chemistry

Chemistry −

Application

Master

– Combination of Modules and ECTS credits in the master´s programme

Master Courses

ZEuS, ILIAS, Module guides, KIM (Communication, Information Media-Centre)

Career

FAQ

Life Science +

Nanoscience +

Information for first-year students

Exam Dates

List of Courses

The Master's Programme Chemistry

You can acquire a total of **120 ECTS credits** in the master's programme. Standard period of study is **four semesters**. The master's programme focus is on advanced, already research-related courses in the subjects of inorganic, organic and physical chemistry, as well as in the subjects surrounding the department's main research areas of life sciences and material sciences. These are offered as compulsory elective subjects (see the module overview at the end of this page). One of the notable features in the master's programme are the **focus area courses** in which practical experience projects are carried out with strong references to research and intensive supervision. These courses offer a substantial foundation for a highly qualified master's thesis, as well as for doctoral studies which usually follow the master's degree.

Contact

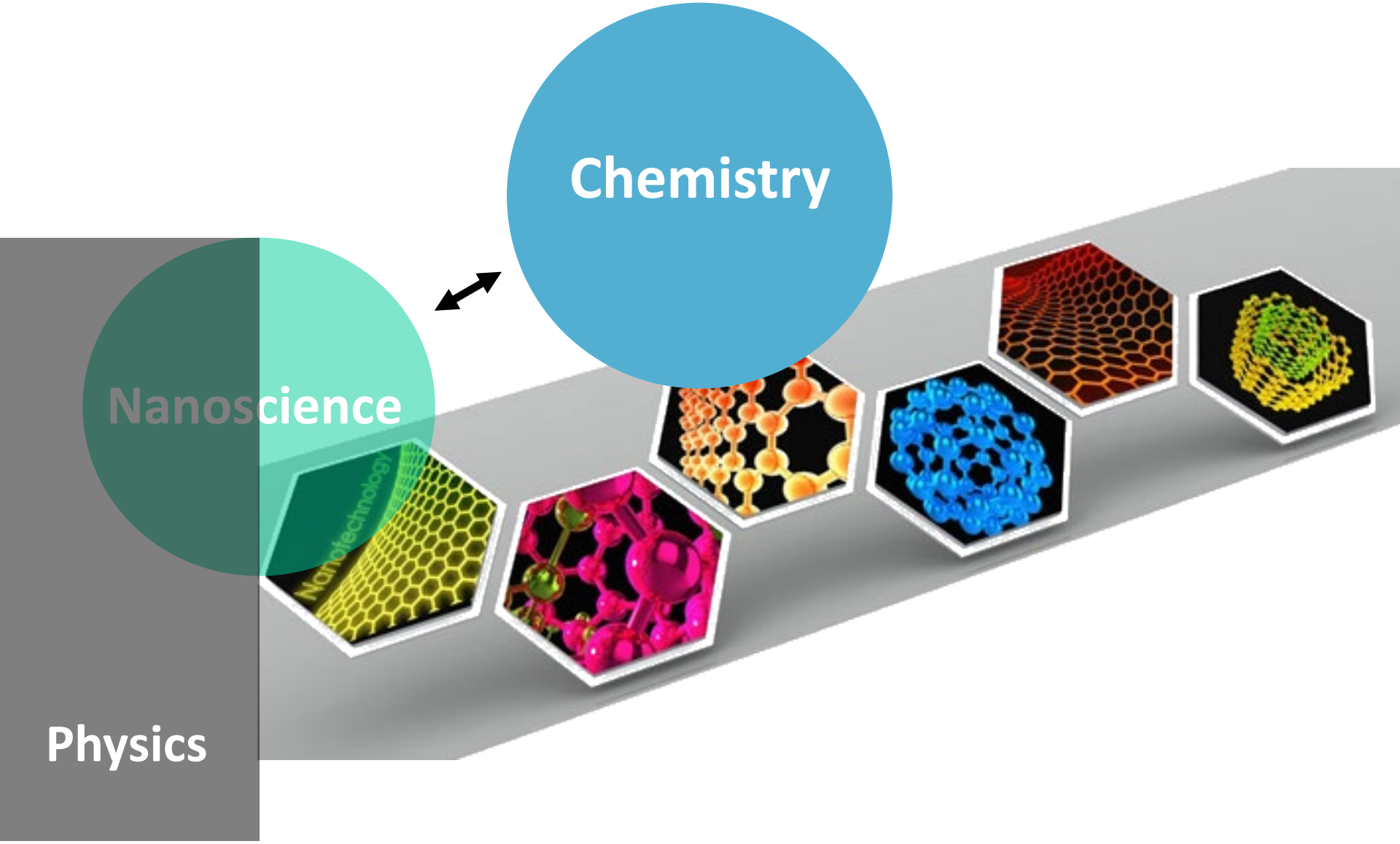
Mrs Lara Williams
Student Advisory Service
Room L 804
Phone: +49 / (0)7531 / 88-2816

Send email

Studies Master Chemistry

- Timetable winter term 2024/25 (PDF, 86 KB)
- Timetable summer term 2024 (PDF, 81 KB)
- Welcome Master Chemistry / Nanoscience summer term 2024 (PDF, 2 MB)
- Module guide (PDF, 604 KB)
- Application for admission to the oral master's examination (PDF, 192 KB)
- Application for permission to submit a master's thesis (PDF, 452 KB)
- Admission regulations (PDF, 52 KB)
- Study and examination regulations (PDF, 292 KB)

Nanoscience



Master Nanoscience: Study Plan and How to Choose Courses

Pos.	Semester		ECTS
		Modules / Course Work	
1.	1, 2	Subject Area (A): Chemical Aspects of Functional Materials	**30**
2.	1, 2	Subject Area (B): Physical Aspects of Functional Materials	**18**
3.	1, 2	Subject Area (C): Additional courses chosen form the portfolio of Master courses offered by the faculties of Chemistry and Physics not taken in positions 1. and 2.	**12**
4.	3	**Professional Internship (Berufspraktische Tätigkeiten)**	**10**
5.	3	**Oral Master Exams**	**10**
6.	3,4	**Master Thesis** **Master Colloquium**	**30** **10**
	Sum:		**120**

Master Nanoscience: Choosing Courses

Subject Area A: Chemical Aspects of Functional Materials

Summer Term:

- Synthesis and Properties of Functional Materials (S. Mecking / I. Göttker)

On request:

- Molecular Spectroscopy (A. Zumbusch)
- Computational Chemistry (Ch. Peter)
- Bipolymer Chemistry (V. Wittmann, A. Marx)

Winter Term:

- Dispersion Colloids in Research and Industry (A. Wittemann)
- Advanced Physical Chemistry (A. Zumbusch)
- Nano Chemistry and Analytics (C. Ruiz-Agudo)

On request:

- Industrial Chemistry and Renewable Resources (S. Mecking / I. Göttker)
- Advanced Metal-Organic Chemistry (R. Winter)
- Breakthroughs in Natural Sciences Exemplified by Nobel Prizes (M. Kovermann)
- Advanced Organic Chemistry (T. Gaich / V. Wittmann)
- Biocatalysis – From Chemical Logic to Modern Enzymology (L. Barra / J. Hartig)

Further courses from Physical Chemistry and Inorganic Chemistry can be counted as courses in subject area A (upon request) and are eligible for subject area C

Master Nanoscience: Choosing Courses (cont'd)

Subject area B: Physical aspects of functional materials ↑

The course programme offered from the department of Physics is changing.

Information to the Physic courses.

Winter term 2024/25:

- Statistical mechanics (10 ECTS) (Prof. Dr. U. Nowak)
- Semiconductor technology and physics of solar cells (8 oder 10 ECTS) (Prof. Dr. G. Hahn)
- Solid state physics (9 ECTS) (Prof. Dr. L. Schmidt-Mende)
- Superconductivity (10 ECTS) (Prof. Dr. E. Scheer)
- Advanced Nanostructures (10 ECTS) (Prof. Dr. M. Fonin)

Summer term 2024:

- Soft Matter Physics (10 ECTS)
- Nanophotonics, Biophysics and Ultrafast Dynamics with Electron Microscopy (10 ECTS)
- Advanced Solid State Spectroscopy (10 ECTS)
- Magnetism of single atoms and moecules (4 ECTS)

Master Nanoscience: Choosing Courses

Pos.	Semester		ECTS
		Modules / Course Work	
1.	1, 2	Subject Area (A): Chemical Aspects of Functional Materials	**30**
2.	1, 2	Subject Area (B): Physical Aspects of Functional Materials	**18**
3.	1, 2	Subject Area (C): Additional courses chosen form the portfolio of Master courses offered by the faculties of Chemistry and Physics not taken in positions 1 and 2	**12**

Chemistry focus

exam 1: (A)
exam 2: (B) + (chemistry topic)

Physics focus

exam 1: (A)
exam 2: (B) + (physics topic)

+ Master thesis in chemistry or physics

Professional internship (Berufspraktische Tätigkeit)

- duration: 2 months
- internship in a (private) company
- or: Internship in a public institution

(e.g. a research institute, another university; also during an international exchange stay)

- or: internship in a research group at the university of Konstanz

  (clear distinction from master thesis or course internship is compulsory)

Master of Education Chemie

Studienelemente und ECTS-Punkte

Erstes Hauptfach -Fachwissenschaftliche Pflicht- und Wahlmodule 12 ECTS

Erstes Hauptfach - Fachdidaktikmodul 10 ECTS

Zweites Hauptfach - Fachwissenschaftliche Pflicht- und Wahlmodule 12 ECTS

Zweites Hauptfach - Fachdidaktikmodul 10 ECTS

Fachwissenschaftliche Flexibilisierungsmodule 18 ECTS

Abschlussarbeit (Masterarbeit) in einem Hauptfach oder Bildungswissenschaften 15 ECTS

Bildungswissenschaften 27 ECTS

Schulpraxissemester 16 ECTS

Master of Education Chemie
Wahlmodule

Wahlmodule

Lehrveranstaltung		SWS	ECTS-Credits	Prüfungs-leistung
W1	Erweiterungspraktikum Organische Chemie	5 P	3	L
W2.1	Biochemie	4 V	5	K
W2.2	Praktikum Biochemie	9 P	7	L
W3	Heterocyclen und Naturstoffe	2 V	3	K
W4	Reaktionsmechanismen	2 V	3	K
W5	Integriertes Synthesepraktikum	8 P	6	L
W6.1	Synthese und Materialeigenschaften von Polymeren	4 V	5	K
W6.2	Praktikum Synthese und Materialeigenschaften von Polymeren	9 P	7	L
W7	Koordinationschemie und Metallorganische Chemie	3 V, 1 Ü	5	K
W8	Praktikum Anorganische Chemie II	9 P	7	L
W9.1	Fortgeschrittene Festkörperchemie	2 V, 2 Ü	5	K
W9.2	Praktikum Festkörperchemie	9 P	7	L
W10	Physikalische Chemie III	3 V, 3 U	7	K
W11	Physikalische Chemie IV	4 V, 2 Ü	7	K
W 12	Fortgeschrittenenpraktikum Physikalische Chemie	7 P	5	L
W13.1	Kolloidchemie	3 V, 1 Ü	5	K
W13.2	Praktikum Kolloidchemie	9 P	7	L

Verwendete Abkürzungen: V Vorlesung, Ü Übung, S Seminar, P Praktikum, K Klausur, L Leistungsnachweis, SWS Semesterwochenstunden

Thank you for your attention!

Further questions?

- Have a look at the FAQ

Get in touch with chem-nano@uni-konstanz.de