



UNIVERSITY  
OF COLOGNE

# MASTERINFO 18.06.2024

- Study program can be started in winter or summer term
- Fully taught in English  
(German not required but useful for every - day life)
- 2- year full - time program
- Includes 10 modules:
  - 2 advanced ,
  - 1 scientific literacy ,
  - 2 research focus ,
  - 4 specialized lab modules , and
  - a master thesis with defense
- No limit on places per term, good supervision ratio guaranteed

# Requirements

- You have completed a BSc program in Chemistry or similar .
- Grade: Your final grade is **at least 2.5**.
- Candidates have to prove **at least 12 credit points** in the following areas:
  - Inorganic Chemistry and/or Analytical Chemistry
  - Organic Chemistry and/or Biochemistry
  - Physical Chemistry and/or Theoretical Chemistry
  - at least a further 12 credit points in Fundamentals of Mathematics , Statistics and Physics
- and in total **at least 60 credit points from Chemical modules** .
- Research orientation: To allow for research lab - based studies, we ask for a **bachelor thesis** or at least for an extended lab project report.

# Requirements

To apply for the Master's program before completing your Bachelor's degree, you need to show proof of earning **at least 80% of the total credit points** . Submit a Transcript of Records with a **preliminary grade** for the application. If admitted, you **must finish your Bachelor's degree by September 30** for the winter term or March 31 for the summer term. Provide proof of completing any remaining exams by the next term's registration deadline (January/July). Failure to do so will invalidate your admission confirmation .

# Requirements

## English:

You either have a German Abitur incl. 6 years of English

OR you can proof that your BSc program was taught in English

OR you have a

- TOEFL (Paper - based 580, Computer - based 237, Internet - based 93),
- IELTS (average 6,5 - each single component 6,0),
- Cambridge qualifications: B2 First (175),
- TOEIC (listening: 460 – reading: 425 –speaking: 175) certificate

# Term based course schedule

Semester 1	Semester 2	Semester 3
Advanced Module A1 6 CP	Research focus RF2 6 CP	Lab Module LM1 15 CP
Advanced Module A2 6 CP	Subject Module SM2 12 CP	
Scientific Literacy SL 9 CP	Subject Module SM1 12 CP	Lab Module + Research Proposal LM2 18 CP
Research focus RF1 6 CP		
Σ 27 CP	Σ 30 CP	Σ 33 CP

Semester 4
Master thesis 30 CP

# Advanced Chemistry (A)

Advanced Chemistry (A) modules feature lecturers from all main areas of chemistry — biochemistry, inorganic, macromolecular, organic, physical, and theoretical — who present core knowledge combined with cutting - edge research.

You will learn, recapitulate, and deepen your understanding of modern Chemistry. The modules convey general knowledge in advanced chemistry and prepare for the more specialized modules in the respective field.

You need to choose **two A - Modules**.

**A-modules are not any more connected to E-modules !**

# Scientific Literacy (SL )

- newly created module, provides with essential scientific work skills:
  - aspects of scientific integrity,
  - presenting ,
  - searching and handling of literature,
  - handling of data,
  - introduction to the most essential software, especially AI applications
- a three - week laboratory internship
- serves as a group - building event



# Research Focus (RF)

Research Focus (RF) Modules involve collaboration between two or more lecturers, each contributing their expertise to a modern Chemistry topic. With these modules, you can already make the first steps into specialization or you can broaden your horizon and learn from the many experts within and associated with the department.

## Elective RF Modules - Winter Semester

Hanrath

Computational  
Chemistry

Blunk, Goldfuß

Lindfors

Introduction to (nano)  
optics

Schubert, Gather

Wickleder

Aspects of Transition  
Metal Chemistry with  
Emphasis on Technetium

Strub

Grüll

From Molecule to Mice  
to Men

Endepols, Kath-Schorr,  
Neundorf

Schäfer

Mass Spectrometry and  
its Application in  
Atmospheric Chemistry

Zorn (FZ Jülich), Hanrath

# Subject Modules (SM)

- 2nd and 3rd term
- extend the knowledge in the respective research area
- with **8-week** laboratory (practical part)
- **and theoretical training** (lecture part).

# Lab Modules (LM) (+ research proposal)

- 2nd and 3rd term
- extend the knowledge in the respective research area
- with 3 - month laboratory (practical part)
- **(and a research proposal)**

# Term based course schedule

Semester 1	Semester 2	Semester 3
Advanced Module A1 6 CP	Research focus RF2 6 CP	Lab Module LM1 15 CP
Advanced Module A2 6 CP	Subject Module SM2 12 CP	Lab Module + Research Proposal LM2 18 CP
Scientific Literacy SL 9 CP	Subject Module SM1 12 CP	
Research focus RF1 6 CP		
Σ 27 CP	Σ 30 CP	Σ 33 CP
Semester 4		
Master thesis 30 CP		

*Ideal for going  
abroad*

# Equivalence list

Module (2015)	CP	Module (2024)	CP	remarks
A1	6	A1	6	
A2	6	A2	6	
A3	6	RF1	6	
E1	9	*		* E1+E2+ R- RP= 18+15 => LM1+LM2 =15+18
E2	9	*		
E3	9	**		**E3+S (if lab) = 15 => LM1 (15 CP)
P1	12	SM1	12	
P2	12	SM2	12	
P- RP	15	*		Can't be LM1 (without RP, 15CP) Can't be LM2 as 3 CP lab are missing
S	6	RF2	6	(if lecture)
MT	30	MT	30	

# If you want to change...

- Apply until July 15<sup>th</sup>
- You can't go back
- Only completed modules can be recognized
- Failed attempts stay valid

# FAQ

- Will it be possible for teacher students to be accepted in this study program?  
*This will only be possible for those, who have Maths or Physics as second subject.*
- The SL- Module and the A - Module are pre - requisites for the following modules. Do I have to pass them before I can continue after the change?  
*No, because we will recognize also modules of higher semesters, but you need to pass the SL module as soon as possible.*
- I want to change and passed two A - and two E - modules. How can the two E - modules be recognized?  
*They can be recognized together with an P - RP Module as LM1 and LM2. In this case you should change at a later stage. If you want to change now, you need to listen to two lectures in the field of the E - modules. The modules will be recognized afterwards.*
- A- Macromol . C will be offered only in the summer and A- Theoretical Chemistry only in the winter terms .

# Questions?

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