Universität zu Köln

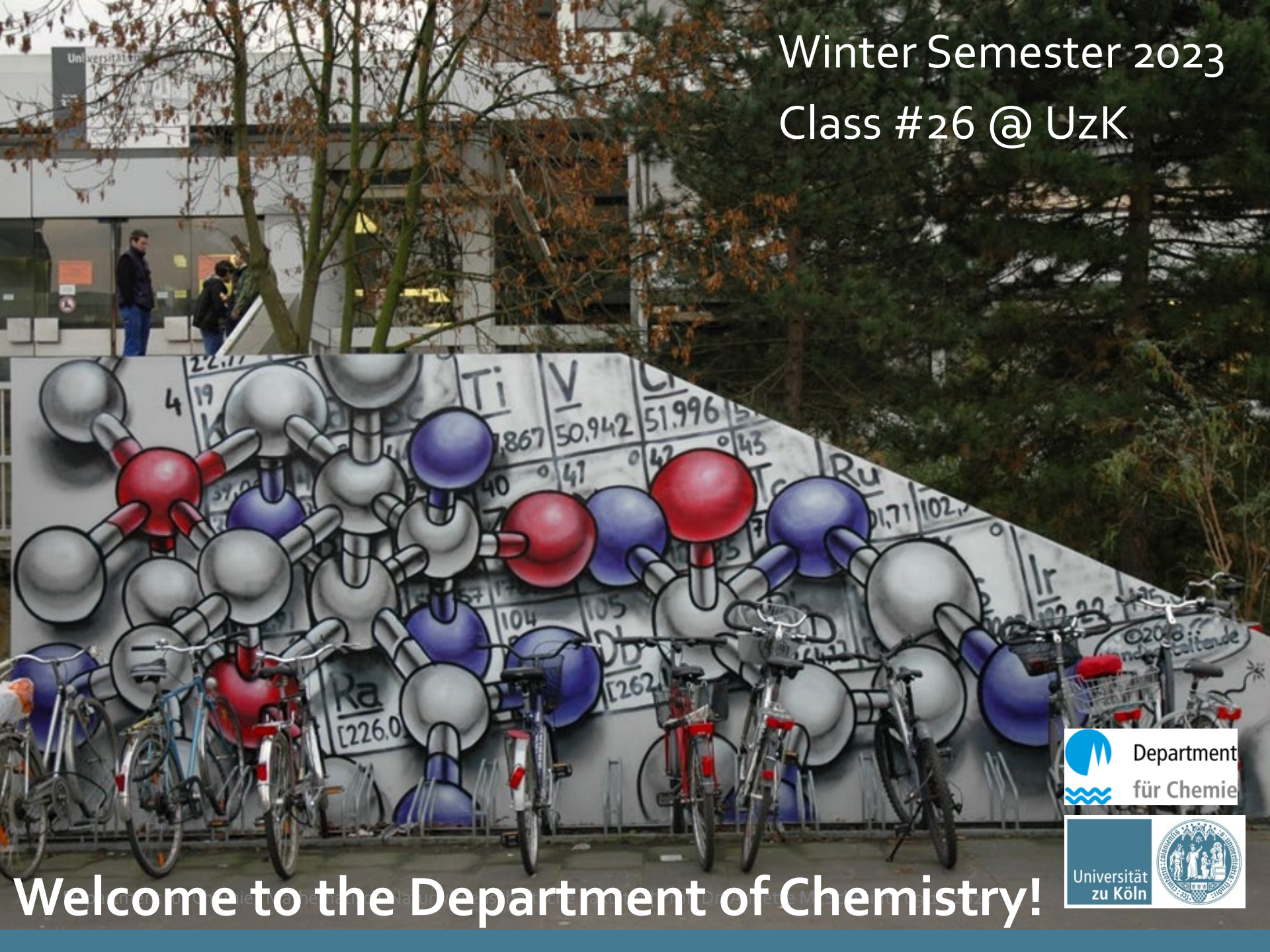
Department für Chemie

Universität zu Köln

MSc Chemistry: Welcome!

Winter Semester 2023

Department für Chemie | Mathematisch-Naturwissenschaftliche Fakultät | Prof. Dr. Annette M. Schmidt | 09.10.2023


Winter Semester 2023
Class #26 @ UzK
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Department
für Chemie
Universität
zu Köln
Welcome to the Department of Chemistry!

Who is responsible?

Prof. Dr. Annette
Schmidt
(Physical Chemistry)
Chairperson M.Sc.
Examination Board
annette.schmidt@uni-koeln.de

Prof. Dr. Axel
Griesbeck
(Organic Chemistry)
Vice-Chairperson M.Sc.
Examination Board
griesbeck@uni-koeln.de

Dr. Heike
Henneken
(Administration)
Student Advisory Service,
International Affairs
hhenneke@uni-koeln.de

Marion Danitz
Examination Office
Raum: HS 118
Tel. +49-221-470-2239
Email: marion.danitz(at)uni-koeln.de

Office hours:
Wed 13:30-16:00 h
Thu 10:00-13:00 h

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MSc Chemistry @University of Cologne

-> research-focused training and specialization in chemistry

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Internationalization: Studying without being on site

- **Lectures** via ILIAS (our study platform) and live (via Zoom):
  - Technical check: laptop (or equivalent) with camera and microphone/speaker
  - internet connection – stable connection with 1 Mbit/s or more is needed

➔ If this infrastructure is not available to you, please do not register for the modules.

  - Regular active participation (camera on, ask questions, communicate in chat and e-mails, read recommended material)

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Program Language = English only!

But:

It is a good advise to fetch up with some German!

(helps e. g. with ordering beer, talking to administrative people, …)

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Train your English!

Active:

- writing (reports, written exams, …)
- speaking (presentations, oral exams, …

Passive:

- reading (journals, …
- listening (lectures, …)

Your professors are not native speakers neither!

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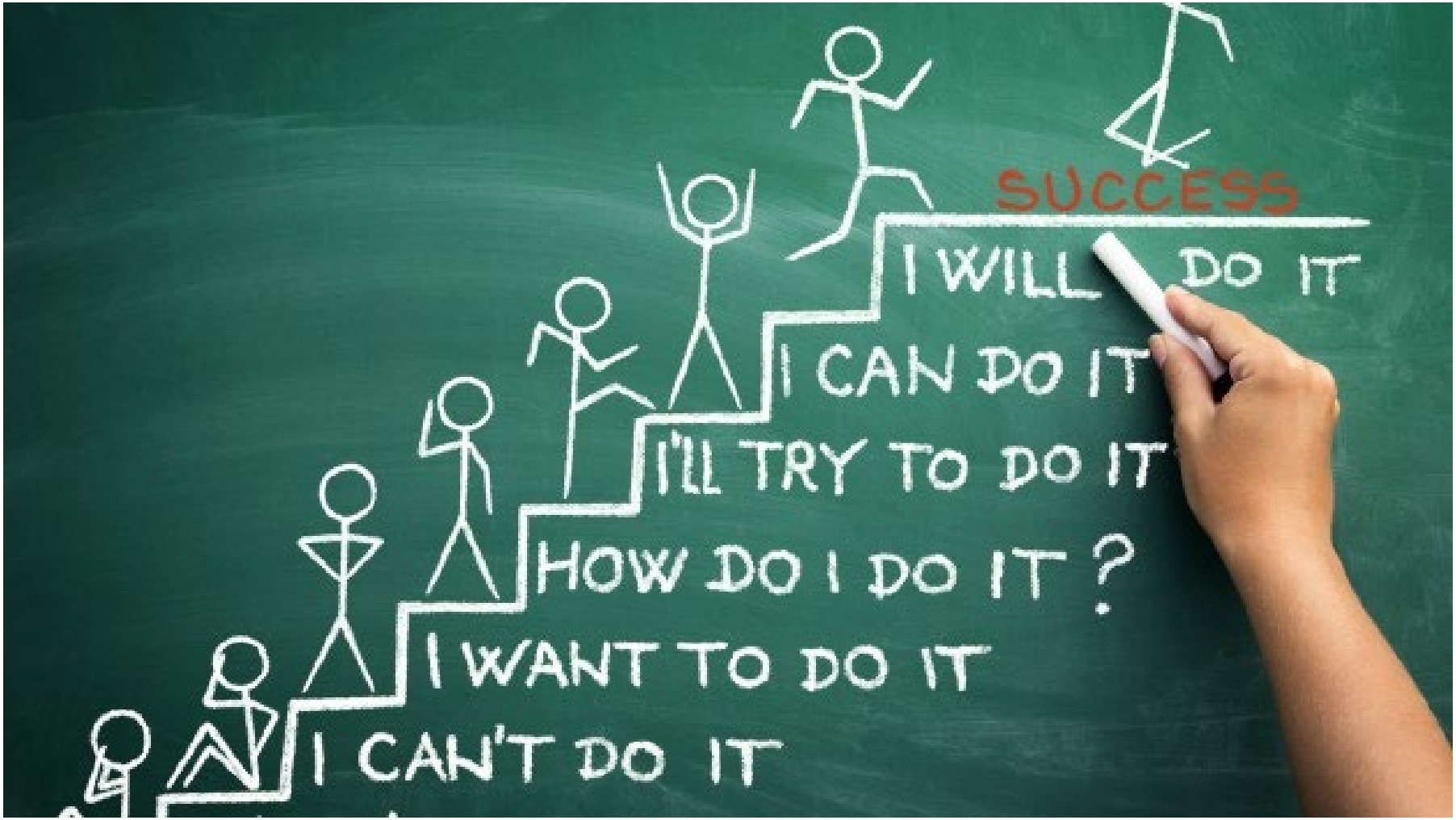
Your Expectations: The Master Program



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MSc Chemistry

Fundamental courses

- 3 **A modules**: **A**dvanced chemistry chapters (Lecture + seminar) -> **A-IC - A-OC - A-PC - A-TC - A-BC**
- 3 **E modules**: **E**xperimantal lab course

  -> **A-IC - A-OC - A-PC - A-TC - A-BC**

Specialization

- 2 **P modules**: **P**roject oriented lab course, specialization lecture & seminar
- **P-RP module**: **P** module + **R**esearch **P**roposal
- **S module**: **S**upplementary module)
- **M module**: **M**aster thesis

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List of Modules

			credits	%total grade
1	**MN-C-A1**	**A**DVANCED MODULE 1	**6**	**6/120**
2	**MN-C-A2**	**A**DVANCED MODULE 2	**6**	**6/120**
3	**MN-C-A3**	**A**DVANCED MODULE 3	**6**	**6/120**
4	**MN-C-E1**	**E**XPERIMENTAL MODULE 1	**9**	**9/120**
5	**MN-C-E2**	**E**XPERIMENTAL MODULE 2	**9**	**9/120**
6	**MN-C-E3**	**E**XPERIMENTAL MODULE 3	**9**	**9/120**
7	**MN-C-P1**	**P** MODULE1	**12**	**14/120**
8	**MN-C-P2**	**P** MODULE 2	**12**	**14/120**
9	**MN-C-P-RP**	**P** MODULE & RP	**15**	**17/120**
10	**MN-C-S**	**S** MODULE	**6**	**-**
11	**MN-C-Ma**	**MA**STER MODULE	**30**	**30/120**

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Recommended study plan – 1st Semester

Semester	Module	Lecture + Seminar (hours per week)	Lab course (weeks)	Credits
1	M-A1	4		6
	M-E1		8	9
	M-A2	4		6
	M-A3 or	4		6
	M-E2		8	9
				27 or 30

- A- BC (Biochemistry) cannot be taken in the first semester!

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Recommended study plan – 2nd Semester

Semester	Module	Lecture + Seminar (hours per week)	Lab course (weeks)	Credits
2	**M-E2 or M-A3**	4	8	9 Or 6
	M-E3		8	9
	M-P1	2-4	9-10	12
	M-P2 starting…	2-4	9-10	12
				37-42

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Recommended study plan – 3rd/4th Semester

Semester	Module	Type of Module	Lecture + Seminar (hours per week)	Lab course (weeks)	Credits
3	**M-P-RP**	Project module II	2-4	9-10	15
	M-P-S	Supplementary Module	maybe	maybe	6
					21-33
4	**M-Ma**	Master-Thesis (6 months)		26	30
					30

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The Mentor Program

- Each MSc student is assigned to mentor (professor of the Chemistry department)
  - can be contacted for individual study-related counseling
  - approvals S module concept

7369401	Mathur
7423779	Lindfors
7355327	Niefind
7354993	Schmidt
7331444	Kath-Schorr
7349796	Schmidt
7378021	Klein
7420723	Schubert
7420729	Schäfer
7366826	Wickleder
7323543	Strub
7364493	Ruschewitz
7423515	Giernoth

Dementoren:

Mentoren:

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Specialization: optional - but no obligation

One **Master of Chemistry**

Four Areas of Specialization

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Nanochemistry & Functional Materials

This specialization offers conceptual and experimental advancement in the chemistry of nanomaterials.

Starting from fundamental concepts of nanochemistry you will acquire skills in the preparation, investigation and characterization of nano-structured materials using a broad toolset of synthetic and analytical methods. You will experience the importance of materials in many applications and will learn to assess their potential in energy harvesting and storage, catalysis, (gas)sensing, biomedical applications and many more.

Program Advisors:
Prof. Sanjay Mathur
Prof. Uwe Ruschewitz

Advanced and Experimental Modules:
Inorganic and Physical Chemistry
3 Project modules and Master thesis in this area.

Catalysis & Synthesis

This program gives you access to modern concepts in synthesis and catalysis.

The program will provide you with training in the chemical synthesis of organic molecules with an emphasis on metal-, organo- and photo-catalysis. You will learn about key concepts and how to apply modern synthetic (and analytical) methods for the synthesis of relevant compounds, such as bioactive agents, in an efficient, stereoselective and sustainable manner.

Program Advisors:
Prof. Ralf Giernoth
Prof. Albrecht Berkessel

Advanced and Experimental Modules:
Inorganic and Organic Chemistry
3 Project modules and Master thesis in this area.

Photonics & Photochemistry

This program gives you an insight to the exciting world of photonics and photochemistry.

You will be trained in the basics of photochemistry and photophysics of p-conjugated (supra-)molecular and plasmonic systems. You will acquire skills in designing structure-property relations and in using light to control chemical reactions. In addition, you will be involved in the preparation of photonic devices such as light-emitting diodes, solar cells, optical sensors and switches. Finally, you will learn how to use (laser-based) spectroscopic techniques for the in-depth characterization of the above systems.

Program Advisors:
Prof. Klaus Meerholz
Prof. Axel Griesbeck

Advanced and Experimental Modules:
Organic and Physical Chemistry
3 Project modules and Master thesis in this area.

Bioorganic & Bio-logical Chemistry

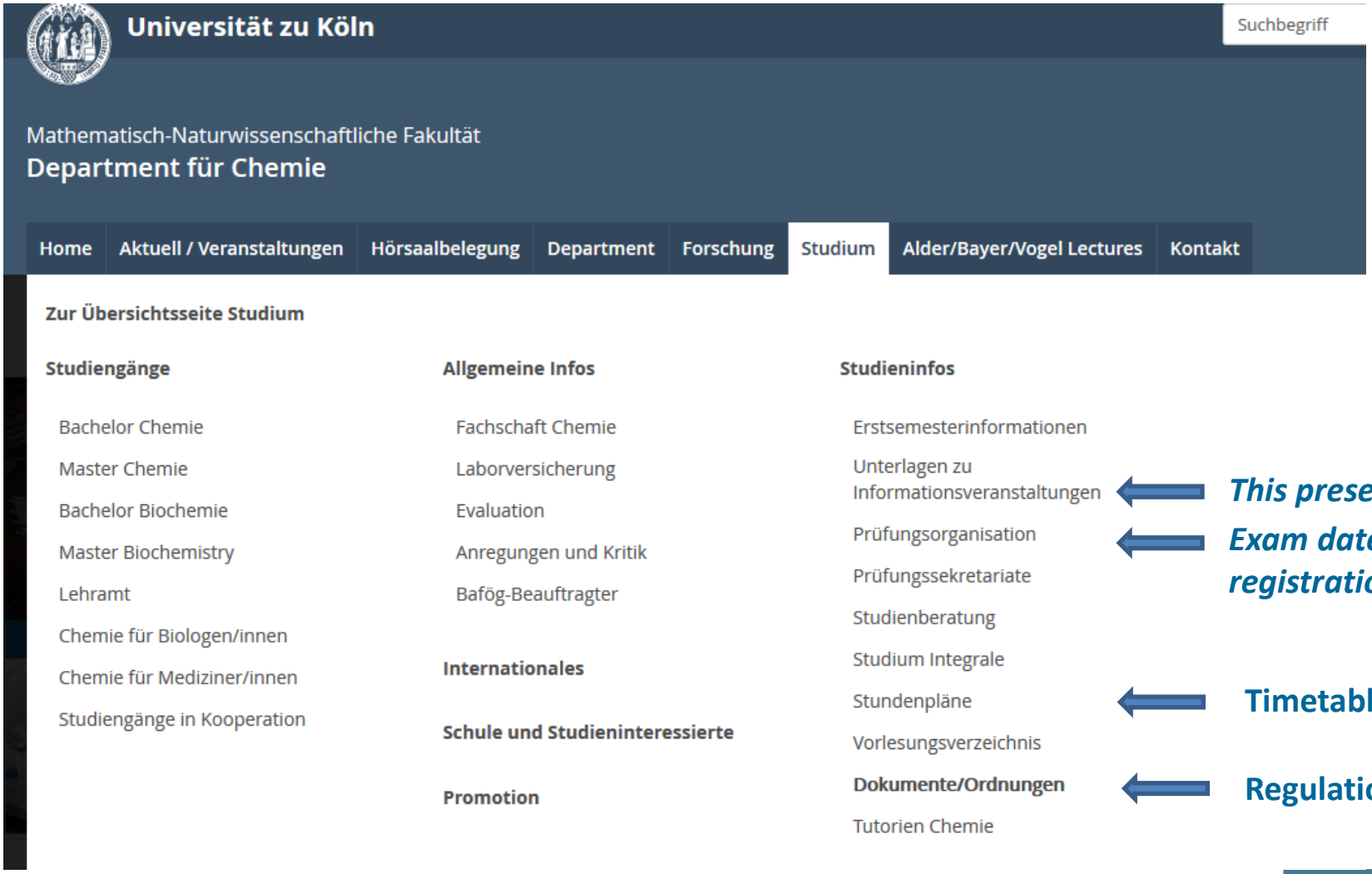
This program gives you access to the exciting world of bioorganics .

Three modules are offered with a focus on biochemistry and bioorganic chemistry that provides students with a background in biochemistry, new insights into cellular enzymology with clinical aspects, structural bio-chemistry using X-ray crystallography, peptide synthesis and neuro-biochemistry.

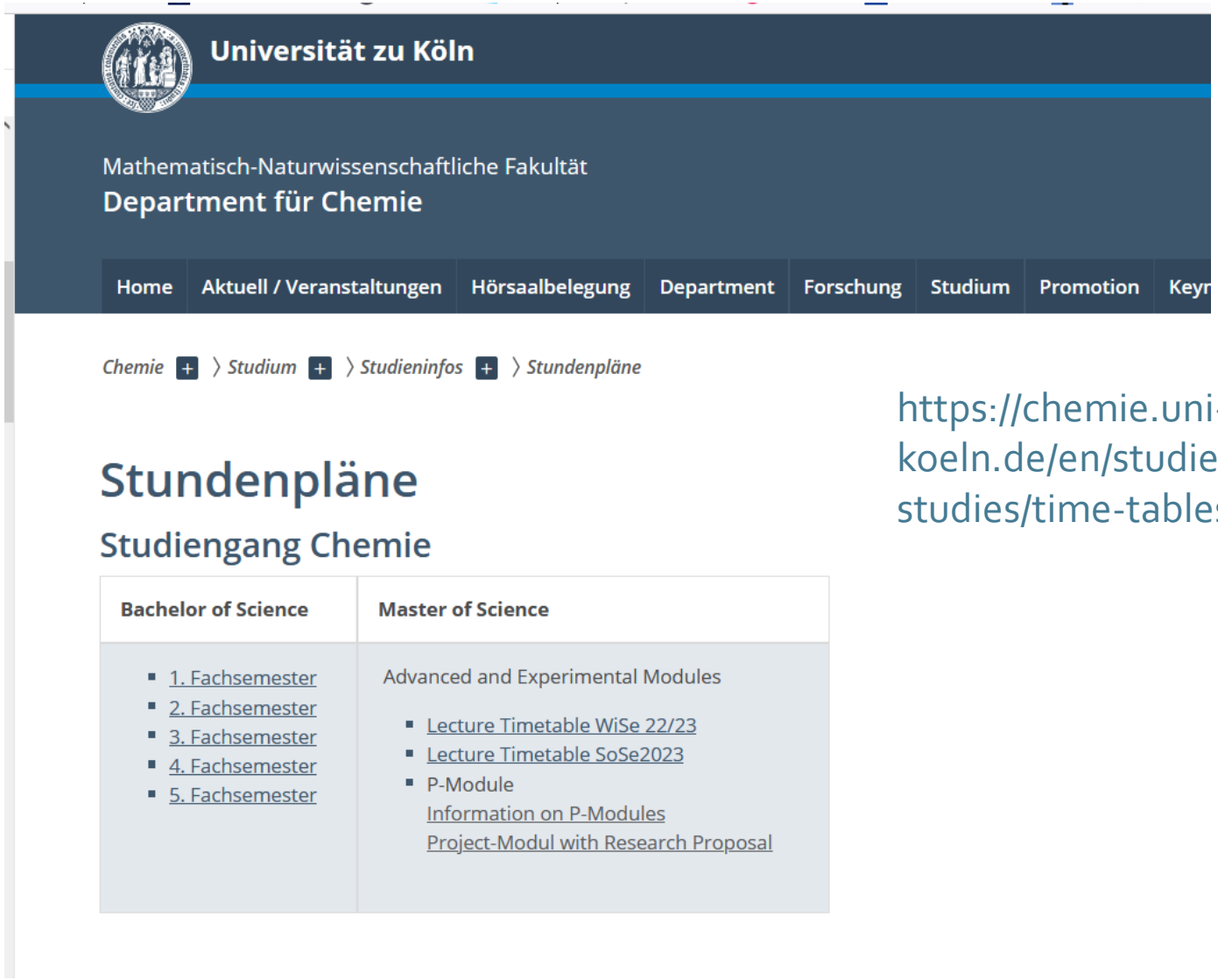
Program Advisors:
Prof. Günter Schwarz
Prof. Hans-Günther Schmalz

Advanced and Experimental Modules:
Biochemistry and Organic Chemistry
3 Project modules and Master thesis in this area.

How to find information



Lecture Timetables



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Mathematisch-Naturwissenschaftliche Fakultät

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Home | Aktuell / Veranstaltungen | Hörsaalbelegung | Department | Forschung | Studium | Promotion | Keyr

Chemie + 〉*Studium* + 〉*Studieninfos* + 〉*Stundenpläne*

Stundenpläne

Studiengang Chemie

Bachelor of Science	Master of Science
▪ 1. Fachsemester ▪ 2. Fachsemester ▪ 3. Fachsemester ▪ 4. Fachsemester ▪ 5. Fachsemester	Advanced and Experimental Modules ▪ Lecture Timetable WiSe 22/23 ▪ Lecture Timetable SoSe2023 ▪ P-Module Information on P-Modules Project-Modul with Research Proposal

https://chemie.uni-koeln.de/en/studies/information-on-studies/time-tables

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Module Responsibilities (Summer 2023)

Advanced (A) Modules:				**(0221-470**
	IC	Prof. Dr. Sanjay **Mathur**	Sanjay.mathur@uni-koeln.de	-4107
		Dr. Jörn **Bruns**	j.bruns@uni-koeln.de	-76103
	OC	Prof. Dr. Bernd **Goldfuss**	goldfuss@uni-koeln.de	-5729
	OC	PD Dr. Dirk **Blunk**	d.blunk@uni-koeln.de	-5213
	OC	Prof. Dr. Ralf **Giernoth**	ralf.giernoth@uni-koeln.de	-3094
	PC	Prof. Klas **Lindfors**	Klas.lindfors@uni-koeln.de	-4265
	TC	PD Dr. Michael **Hanrath**	michael.hanrath@uni-koeln.de	-6889
Experimental (E) Modules:				
	IC	Prof. Dr. Uwe **Ruschewitz**	uwe.ruschewitz@uni-koeln.de	-3285
	OC	Prof. Dr. Ralf **Giernoth**	ralf.giernoth@uni-koeln.de	-3094
	PC	Dr. Dirk Hertel	Dirk.hertel@uni-koeln.de	-2494
	TC	PD Dr. Michael **Hanrath**	michael.hanrath@uni-koeln.de	-6889
(Information subject to change)				

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Important Dates – Obligatory!

Module	Start Date	Time and Place
IC-A	lecture: 12.10.23 (Thu) seminar: 23.10.23 (Mo)	10:00 AC 414 9:00 HS III
IC-E	05.02.2024 / 10:00 (Mo)	Preliminary meeting & safety instructions
OC-A	lecture: 11.10.23 / 10:00 (We) seminar: 18.10.23 / 16:00 (We)	Lecture Hall III Lecture Hall III
OC-E	18.10.2023 / 14:30 (We) **(block course 13.11. – 22.12)**	Preliminary meeting & safety instructions: Seminar Room B
PC-A	lecture: 10.10.23 / 11:00 (Tue) seminar: 11.10.23 / 13:00 (Wed)	11:00, Exp. Seminar Room 1 13:00, Exp. Seminar Roon 2
PC-E	17.10.23 / 9:00 – 10:30 (Tue)	Preliminary meeting & safety instructions Seminar Room A
TC-A	09.10.23 / 12:00 (Mo)	12:00, HS II (Hörsaal II)
TC-E	in block mode, by appointment	more infos by M. Hanrath

Important Dates – Obligatory!

- **A-Modules**:
- Seminar kick-off meetings are compulsory
  - Assigment of talk topics
  - Later assignment not possible!!

- **E-Modules**:
- E module kick off meetings are compulsory
  - Safety instructions
  - No attendance to course is possible beyond

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Important: Obligatory!

Enrollment period for all **A**dvanced and **E**xperimental Modules:

in KLIPS

Oct 09 to Oct 15, 2023

- **Module participation only possible when registered!**
- Registrations are valid only for the actual semester!
- E-Module registration only when corresponding A-Module is taken!
- Register only for the modules you plan to study this semester – and de-register, if you change your mind (or inform the examination office)!
- Be fair and do not block places others are waiting for!

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Written and oral exams

- Registration is required for all exams!
  - 7 days before exam date **Latest**

    Without registration for the exam you cannot participate.
- Written exams: online registration in KLIPS
- Oral exams: individial regulations may apply

- Absence (& no medical attest) -> failed attempt ☹
  - some exams are restricted in trial numbers

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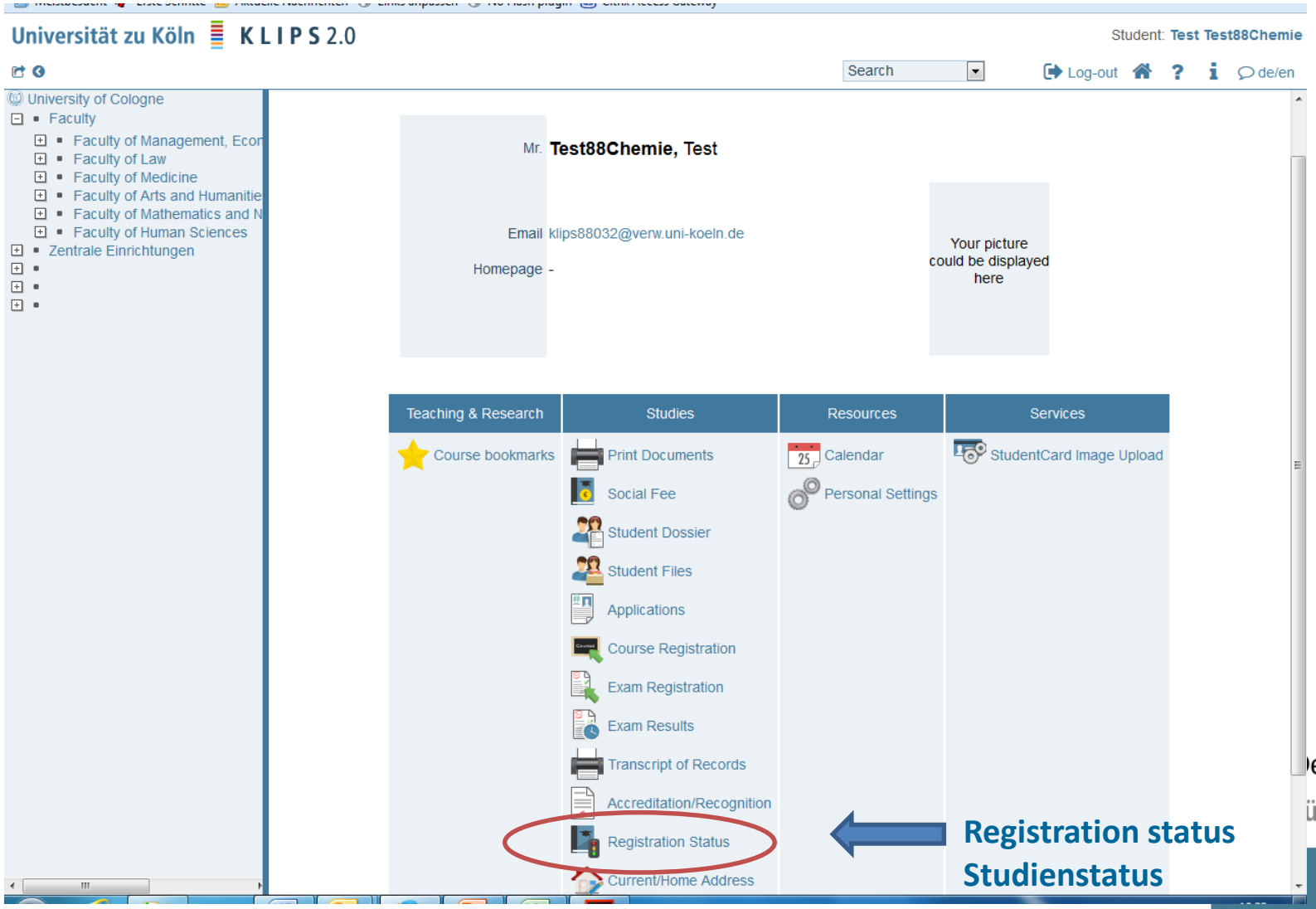
Online Registration for Modules: KLIPS 2.0



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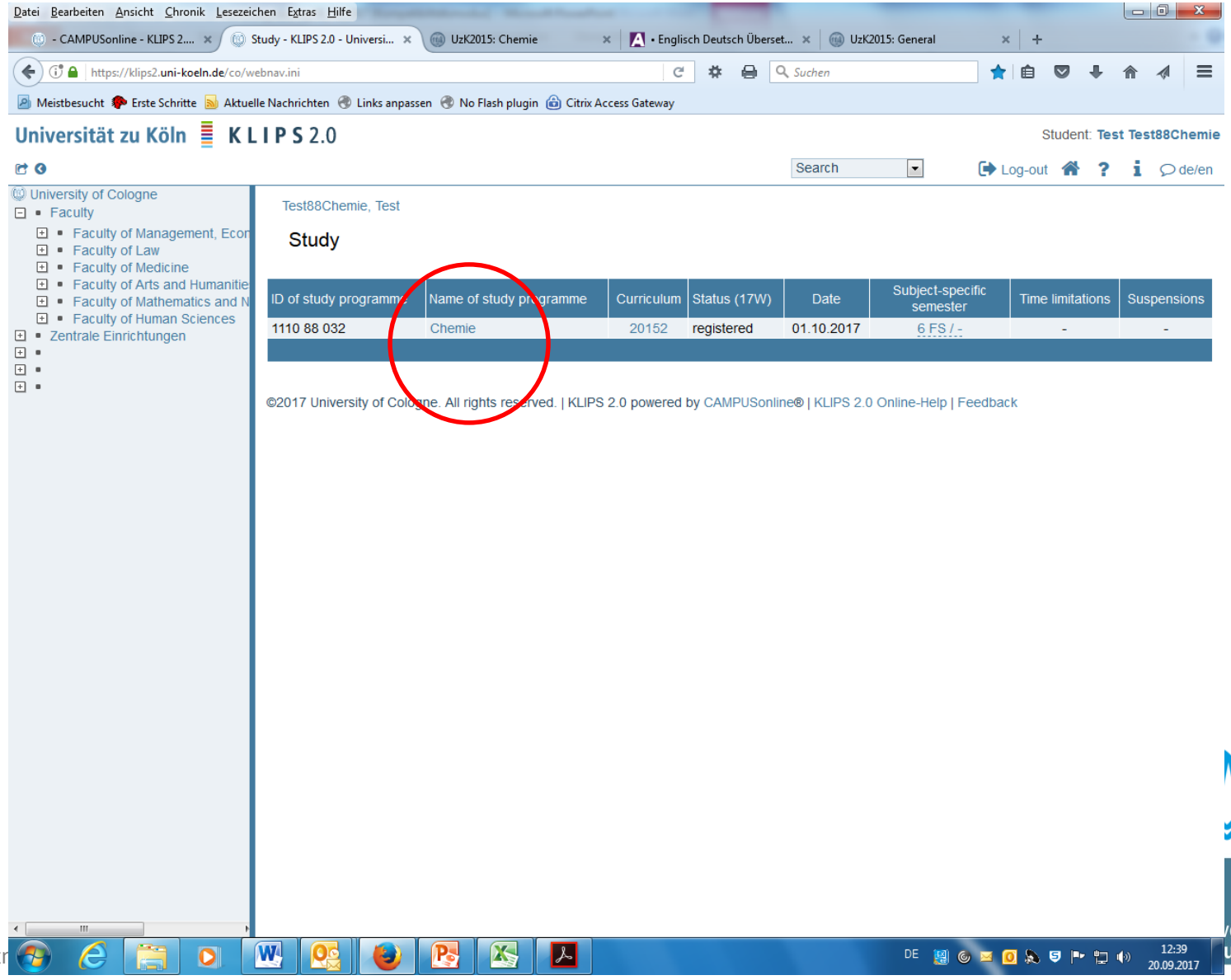

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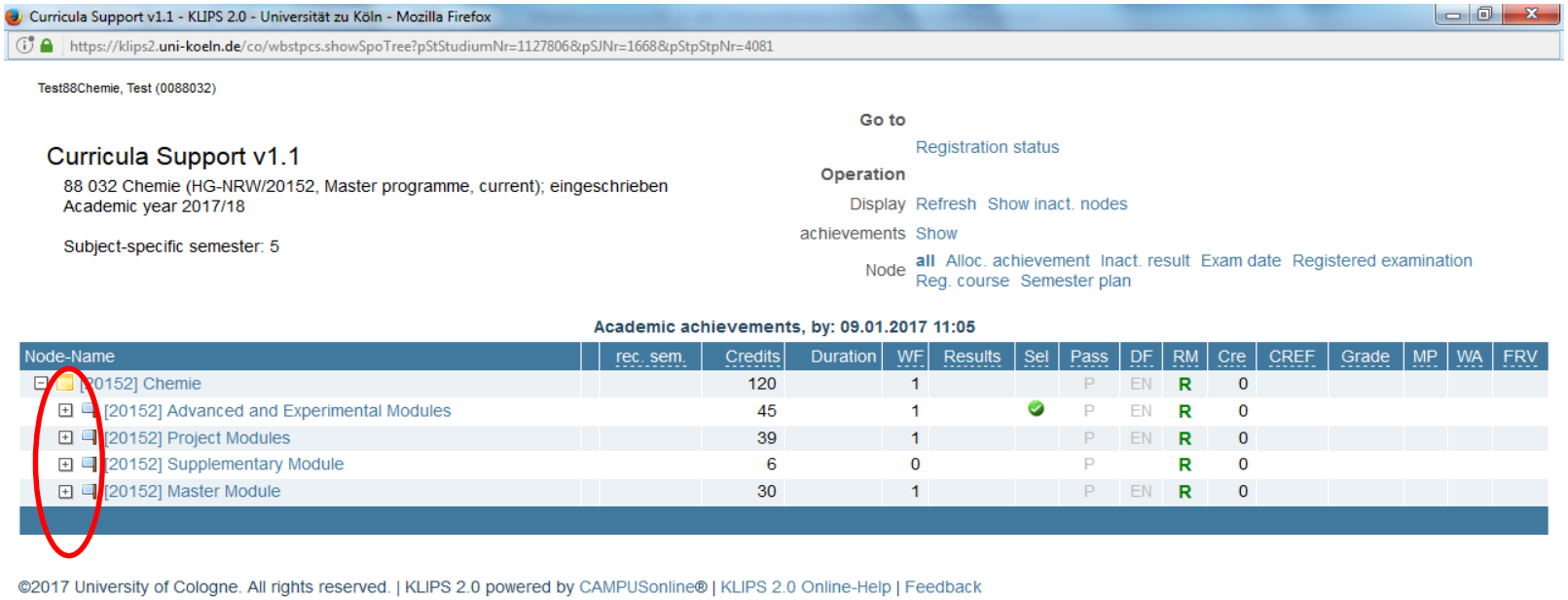
Online Registration for Modules: KLIPS 2.0



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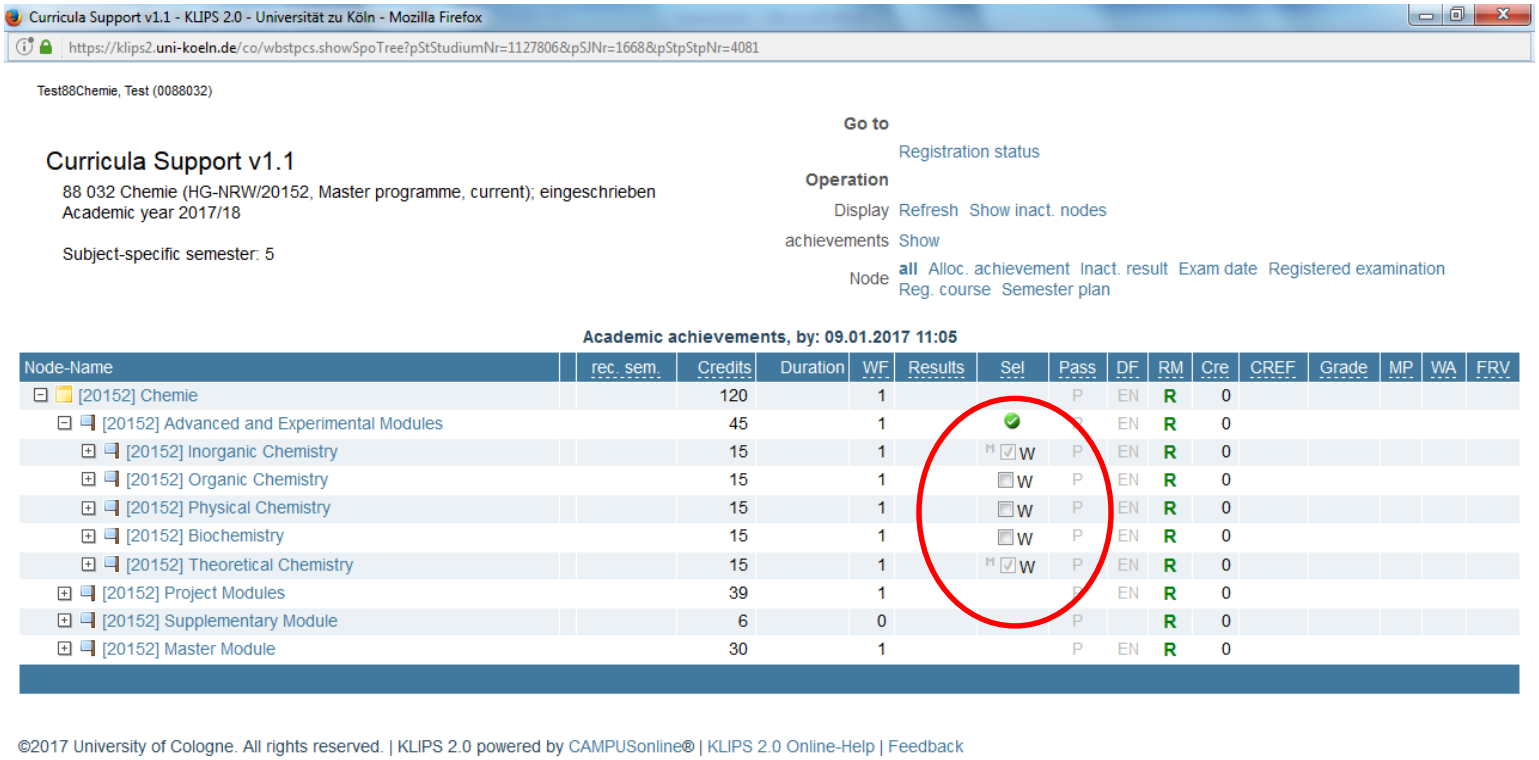
D

Online Registration for Modules: KLIPS 2.0



Remember:

- **Choose only the modules you want to study in the actual semester.**
- **De-register, if you change your mind!**

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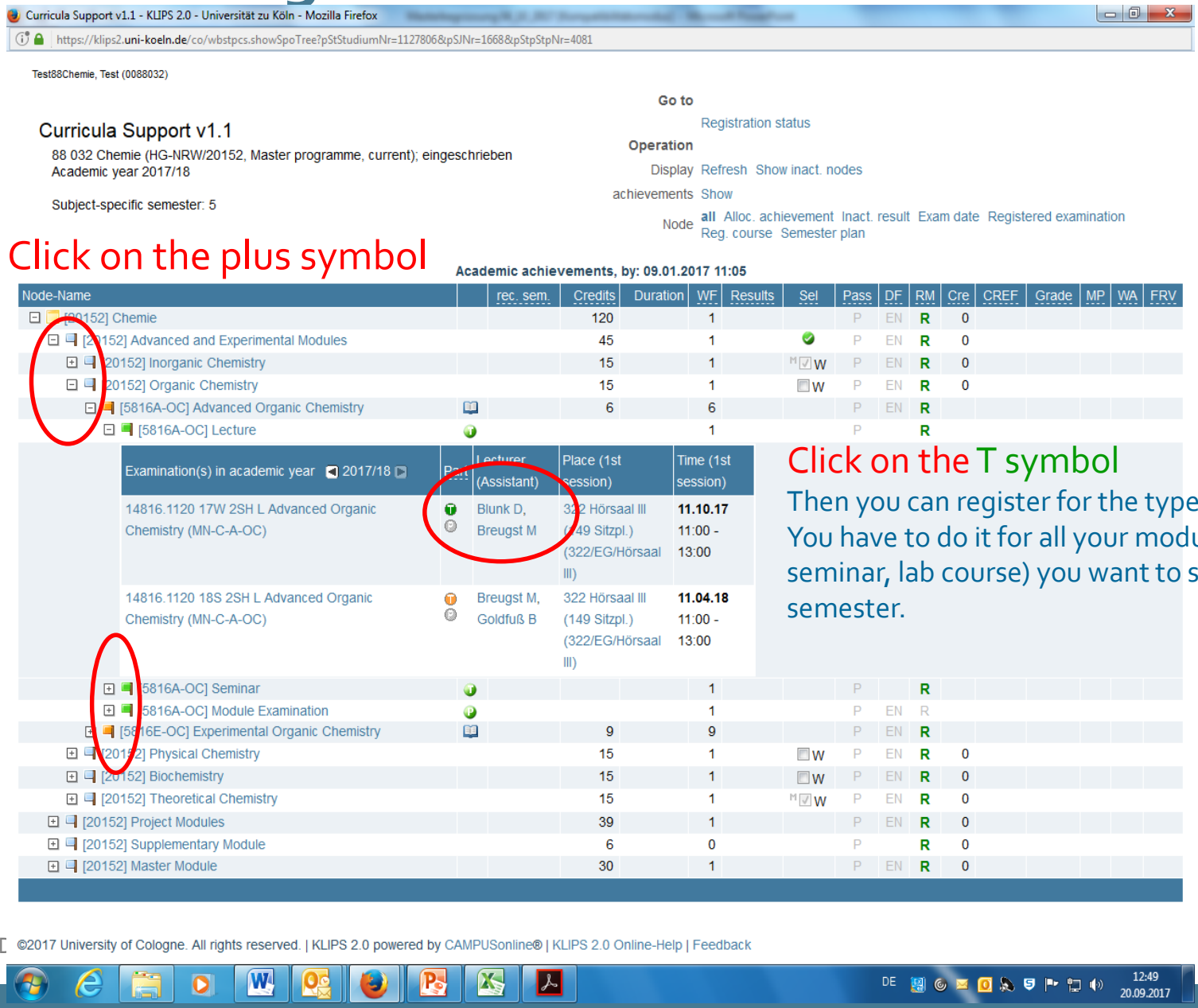
D

Online Registration for Modules: KLIPS 2.0



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Online Registration for Modules: KLIPS 2.0

Problems with registration in Klips 2.0 for modules or exams?
Please contact the **Examination Office**:

Marion Danitz

marion.danitz@uni-koeln.de

Room HS 118

Tel. +49-221-470-2239

Dr. Heike Henneken

heike.henneken@uni-koeln.de

Room HS 113a

Tel. +49 221 470 1791

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P- and S-modules: Your responsibility!

P- and S-modules request **individial organization by you!**

- see list of possible options and subjects here:
  https://chemie.uni-koeln.de/studium/studieninfos/dokumente-ordnungen
- get in contact with subject responsibles to request details
- For external modules:
  - inform ext. supervisor on module components (lecture, seminar, research lab course)
  - find internal supervisor
- for the S-module, involve your **mentor**

Registration with examination office (M. Danitz)
at least one week before start!

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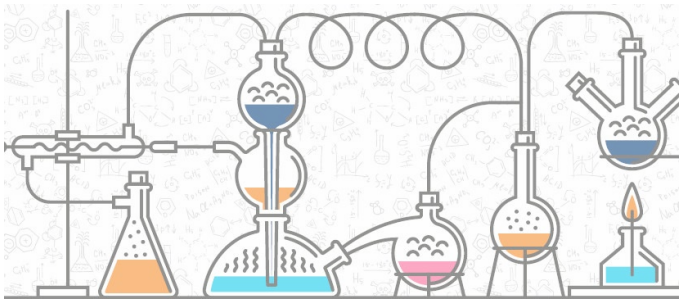
Project (P) Modules



A: Chemical Project modules

P-IC	Inorganic Chemistry
P-OC	Organic Chemistry
P-PC	Physical Chemistry
P-ThC	Theoretical Chemistry (Quantum Chemistry)
P-BC	Biochemistry (Biological Chemistry)
P-TeC	Technical Chemistry
P-NC	Nuclear Chemistry
P-MC	Macromolecular Chemistry

B: Non-chemical Project modules

P-Phy	Physics
P-Cry	Cristallography
P-Min	Mineralogy
P-Gen	Genetics
P-Inf	Computer Sciences
P-Pha	Pharmacology und Toxicology
P-PhC	Physiological Chemistry

You can maximum have **one non-chemical** project module!

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Project Module with Research Proposal (P-RP)

- P-module (lecture, seminar, lab course) + completion & defense of a related research proposal (RP)

- Students who successfully completed this module are able to …
  - prepare a research proposal for a specific scientific problem,
  - perform an in-depth critical literature search and document it,
  - perform an evaluation of current methods and technologies, a description of possible solutions to the problem together with a literature description and a time schedule for realization of the proposed research project.

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Supplementary (S) Module

Different options:

- one full A-Module (lecture, seminar, exam), or
- one A-lecture & and P-lecture with exam (A or P), or
- up to 3 P-module lectures (1–2 hours/week), or
- external experimental projects (with exam), or,
- internal experimental projects (with exam),or
- any other stuff that is accepted (talk to mentor /examn. office)

more details:

http://www.chemie.uni-koeln.de/docs.html?&L=1

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ILIAS e-Learning Platform

https://www.ilias.uni-koeln.de

- If subscribed to a course in KLIPS, subscription to the corresponding ILIAS course is automatic.

- Stay patient if content is not online (yet)

- ILIAS provides you with information and material relevant for the running courses.

  – Contact your lecturer if you experience any difficulties in finding your course or signing in.

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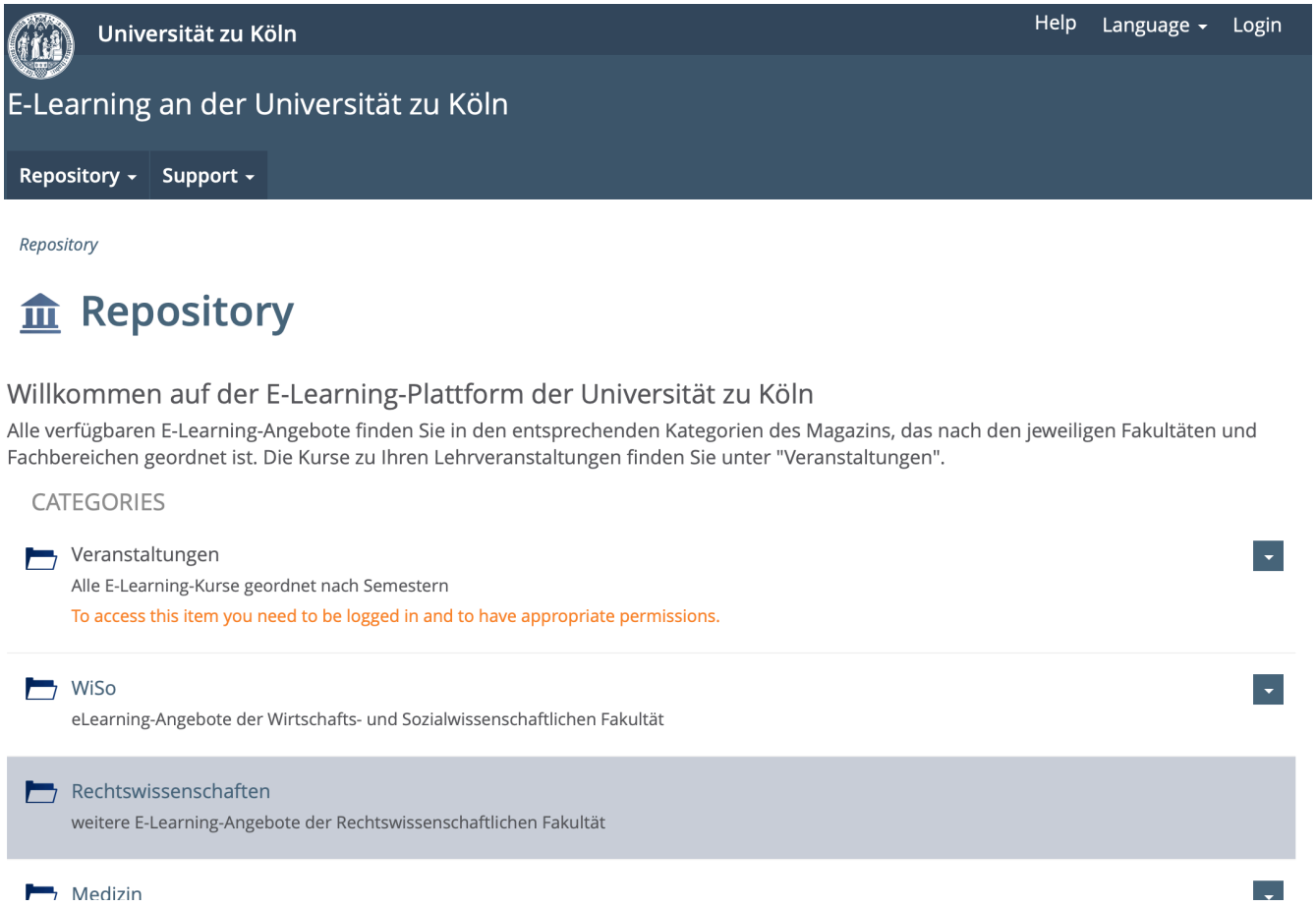
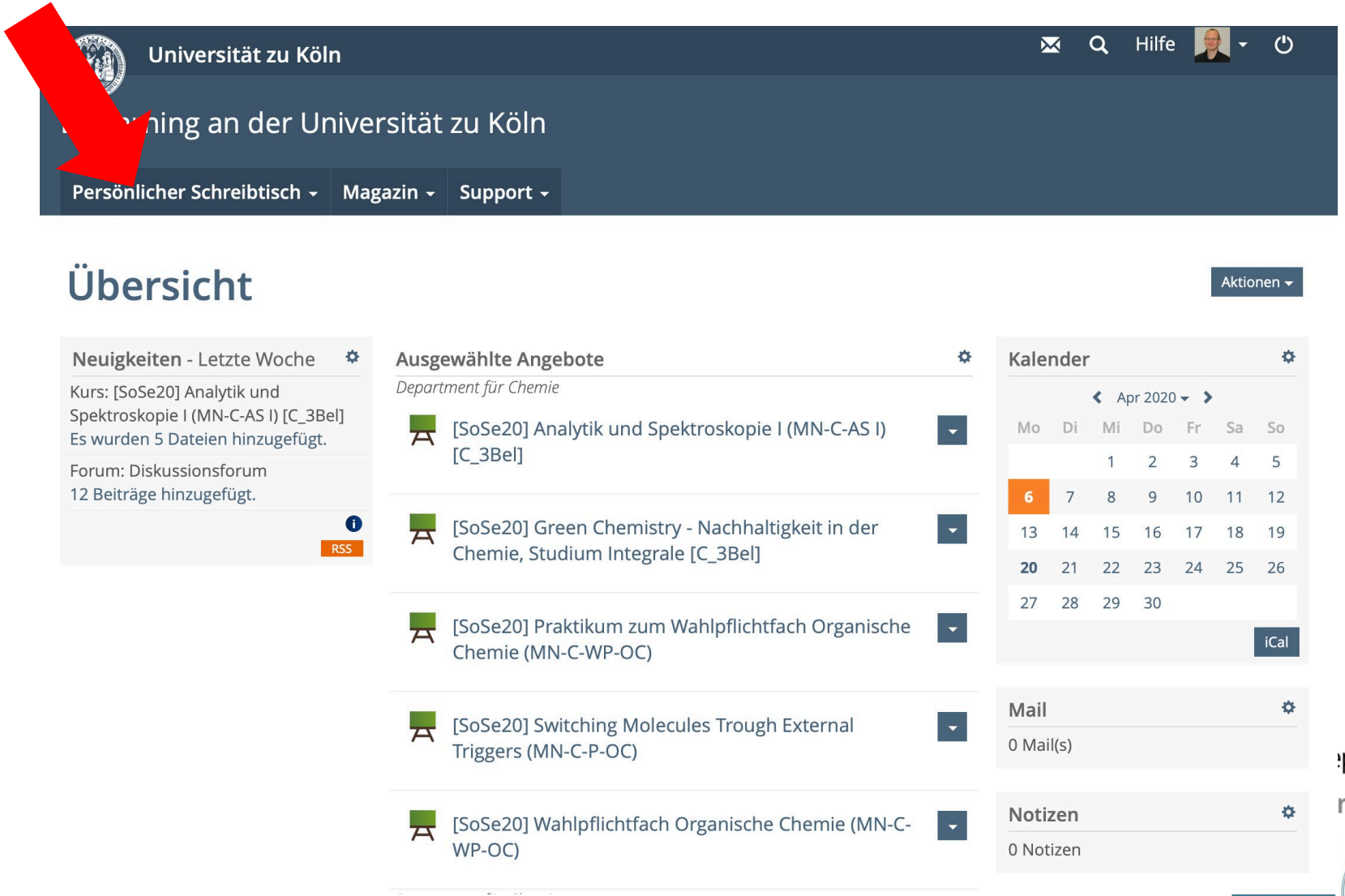
ILIAS e-Learning Platform

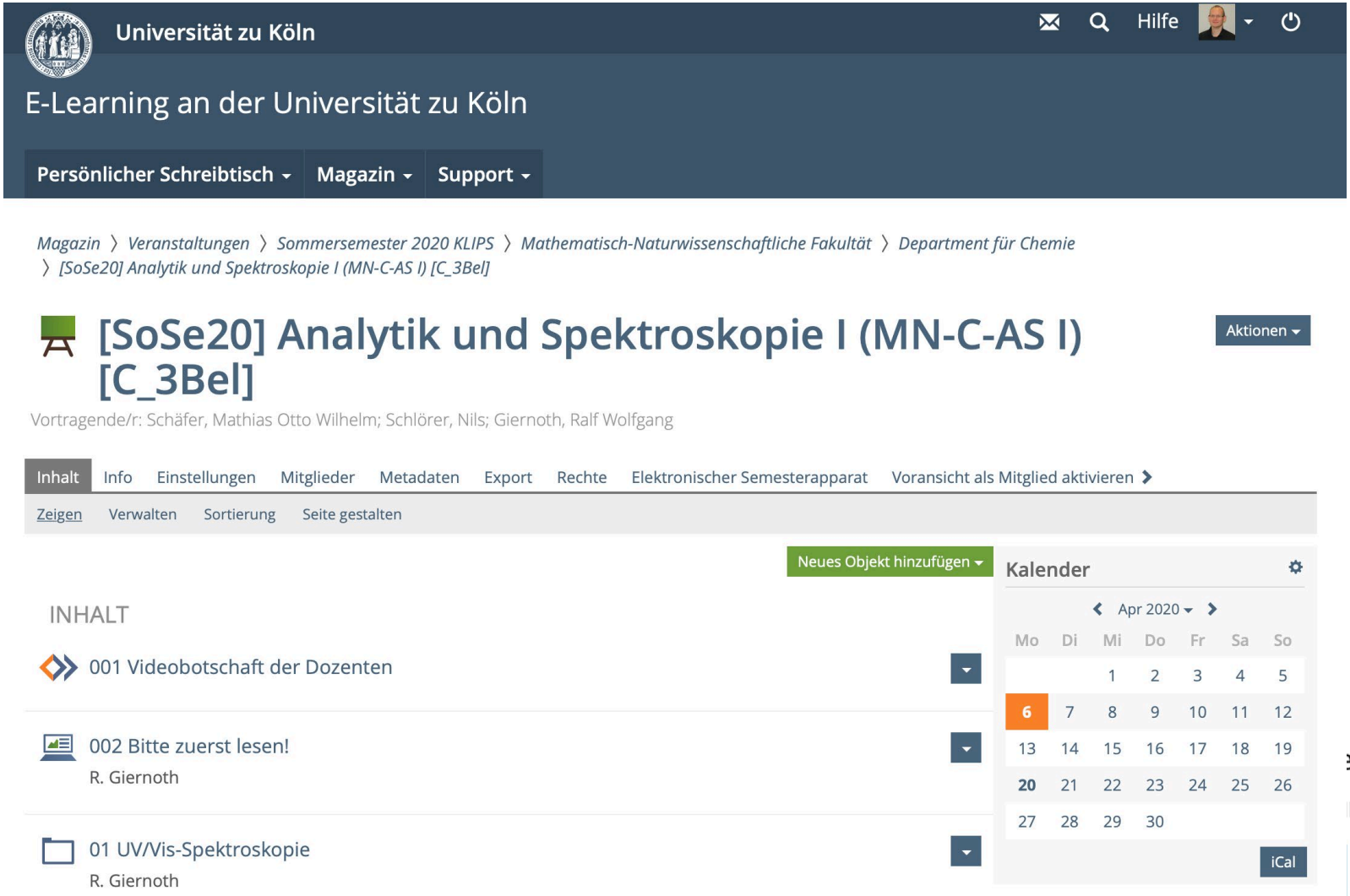
https://www.ilias.uni-koeln.de



ILIAS e-Learning Platform



ILIAS e-Learning Platform



Student council of our chemistry department = "Fachschaft Chemie"

https://fs-chemie.uni-koeln.de/

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Go abroad!

Start collecting information and get active at least one year in advance.
Ideal: P- or S-modules at other universities

Contact: Dr. Heike Henneken

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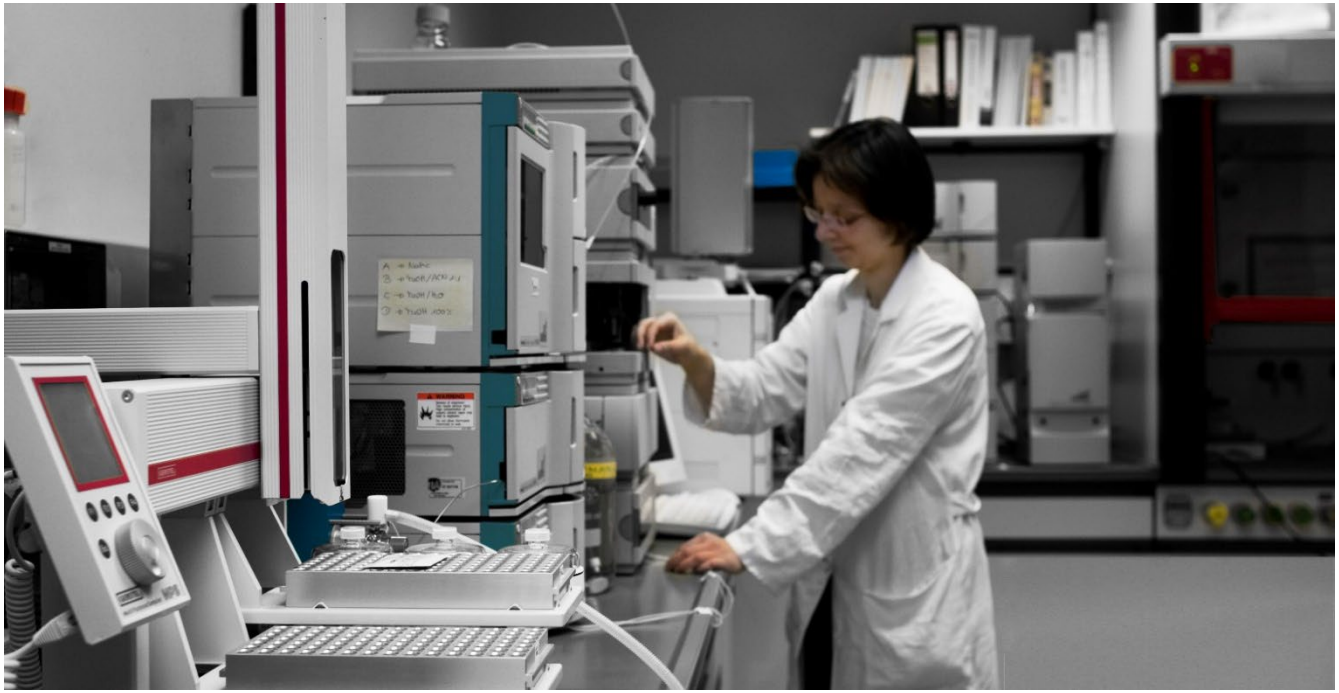
Laboratory liability Insurance



We strongly recommend that all students take out their own private (laboratory) liability insurance or secure insurance cover through their parents.

Find out more:
https://chemie.uni-koeln.de/studium/allgemeine-infos/laborversicherung

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