Self-disclosure for M.Sc. Chemical Biology at TU Dortmund University

Dear applicant for our Master's degree program in Chemical Biology,

Thank you for your interest in our Master's degree program. Before submitting your application, please read and complete this document. It will provide you with a preliminary overview of our admission criteria and **assist you in determining your eligibility** for the Master's degree program in Chemical Biology.

We require detailed information about your academic background in order to evaluate your application effectively and asses your eligibility for the program.

Family name, First name	
Date of birth	
Degree 1, University	
Degree 2, University	
Further degrees and courses	

Admission requirements

Admission to the Master's degree program in Chemical Biology requires a Bachelor's degree in Chemical Biology or a comparable degree comprising at least six semesters. After submitting your application to uni-assist, and once all documents are complete, it will be forwarded to us for assessment. We will then evaluate the comparability of your degree with our requirements.

For detailed admission requirements, please refer to the Examination Regulations.

To be eligible for our Master's degree program, you must meet six admission criteria outlined in the following subsections. There are no additional restrictions.

Candidates whose qualifications align with those of our Bachelor's program graduates in **relevant theory** and who possess sufficient **hands-on laboratory experience** will be invited to an admissions interview. Aim of this 15–20 minute interview is to get to know the candidates, and assess their laboratory skills and laboratory safety knowledge. The outcome will determine admission and whether any stipulations (up to a maximum of 30 credits) will be imposed.

Criterion 1: Scope of the Courses in Chemistry

The Bachelor's degree program in Chemical Biology focuses on chemical processes within biological systems. Graduates from our program have a solid foundation in Biochemistry, Synthetic Biology, Cell Biology, and Chemistry. Given the specialized nature of our Bachelor's degree program, we do not expect you to possess the same competencies as our graduates.

In the first criterion, we will compare your qualifications in chemistry with the relevant academic achievements from our Bachelor's degree program. Please list the courses you have successfully completed in the tables below. Note that **each course may only be counted once.**

In the following list, please provide information regarding the scope of the Chemistry courses in your Bachelor's degree program that are relevant to us.

1. **Enter the number of hours per week (HPW)** for each course, not credits, grades, or marks.
2. **Specify the number of weeks** for each course. We need to know, how long your course was.
3. If a module includes two different parts (e.g., organic and physical chemistry), list each part under the appropriate heading.
4. In the column for laboratory courses, only include hours during **which you actively performed** experiments in the laboratory. Demonstrations, films, lectures, etc., on how to conduct experiments **do not count** as laboratory experience.

Please note that there is an additional table regarding your **practical laboratory skills on a separate form.**

1. **General and Inorganic Chemistry:** Please note that this category refers to basic and advanced knowledge in general and classic inorganic chemistry. Related disciplines such as applied chemistry, materials chemistry/science or industrial (inorganic) chemistry are not considered relevant.

For your comparison: B.Sc. Chemical Biology at TU Dortmund: Module "General and Inorganic Chemistry" 90h (6 HPW, 15 weeks), "Inorganic Chemistry 2": 60h (4 HPW, 15 weeks)

Degree program	Course title	Theory	Laboratory
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks

2. **Analytical Chemistry and basic laboratory courses in Inorganic Chemistry:** Please note, this category includes courses about quantitative and qualitative analysis, as well as basic experiments in inorganic chemistry for beginners.

For your comparison: B.Sc. Chemical Biology at TU Dortmund: Module "General and Inorganic Chemistry Laboratory Course" 165h (10 HPW laboratory course, 1 HPW seminar), "Laboratory Course Inorganic Chemistry 2": 90h (4 HPW laboratory course, 2 HPW seminar)

Degree program	Course title	Theory	Laboratory
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks

3. **Instrumental Analysis and Methods of Structure Elucidation:** Please note, this category includes fundamental information about instrumental methods of analysis and their application. The detailed theoretical background is a topic of courses in physical chemistry.

For your comparison: B.Sc. Chemical Biology at TU Dortmund: Module "Structure Elucidation" 60h (4h per week)

Degree program	Course title	Theory	Laboratory
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks

4. **Organic Chemistry and advanced laboratory courses in synthetic chemistry (inorganic and organic chemistry):** Please note that this category refers to the classic disciplines of organic chemistry, such as basic reaction types, reaction mechanisms, and named reactions for the synthesis of diverse compound classes. Practicals cover hands-on syntheses under argon atmosphere, chromatography, etc. Related disciplines such as applied chemistry (e.g. polymer chemistry, petroleum chemistry, green chemistry), medicinal chemistry, biochemistry, industrial organic chemistry or physical organic chemistry are not considered equivalent.

For your comparison: B.Sc. Chemical Biology at TU Dortmund: Module "Organic Chemistry 1" 60h (4 HPW, 15 weeks), "Organic Chemistry 2" 60h (4 HPW, 15 weeks), "Organic Chemistry 3" 45h (3 HPW, 15 weeks), "Laboratory Course in Organic Chemistry" 180h (10 HPW laboratory course, 2 HPW seminar)

Degree program	Course title	Theory	Laboratory
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks

5. **Physical Chemistry:** Please note that this category refers to the classic disciplines of physical chemistry as chemical kinetics, thermodynamics, electrochemistry, transport phenomena, properties of gases and liquids, quantum theory, theory of atoms and molecules structure, theory of spectroscopy, statistical description of matter.

For your comparison: B.Sc. Chemical Biology at TU Dortmund: Module "Physical Chemistry 1 and 2" 105h (7 HPW, 15 weeks), "Physical Chemistry 3" 60h (4 HPW, 15 weeks), "Laboratory Course in Physical Chemistry" 105h (6 HPW laboratory course, 1 HPW seminar)

Degree program	Course title	Theory	Laboratory
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks

6. **Chemical Biology courses:** Here you can add courses like those mentioned below.

For your comparison: B.Sc. Chemical Biology at TU Dortmund: Module "Bioorganic Chemistry 1" 60h (4 HPW, 15 weeks), "Biophysical Methods" 45h (3 HPW, 15 weeks), "Bioinorganic Chemistry" 45h (3 HPW, 15 weeks), "Laboratory Course in Bioorganic Chemistry" 150h (10 HPW laboratory course)

Degree program	Course title	Theory	Laboratory
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks

Criterion 2: Scope of the Courses in Biochemistry, Synthetic Biology and Cell Biology

In this section, we ask you to provide information about your competencies in Biochemistry, Synthetic Biology, Cell Biology and related fields. Please list the courses you have successfully completed in the tables below, following the same rules as in Criterion 1. **Note that each of your courses can only be counted once.**

1. **Biochemistry:** This comprises e.g. topics like biomolecules, enzymes, flow of genetic information, methods in biochemistry, protein expression, genome analysis, metabolism, biosynthesis in theory and practice in the laboratory.

For your comparison: B.Sc. Chemical Biology at TU Dortmund: Module "Biochemistry and Molecular Biology" 45h (3 HPW, 15 weeks), "Biochemistry Metabolism": 45h (3 HPW, 15 weeks), "Practical Course in Biochemistry" 195h (10 HPW laboratory course, 3 HPW seminar)

Degree program	Course title	Theory	Laboratory
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks

2. **Synthetic Biology:** This category includes both theoretical and laboratory courses in synthetic biology. Topics cover the methods and applications of synthetic biology, microbiology, and the biology of prokaryotic cells. The field encompasses key techniques such as biochemical production and amplification of DNA and RNA, DNA assembly, and genome editing.

For your comparison: B.Sc. Chemical Biology at TU Dortmund: Module "Synthetic Biology" 45h (3 HPW, 15 weeks), "Practical Course in Synthetic Biology" 90h (6 HPW laboratory course)

Degree program	Course title	Theory	Laboratory
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks

3. **Cell Biology:** The focus of our Bachelor's degree program is on structure, dynamics and functioning of eucaryotic cells in theory and performing experiments with these cells in the laboratory.

For your comparison: B.Sc. Chemical Biology at TU Dortmund: Module "Molecular Cell Biology" 45h (3 HPW, 15 weeks), "Practical Course in Cell Biology" 75h (4 HPW laboratory course, 1 HPW seminar)

Degree program	Course title	Theory	Laboratory
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks
☐ Bachelor ☐ _____		___ HPW ___weeks	___ HPW ___weeks

Criterion 3: Practical laboratory skills

The Bachelor's degree program in Chemical Biology at TU Dortmund University comprises 66 contact hours per week of hands-on laboratory courses, in addition to a total of 10 hours per week dedicated to seminars during the Bachelor's degree program and the Bachelor's thesis. Our graduates are therefore able to conduct basic scientific research comprising experimental work.

As the laboratory courses in the Master's degree program build upon the practical skills acquired during our Bachelor's degree program, we can only admit applicants who demonstrate a high level of practical experience in (bio-)chemistry and who are familiar with scientific research methods. **Please complete also the second form regarding your practical laboratory skills, which outlines the content of our laboratory courses and important methodologies.** There you can also indicate your relevant skills gained through work experience for our assessment. **We need both forms for the assessment of your application.**

Criterion 4: Thesis and experience with scientific experiments and writing

The Bachelor's degree in Chemical Biology concludes with a Bachelor's thesis at the end of the program. This thesis is based on the analysis of relevant scientific literature and includes original scientific experiments. Throughout the thesis work, students develop the ability to independently manage a project within a specified timeframe, discuss their results, and write a scientific thesis. Prospective students of the Master's degree program are expected to be capable of conducting scientific experiments, working with scientific literature, understanding various citation methods, writing a thesis, and adhering to the principles of good scientific practice. Therefore, please let us know if you have written a thesis or, alternatively, prepared a report on a substantial scientific project or authored any relevant publications.

7. Bachelor's / Master's thesis

☐ I have **not** written a Bachelor's thesis
☐ I have written a Bachelor's thesis
Title:

☐ I have **not** written a Master's thesis
☐ I have written a Master's thesis
Title:

☐ The Bachelor's thesis focused on the discussion of original experimental work
☐ The Bachelor's thesis was based solely on literature reviews without conducting experiments

☐ The Master's thesis focused on the discussion of original experimental work
☐ The Master's thesis was based solely on literature reviews without conducting experiments

Other scientific project(s):

Other scientific project(s):

Contained experimental part: ☐ yes ☐ no
Scope of the experimental part:_____weeks

Contained experimental part ☐ yes ☐ no
Scope of the experimental part:____weeks

Remarks

In this field you can add additional information that could be of interest or important for the assessment of your application.

Criterion 5: Language requirements

Most of the courses are taught in English. Therefore, applicants must provide evidence of **language proficiency at level B2** (or above) according to the Common European Framework of Reference for Languages. The following forms of evidence of English language proficiency are accepted:

- Proof of English language skills as part of a German high school diploma
- An internationally recognized language certificate (TOEFL, IELTS, Cambridge English Language Assessment, Pearson PTE Academic, TOEIC, telc, UNIcert, Cambridge IGCSE)
- Completion of at least one year at an English-speaking school
- Applicants whose native language is English or who have obtained a degree from a program taught in English

A certificate of German language proficiency is not required. Starting from the summer semester 2027, the minimum grade for the Master's degree program will be eliminated.

I hereby confirm that the information I have provided regarding my courses is correct to the best of my knowledge and belief.

Location and Date Signature