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COMPUTATIONAL SCIENCES MASTER PROGRAM – SS 2025

Information for the 2. Semester

WELCOME AND WELCOME BACK!

Today:

- General Information

- Research Part (3rd and 4th semester)

- Student Council and Representatives

- Coffee/Tea and biscuits!

COMPUTATIONAL SCIENCES

Goals of the study program:

- Answer new questions in natural sciences with computational methods.

- Provide you with the qualifications to start a PhD within your respective Area of Specialisation.

- Teach you the skills required for modern, computational research methods in numerous scientific fields, in an interdisciplinary environment among other students from different scientific backgrounds.

- Train you equally well in Simulation Science, Computer Science and Applied Mathematics as well as your selected Area of Specialization.

DEGREE
Master of Science (M. Sc.)

APPLICATION
until July, 15th (winter semester)

LANGUAGE
English
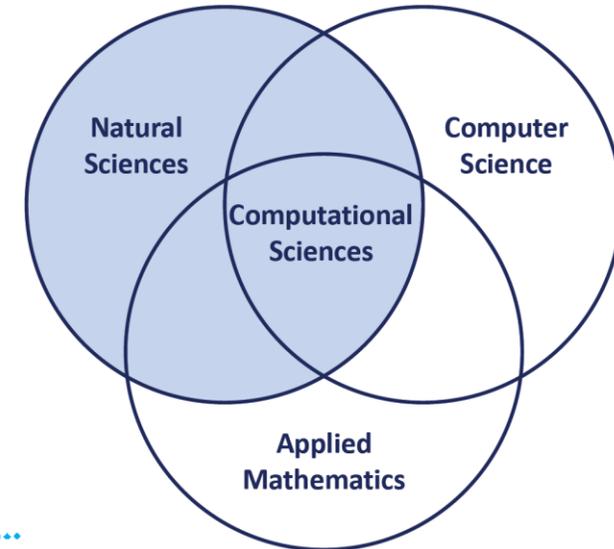
DURATION
4 Semesters (2 years)

CREDITS
120 CP

Natural Sciences

Computer Science

Computational Sciences

Applied Mathematics

CURRICULUM

Semester	Compulsory Modules total 18 CP	Mathematics/ Computer Science total 18 CP	Specialization total 78 CP		Supplementary Contents total 6 CP
1	**Simulation & Modeling 1 9 CP**	**Elective Mathematics / Computer Science Area** **18 CP**	**Specialization Area** **30 CP**		**Suppl. Module 6 CP**
2	**Simulation & Modeling 2 9 CP**				
3			**Literature Seminar 6 CP**	**Project Work** **12 CP**	
4			**Master Thesis 30 CP**		

MORE INFORMATION ONLINE!

https://computationalsciences.uni-koeln.de/

PEOPLE AND CONTACT

Prof. Dr. Joachim Saur (Chair)
Speaker: *Comp. Astro-/Space Physics*
Institute for Geophysics and
Meteorology
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Dr. Vera Schemann
Speaker: *Earth System Sciences*
Institute for Geophysics and
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Prof. Dr. Thomas Wiehe
Speaker: *Computational Biology*
Institute for Genetics
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PD Dr. Michael Hanrath
Speaker: *Theoretical Chemistry*
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Prof. Dr. Simon Trebst
Speaker: *Theoretical Condensed
Matter Physics*
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Dr. Yorik Krumbeck
Study Program Coordinator
Institute for Geophysics and
Meteorology
y.krumbeck@uni-koeln.de

Important Contacts and Information

Coordinator of the Study Program

- For general inquiries
- GeoMet Institute (Pohligstr. 3), room 3.218
- Contact: info-compscie@uni-koeln.de

Examination Office

- For information and questions regarding exams and course registrations
- GeoMet Institute (Pohligstr. 3), room 3.132
- Contact: geo-pruefungsamt@uni-koeln.de

Mailing list:

- You will receive important announcements and information throughout your studies via this list
- Please make sure you are subscribed to info-msc-cs@uni-koeln.de for the entire duration of your master studies!

Website:

- https://computationalsciences.uni-koeln.de/

GERMAN AS A FOREIGN LANGUAGE

NEW: German courses now available for free!

As of SS 2025, the Faculty of Mathematics and Natural Sciences **fully finances** German courses offered at the *Department German as Foreign Language (DaF)* **for all Master students at the MNF.**

- [Information about General Language Courses](#)

- [Register for German language courses here](#)

RESEARCH PART (3ᴿᴰ AND 4ᵀᴴ SEMESTER)

Research Part (3rd and 4th Semester)

Semester	Compulsory Modules total 18 CP	Mathematics/ Computer Science total 18 CP	Specialization total 78 CP	Supplementary Contents total 6 CP
1	**Simulation & Modeling 1 9 CP**	Elective Mathematics / Computer Science Area 18 CP	Specialization Area 30 CP	Suppl. Module 6 CP
2	**Simulation & Modeling 2 9 CP**			
3			**Literature Seminar 6 CP** / **Project Work 12 CP**	
4			**Master Thesis 30 CP**	

Research Part (3rd and 4th Semester)

Thesis + Preparation Modules

The *Research Part* of the Computational Sciences master program consists of **three consecutive modules:** the *Literature Seminar* (6CP), the *Project Work* (12CP) and the *Master Thesis* (30CP).

All three modules are compulsory for all students and deal with **the same research topic** in one of the research groups of your Area of Specialization

Literature Seminar (6 CP, 3rd semester)

- Literature research (introduction to research topic)

- Seminar talk (~20min + questions, graded)

- Written report (~10 pages, not graded)

Project Work (12 CP, 3rd semester)

- Conducted within research group (preparation work for research)

- Seminar attendance (2SWS, ca. 2–3 months)

- Seminar talk (~45min, graded)

Master Thesis (30 CP, 4th semester)

- Independent research work

- Written thesis (duration: max 6 months, graded weight 75%)

- Final Presentation (graded weight 25%)

Research Part (3rd and 4th Semester)

Before you start with the Literature Seminar:

- The Literature Seminar is the first step of the research part of your master studies. Following that, you continue with the Project Work and finally your Master Thesis.

- All three modules give a total of 48 CP for the *Research Part* of your master and are intended for 2 semesters (the third and fourth). In other words, the *Research Part* usually takes a whole year of your studies

- **Make sure that you have chosen a supervisor and research topic a year prior to the end of your master** (i.e. before you start with the literature research in the *Literature Seminar*).

- Carefully plan ahead (also together with your mentor), when you best start with the Literature Seminar, so that you can focus on your research towards the end of your studies.

- **Please carefully read the guidelines and information** about the Research Part on this website: https://computationalsciences.uni-koeln.de/for-students/guidelines/research-part

Research Part (3rd and 4th Semester)

Advisory Meeting (prior to the Literature Seminar)

- If you wish to take part in the Literature Seminar, make sure you first

  ➢ Find a field of interest within your Area of Specialisation,

  ➢ Find a suitable supervisor (and possibly advisors who help you further).

- In an initial advisory meeting, you and your supervisor/s discuss and document a study plan for your research phase. For this

  ➢ Download the Advisory Meeting form,

  ➢ Fill the form during the advisory meeting (the form must be signed by you and your supervisor/s!)

- Once you have documented a study plan on the advisory meeting form:

  ➢ Please send a copy of the signed form to the study program coordinator <u>and</u> the examination office: geo-pruefungsamt@uni-koeln.de

STUDENT COUNCIL & REPRESENTATIVES

A few words from your Student Council…

Student Council ("Fachschaft") Geophysics & Meteorology:

- Room 3.135, GeoMet Institute (Pohligstr. 3, 3rd floor)

- Web: https://geomet.uni-koeln.de/en/students-council

- Email: fs-geomet@uni-koeln.de

- Regular meetings: **Mondays around 17 o'clock** and spontaneously at your whim

- **Actively shape your study experience, organise events and trips (fundings available!)**

Student Council members for CompScie:

- Luca Sommer (lsommer4@smail.uni-koeln.de)

- More volunteers welcome! ☺

Role of the Student Representatives

A student representative, of course, represents Computational Sciences students

- Member of the examination board

- Takes part in discussions and decisions about regulations and the development of the study program

- Contact person for students

  - Students may raise their feedback or concerns to the representative, to be forwarded **anonymously** to the examination board or other respective contacts

- **It is essential that you, as students, have a voice represented at the examination board meetings (1-2 times per year)!**

Nomination/Election for 2025-26

- Each year a new student representative (and potential substitutes) is elected for the examination board

- Your current student representatives:

  - **Nikita Alert** (nikitaalert01@hotmail.com)

  - Ayesha Khan (akhan10@smail.uni-koeln.de)

➢**Who would you like to nominate as your student representative, or who would volunteer to run for the upcoming year?**

➢Luca Sommer (lsommer4@smail.uni-koeln.de) has volunteered to run as new student representative

➢Vincent von Häfen (vvonhaef@smail.uni-koeln.de) has volunteered to run as substitute

HAVE A GREAT SUMMER TERM!