



# **Programme-specific Section of the Curriculum for the MSc Programme in Biochemistry at the Faculty of Science, University of Copenhagen 2009 (Rev. 2026)**

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## 1 Title, affiliation and language

A shared section that applies to all BSc, part-time MSc and MSc Programmes at the Faculty of Science is linked to this programme-specific curriculum.

### 1.1 Title

The MSc Programme in Biochemistry leads to a Master of Science (MSc) in Biochemistry with the Danish title: *Cand.scient. (candidatus/candidata scientiarum) i biokemi*.

### 1.2 Affiliation

The programme is affiliated with the Study Board for the Biological Area and the students can both elect, and be elected, to this study board.

### 1.3 Corps of external examiners

The following corps of external examiners is used for the central parts of the MSc Programme:

- Corps of External Examiners for Biology (*biologi*).

### 1.4 Language

The language of this MSc Programme is English.

## 2 Academic profile

### 2.1 Purpose

The MSc Programme in Biochemistry is a research-based programme that aims to provide students with competences, skills and knowledge within one of the biochemistry subject sub-disciplines, with an individually chosen specialisation centred on an independent, experimental research project. The programme provides IT-competences and digital literacy.

### 2.2 General programme profile

The student follows a profile in biochemistry covering e.g. the sub-disciplines molecular and cell biology, molecular genetics, molecular microbiology, protein science and neurobiology. In addition, the student follows supplementary courses where restricted elective courses are within e.g. molecular and cell biology, molecular genetics, molecular microbiology, protein science and neurobiology. The elective courses can be in other disciplines. Thus, it is possible to create an individual academic profile within biochemistry.

Biochemistry, which combines chemistry and biology in the understanding of life at the molecular level, is the key subject discipline of the programme. The student will be trained to critically understand, analyse and evaluate theoretical and experimental methods in biochemistry and evaluate scientific conclusions within biochemistry. Both from original scientific literature and in relation to their own experiments carried out during the thesis.

### 2.3 General structure of the programme

The MSc Programme is set at 120 ECTS.

There are no pre-defined specialisations in the programme.

### 2.4 Career opportunities

The MSc Programme in Biochemistry qualifies students to become professionals within business functions and/or areas such as:

- A PhD programme

- Within biochemistry including biochemistry sub-disciplines, graduates will attain a high level of theoretical and experimental expertise that will qualify them to work independently, be part of a research team and manage projects at universities, biotech and pharmaceutical industry and hospitals.

### 3 Description of competence profiles

Students following the MSc Programme acquire the knowledge, skills and competences listed below. Students will also acquire other qualifications through elective subject elements and other study activities.

#### 3.1 Competence profile

Graduates holding an MSc in Biochemistry have acquired the following:

##### Knowledge about:

- Research at a high international level, including an overview of the latest research in Biochemistry and relevant sub-disciplines.
- Industrial and medical applications.
- The latest research and relevant theoretical and experimental methods in Biochemistry and relevant sub-disciplines.

##### Skills in/to:

- Master relevant theoretical and experimental scientific methods in Biochemistry and relevant sub-disciplines.
- Read and understand original biochemistry literature.
- Document the results of experiments.
- Use the subject's main databases and relevant digital tools within IT technology and artificial intelligence and data management.

##### Competences in/to:

- Formulate, structure and manage a research project and evaluate it in relation to state-of-the-art research in the field and to sustainability and innovation.
- Develop and apply biochemical methodology to generate new knowledge.
- Generate, evaluate and analyse data quantitatively, including its degree of uncertainty, potential sources of error, the relevance of the methodology used and the validity of the data using relevant digital tools within IT and artificial intelligence.
- Organise own work, both individually and as part of a research group.
- Manage projects in public- and private-sector institutions and companies.
- Critically read and evaluate original biochemical literature including relevant sub-disciplines, identify scientific issues, reflect on the model solutions used and develop alternative solutions.
- Discuss the application of biochemistry research results in social, environmental, sustainability and ethical contexts on the basis of academic arguments.
- Disseminate the results of their own and other people's experiments and complex problems using correct academic terminology, both orally and in writing.
- Take independent responsibility for their own academic development and specialisation.

## 4 Admission requirements

### 4.1 Bachelor's degrees that automatically fulfil the academic requirements

Applicants with one of the following Bachelor's degrees automatically fulfil the academic requirements for admission to the MSc Programme in Biochemistry:

- Biochemistry (*biokemi*) from University of Copenhagen (reserved access).
- Molecular Biomedicine (*molekylær biomedicin*) from University of Copenhagen
- Nanoscience (*nanoscience*) from University of Copenhagen
- Biochemistry and Molecular Biology from University of Southern Denmark
- Biotechnology engineering (*civilingeniør*) from Aarhus University.
- Molecular Biology from Aarhus University.
- Molecular Medicine from Aarhus University.

### 4.2 Other Bachelor's degrees

Applicants with a Bachelor's degree, Professional Bachelor's degree or equivalent from Danish or international universities other than those listed in 4.1 are qualified for admission to the MSc Programme in Biochemistry if the programme includes the following:

- A minimum of 60 ECTS from formal classes within chemistry and biochemistry/molecular biology of which a minimum of 30 ECTS must be in chemistry and 22.5 ECTS in biochemistry/molecular biology.
- In total, the applicant must have a minimum of 30 ECTS that stem from courses with experimental laboratory exercises.

Subject elements in protein chemistry or biophysical chemistry may be counted either as chemistry or biochemistry/molecular biology.

### 4.3 Other applicants

The Faculty may also admit applicants who, after an individual academic assessment, are assessed to possess educational qualifications equivalent to those required in Subclauses 4.1-2.

### 4.4 Language requirements

Applicants must be able to document English proficiency corresponding to one of the following:

- An entrance examination with an English level comparable to the Danish level B or higher from a country within EU/EEA or Switzerland
- International Baccalaureate (IB) from an international school
- European Baccalaureate (EB) from one of the approved schools
- English B or A as Single Subject Course in Denmark
- IELTS test score of minimum 6.5 with at least 6.0 in each sub score
- TOEFL test score of minimum 83 with at least 20 in each sub score
- Cambridge Advanced English (CAE) or Cambridge English: Proficiency (CPE) with a minimum score of 180 (C1-level)

### 4.5 Supplementary subject elements

The qualifications of an applicant to the MSc programme are assessed exclusively on the basis of the qualifying Bachelor's degree. Supplementary subject elements passed between the completion of the Bachelor's programme and the admission to the MSc programme cannot be included in the overall assessment.

However, subject elements passed before the completion of the Bachelor's programme may be included in the overall assessment. This includes subject elements completed as continuing education as well as subject elements completed as part of a former higher education programme. A maximum of 30 ECTS supplementary subject elements can be included in the overall assessment.

Subject elements passed before completing the Bachelor's programme which are to form part of the MSc programme to which the student has a legal right of admission (§15-courses) cannot be included in the overall assessment.

## 5 Prioritisation of applicants

With a Bachelor's degree in Biochemistry from University of Copenhagen the student is granted reserved access and guaranteed a place on the MSc Programme in Biochemistry if the student applies in time to begin the MSc Programme within three years of the completion of the Bachelor's degree.

If the number of qualified applicants to the programme exceeds the number of places available, applicants will be prioritised according to the following criteria:

- Total number of ECTS in relevant courses\*
- Grades in relevant courses\*

\*Relevant courses include courses in metabolism, enzymology, protein science, cell biology, organic chemistry, physical chemistry and documented laboratory experience.

## 6 Structure of the programme

The compulsory subject elements, restricted elective subject elements and the thesis constitute the central parts of the programme (Section 30 of the Ministerial Order on Bachelor and Master's Programmes (Candidatus) at Universities).

### 6.1 Programme components

The programme is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

#### 6.1.1 Compulsory subject elements

| All of the following subject elements are to be covered (22.5 ECTS): |                                            |            |          |
|----------------------------------------------------------------------|--------------------------------------------|------------|----------|
| Course Code                                                          | Course Title                               | Block      | ECTS     |
| NBIK25000U                                                           | Principal Subjects in Biochemical Research | Block 1+2  | 15 ECTS  |
| NBIK13014U                                                           | Major Subject Project                      | Blocks 1-5 | 7.5 ECTS |

#### 6.1.2 Restricted elective subject elements

| 22.5 ECTS are to be covered as subject elements from the following list: |                               |         |          |
|--------------------------------------------------------------------------|-------------------------------|---------|----------|
| Course Code                                                              | Course Title                  | Block   | ECTS     |
| NBIA05008U                                                               | Biological Sequence Analysis  | Block 1 | 7.5 ECTS |
| NBIK10015U                                                               | Cell Cycle Control and Cancer | Block 1 | 7.5 ECTS |
| NBIK10017U                                                               | RNA Biology                   | Block 1 | 7.5 ECTS |

|                                                                          |                                                          |           |          |
|--------------------------------------------------------------------------|----------------------------------------------------------|-----------|----------|
| 22.5 ECTS are to be covered as subject elements from the following list: |                                                          |           |          |
| NBIK26000U                                                               | Advanced Bacteriology                                    | Block 1   | 7.5 ECTS |
| NBIK15006U                                                               | Advanced Cell Biology                                    | Block 1   | 7.5 ECTS |
| NBIK15017U                                                               | Theoretical Molecular Genetics                           | Block 1   | 7.5 ECTS |
| NBIK22003U                                                               | Protein Research Lab – Intrinsically Disordered Proteins | Block 1   | 7.5 ECTS |
| NBIA05014U                                                               | Structural Bioinformatics                                | Block 2   | 7.5 ECTS |
| NBIK10020U                                                               | Developmental Biology                                    | Block 2   | 7.5 ECTS |
| NBIK13005U                                                               | Experimental Higher Model Organisms                      | Block 2   | 7.5 ECTS |
| NBIK14034U                                                               | Molecular Neurobiology                                   | Block 2   | 7.5 ECTS |
| NBIK26002U                                                               | Virus, Microbe and Host                                  | Block 2   | 7.5 ECTS |
| NBIK15009U                                                               | Cellular Signalling in Health and Disease                | Block 2   | 7.5 ECTS |
| NBIK15010U                                                               | Epigenetics and Cell Differentiation                     | Block 2   | 7.5 ECTS |
| NBIK15013U                                                               | Genome Sequence Analysis                                 | Block 2   | 7.5 ECTS |
| NBIK16001U                                                               | NMR spectroscopy                                         | Block 2   | 7.5 ECTS |
| NBIK17001U                                                               | Dynamic Models in Molecular Biology                      | Block 2   | 7.5 ECTS |
| NKEA06015U                                                               | Crystallography                                          | Block 2   | 7.5 ECTS |
| LBIK10207U                                                               | Synthetic Biology                                        | Block 3   | 7.5 ECTS |
| NBIK14035U                                                               | Medical Bacteriology                                     | Block 3   | 7.5 ECTS |
| NBIK15014U                                                               | Human Genetics                                           | Block 3   | 7.5 ECTS |
| NBIK24002U                                                               | Molecular Mechanisms in Metabolic Disease                | Block 3   | 7.5 ECTS |
| NBIK22004U                                                               | Integrative Structural Biology                           | Block 3+4 | 15 ECTS  |
| NBIK11009U                                                               | Experimental Cell Biology                                | Block 4   | 15 ECTS  |
| NBIK13017U                                                               | Molecular Biotechnology                                  | Block 4   | 7.5 ECTS |
| NBIK23000U                                                               | Data Science for Genomics                                | Block 4   | 7.5 ECTS |
| -                                                                        | Thesis Preparation Project                               | Block 1-5 | 7.5 ECTS |

### 6.1.3 Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.1.4 Projects.

### 6.1.4 Projects

- Projects outside the course scope (PUK) may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice (PIP) may be included in the elective section of the programme with 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects (PREP) may be included in the elective and/or restricted elective section of the programme with up to 7.5 ECTS. PREP may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.
- PUK, PIP and PREP may not exceed 30 ECTS of the programme.

### 6.1.5 Thesis

The MSc Programme in Biochemistry includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

### **6.1.6 Academic Mobility**

The curriculum makes it possible to follow subject elements outside the Faculty of Science.

The academic mobility for the MSc Programme in Biochemistry is placed in block 3+4 of the 1<sup>st</sup> year.

Academic mobility requires that the student follows the rules and regulations regarding pre-approval and credit transfer.

In addition, the student has the possibility to arrange similar academic mobility in other parts of the programme.

## **7 Exemptions**

In exceptional circumstances, the study board may grant exemptions from the rules in the curriculum specified solely by the Faculty of Science.

## **8 Commencement etc.**

### **8.1 Validity**

This subject specific section of the curriculum applies to all students enrolled in the programme – see however Appendix 2.

### **8.2 Transfer**

Students enrolled on previous curricula may be transferred to the new one as per the applicable transfer regulations or according to an individual credit transfer by the study board.

### **8.3 Amendment**

The curriculum may be amended once a year so that any changes come into effect at the beginning of the academic year. Amendments must be proposed by the study board and approved by the Dean.

Notification about amendments that tighten the admission requirements for the programme will be published online at [www.science.ku.dk](http://www.science.ku.dk) one year before they come into effect.

If amendments are made to this curriculum, an interim arrangement may be added if necessary to allow students to complete their MSc Programme according to the amended curriculum.

## Appendix 1 The recommended academic progression

The table illustrates the recommended academic progression. The student is allowed to plan an alternative progression within the applicable rules.

### Tables for students admitted to the programme in September (summer):

**Table – MSc Programme in Biochemistry**

| Period   | Block 1                                    | Block 2  | Block 3             | Block 4               |
|----------|--------------------------------------------|----------|---------------------|-----------------------|
| 1st year | Principal Subjects in Biochemical Research |          | Restricted elective | Restricted elective   |
|          | Elective                                   | Elective | Restricted elective | Major Subject Project |
| 2nd year | Thesis                                     |          |                     |                       |

### Tables for students admitted to the programme in February (winter):

**Table – MSc Programme in Biochemistry\***

| Period   | Block 3  | Block 4             | Block 1                                    | Block 2             |
|----------|----------|---------------------|--------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | Principal Subjects in Biochemical Research |                     |
|          | Elective | Restricted elective | Major Subject Project                      | Restricted elective |
| 2nd year | Thesis   |                     |                                            |                     |

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

## Appendix 2 Interim arrangements

The Shared Section that applies to all BSc, part-time MSc and MSc Programmes at the Faculty of Science applies to all students.

The interim arrangements below only consist of parts where the current curriculum differs from the rules and regulations that were previously valid. Therefore, if information about relevant rules and regulations are missing, it can be found in the curriculum above.

### 1 General changes for students admitted in the academic year 2025/26

Students admitted to the MSc Programme in the academic year 2025/26 must finish the programme as listed in the curriculum above with the following exceptions.

#### Restricted elective subject elements within the major subject

| 37.5 ECTS are to be covered as subject elements from the following list:           |                         |               |          |
|------------------------------------------------------------------------------------|-------------------------|---------------|----------|
| Restricted elective subject elements offered as part of the curriculum (see above) |                         |               |          |
| Course Code                                                                        | Course Title            | Block         | ECTS     |
| NBIK15003U                                                                         | Advanced Bacteriology 1 | Discontinued* | 7.5 ECTS |
| NBIK15005U                                                                         | Advanced Bacteriology 2 | Discontinued* | 7.5 ECTS |

\*See discontinued courses below.

### 2 General changes for students admitted in the academic year 2024/25

Students admitted to the MSc Programme in the academic year 2024/25 must finish the programme as listed in the curriculum above with the following exceptions.

The MSc Programme in Biochemistry consists of the following elements:

- Specialisation, 120 ECTS, including the thesis.

The student must choose one of the following specialisations:

- Molecular Cell Biology and Immunology.
- Molecular Genetics.
- Molecular Microbiology.
- Protein Chemistry.

#### 2.1 Molecular Cell Biology and Immunology

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

Table– Molecular Cell Biology and Immunology

| Period   | Block 1                                                           | Block 2  | Block 3             | Block 4               |
|----------|-------------------------------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Molecular Cell Biology and Immunology</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                                          | Elective | Restricted elective | Major Subject Project |

| Period   | Block 1 | Block 2 | Block 3 | Block 4 |
|----------|---------|---------|---------|---------|
| 2nd year | Thesis  |         |         |         |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Molecular Cell Biology and Immunology\***

| Period   | Block 3  | Block 4             | Block 1                                                           | Block 2             |
|----------|----------|---------------------|-------------------------------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Molecular Cell Biology and Immunology</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                                             | Restricted elective |
| 2nd year | Thesis   |                     |                                                                   |                     |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

### Restricted elective subject elements

| 22.5 ECTS are to be covered as subject elements from the following list: |                                                      |           |          |
|--------------------------------------------------------------------------|------------------------------------------------------|-----------|----------|
| Course Code                                                              | Course Title                                         | Block     | ECTS     |
| NBIK15006U                                                               | Advanced Cell Biology                                | Block 1   | 7.5 ECTS |
| NBIK10015U                                                               | Cell Cycle Control and Cancer                        | Block 1   | 7.5 ECTS |
| NBIK10017U                                                               | RNA Biology                                          | Block 1   | 7.5 ECTS |
| NBIK15009U                                                               | Cellular Signalling in Health and Disease            | Block 2   | 7.5 ECTS |
| NBIK10020U                                                               | Developmental Biology                                | Block 2   | 7.5 ECTS |
| NBIK14034U                                                               | Molecular Neurobiology                               | Block 2   | 7.5 ECTS |
| NBIK15010U                                                               | Epigenetics and Cell Differentiation                 | Block 2   | 7.5 ECTS |
| NBIA08004U                                                               | Evolutionary Medicine                                | Block 3   | 7.5 ECTS |
| SMOK14003U                                                               | Chronic Inflammation. From Basic Research to Therapy | Block 3   | 7.5 ECTS |
| NBIK20005U                                                               | Cellular and Integrative Physiology                  | Block 3   | 7.5 ECTS |
| NBIK24002U                                                               | Molecular Mechanisms in Metabolic Disease            | Block 3   | 7.5 ECTS |
| NBIK13017U                                                               | Molecular Biotechnology                              | Block 4   | 7.5 ECTS |
| -                                                                        | Thesis Preparation Project                           | Block 1-5 | 7.5 ECTS |

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.1.4 Projects.

### Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

### Thesis

The MSc Programme in Biochemistry with a specialisation in Molecular Cell Biology and Immunology includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

## 2.2 Molecular Genetics

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

**Table – Molecular Genetics**

| Period   | Block 1                                        | Block 2  | Block 3             | Block 4               |
|----------|------------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Molecular Genetics</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                       | Elective | Restricted elective | Major Subject Project |
| 2nd year | Thesis                                         |          |                     |                       |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Molecular Genetics\***

| Period   | Block 3  | Block 4             | Block 1                                        | Block 2             |
|----------|----------|---------------------|------------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Molecular Genetics</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                          | Restricted elective |
| 2nd year | Thesis   |                     |                                                |                     |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

### Restricted elective subject elements

| 22.5 ECTS are to be covered as subject elements from the following list: |                                      |           |          |
|--------------------------------------------------------------------------|--------------------------------------|-----------|----------|
| Course Code                                                              | Course Title                         | Block     | ECTS     |
| NBIK15017U                                                               | Theoretical Molecular Genetics       | Block 1   | 7.5 ECTS |
| NBIK15011U                                                               | Experimental Molecular Genetics      | Block 1   | 7.5 ECTS |
| NBIK10017U                                                               | RNA Biology                          | Block 1   | 7.5 ECTS |
| NBIK10015U                                                               | Cell Cycle Control and Cancer        | Block 1   | 7.5 ECTS |
| NBIK10020U                                                               | Developmental Biology                | Block 2   | 7.5 ECTS |
| NBIK15013U                                                               | Genome Sequence Analysis             | Block 2   | 7.5 ECTS |
| NBIK13005U                                                               | Experimental Higher Model Organisms  | Block 2   | 7.5 ECTS |
| NBIK15010U                                                               | Epigenetics and Cell Differentiation | Block 2   | 7.5 ECTS |
| NBIK15014U                                                               | Human Genetics                       | Block 3   | 7.5 ECTS |
| NBIA09043U                                                               | Population Genetics                  | Block 3   | 7.5 ECTS |
| LBIK10207U                                                               | Synthetic Biology                    | Block 3   | 7.5 ECTS |
| NBIK13017U                                                               | Molecular Biotechnology              | Block 4   | 7.5 ECTS |
| SGBK22000U                                                               | Forensic Biology                     | Block 5   | 7.5 ECTS |
| -                                                                        | Thesis Preparation Project           | Block 1-5 | 7.5 ECTS |

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.2.4 Projects.

### Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

### Thesis

The MSc Programme in Biochemistry with a specialisation in Molecular Genetics includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

### 2.3 Molecular Microbiology

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS

- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

**Table – Molecular Microbiology**

| Period   | Block 1                                            | Block 2  | Block 3             | Block 4               |
|----------|----------------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Molecular Microbiology</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                           | Elective | Restricted elective | Major Subject Project |
| 2nd year | Thesis                                             |          |                     |                       |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Molecular Microbiology\***

| Period   | Block 3  | Block 4             | Block 1                                            | Block 2             |
|----------|----------|---------------------|----------------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Molecular Microbiology</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                              | Restricted elective |
| 2nd year | Thesis   |                     |                                                    |                     |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

### Restricted elective subject elements

| 22.5 ECTS are to be covered as subject elements from the following list: |                                                                        |         |          |
|--------------------------------------------------------------------------|------------------------------------------------------------------------|---------|----------|
| Course Code                                                              | Course Title                                                           | Block   | ECTS     |
| NBIK26000U                                                               | Advanced Bacterology                                                   | Block 1 | 7.5 ECTS |
| NBIA05008U                                                               | Biological Sequence Analysis                                           | Block 1 | 7.5 ECTS |
| NBIK15016U                                                               | The Human Microbiome                                                   | Block 1 | 7.5 ECTS |
| NFOK22000U                                                               | Microbiological Food Safety and Quality: Control, Cases and Practicals | Block 2 | 7.5 ECTS |
| NBIK26002U                                                               | Virus, Microbe and Host                                                | Block 2 | 7.5 ECTS |
| NBIK15013U                                                               | Genome Sequence Analysis                                               | Block 2 | 7.5 ECTS |
| NBIK14009U                                                               | Protists – Eukaryotic Microbiology                                     | Block 2 | 7.5 ECTS |
| NBIK17001U                                                               | Dynamic Models in Molecular Biology                                    | Block 2 | 7.5 ECTS |
| NBIK14035U                                                               | Medical Bacteriology                                                   | Block 3 | 7.5 ECTS |
| LBIK10136U                                                               | Heterologous Expression                                                | Block 3 | 15 ECTS  |
| NBIK16003U                                                               | Marine Microbiology and Virology                                       | Block 3 | 7.5 ECTS |
| NBIK14016U                                                               | Experimental Design and Statistical Methods in Biology                 | Block 3 | 7.5 ECTS |
| NBIK13017U                                                               | Molecular Biotechnology                                                | Block 4 | 7.5 ECTS |
| NBIK16000U                                                               | The Human Microbiome - Experiments                                     | Block 4 | 7.5 ECTS |
| NBIK23000U                                                               | Data Science for Genomics                                              | Block 4 | 7.5 ECTS |

|            |                            |               |          |
|------------|----------------------------|---------------|----------|
| NNEK22001U | Metabolomics               | Block 4       | 7.5 ECTS |
|            | Thesis Preparation Project | Block 1-5     | 7.5 ECTS |
| NBIK15003U | Advanced Bacteriology 1    | Discontinued* | 7.5 ECTS |
| NBIK15005U | Advanced Bacteriology 2    | Discontinued* | 7.5 ECTS |

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.3.4 Projects.

### Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

### Thesis

The MSc Programme in Biochemistry with a specialisation in Molecular Microbiology includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

## 2.4 Protein Chemistry

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

**Table – Protein Chemistry**

| Period   | Block 1                                       | Block 2  | Block 3             | Block 4               |
|----------|-----------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Protein Chemistry</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                      | Elective | Restricted elective | Major Subject Project |
| 2nd year | Thesis                                        |          |                     |                       |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Protein Chemistry\***

| Period   | Block 3  | Block 4             | Block 1                                       | Block 2             |
|----------|----------|---------------------|-----------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Protein Chemistry</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                         | Restricted elective |
| 2nd year | Thesis   |                     |                                               |                     |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

### Restricted elective subject elements

22.5 ECTS are to be covered as subject elements from the following list:

| Course Code | Course Title                                             | Block         | ECTS     |
|-------------|----------------------------------------------------------|---------------|----------|
| NBIK22003U  | Protein Research Lab – Intrinsically Disordered Proteins | Block 1       | 7.5 ECTS |
| NKEA06015U  | Crystallography                                          | Block 2       | 7.5 ECTS |
| NBIA05014U  | Structural Bioinformatics                                | Block 2       | 7.5 ECTS |
| NBIK16001U  | NMR Spectroscopy                                         | Block 2       | 7.5 ECTS |
| NFYK14039U  | Radioactive Isotopes and Ionizing Radiation              | Block 3       | 7.5 ECTS |
| NBIK22004U  | Integrative Structural Biology                           | Block 3+4     | 15 ECTS  |
| NBIK13017U  | Molecular Biotechnology                                  | Block 4       | 7.5 ECTS |
| NBIK23000U  | Data Science for Genomics                                | Block 4       | 7.5 ECTS |
|             | Thesis Preparation Project                               | Block 1-5     | 7.5 ECTS |
| NBIK22002U  | Advanced Protein Science 1 – Biophysical Methods         | Discontinued* | 7.5 ECTS |

\*See discontinued courses below

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.4.4 Projects.

### Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may

not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

### Thesis

The MSc Programme in Biochemistry with a specialisation in Protein Chemistry includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

### 3 General changes for students admitted in the academic year 2023/24

Students admitted to the MSc Programme in the academic year 2023/24 must finish the programme as listed in the curriculum above with the following exceptions.

#### 3.1 Molecular Cell Biology and Immunology

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

**Table– Molecular Cell Biology and Immunology**

| Period   | Block 1                                                           | Block 2  | Block 3             | Block 4               |
|----------|-------------------------------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Molecular Cell Biology and Immunology</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                                          | Elective | Restricted elective | Major Subject Project |
| 2nd year | Thesis                                                            |          |                     |                       |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Molecular Cell Biology and Immunology\***

| Period   | Block 3  | Block 4             | Block 1                                                           | Block 2             |
|----------|----------|---------------------|-------------------------------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Molecular Cell Biology and Immunology</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                                             | Restricted elective |
| 2nd year | Thesis   |                     |                                                                   |                     |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

#### Restricted elective subject elements

| 22.5 ECTS are to be covered as subject elements from the following list: |                       |         |          |
|--------------------------------------------------------------------------|-----------------------|---------|----------|
| Course Code                                                              | Course Title          | Block   | ECTS     |
| NBIK15006U                                                               | Advanced Cell Biology | Block 1 | 7.5 ECTS |

|            |                                                                               |               |          |
|------------|-------------------------------------------------------------------------------|---------------|----------|
| NBIK10015U | Cell Cycle Control and Cancer                                                 | Block 1       | 7.5 ECTS |
| NBIK10017U | RNA Biology                                                                   | Block 1       | 7.5 ECTS |
| NBIK15009U | Cellular Signalling in Health and Disease                                     | Block 2       | 7.5 ECTS |
| NBIK10020U | Developmental Biology                                                         | Block 2       | 7.5 ECTS |
| NBIK14034U | Molecular Neurobiology                                                        | Block 2       | 7.5 ECTS |
| NBIK15010U | Epigenetics and Cell Differentiation                                          | Block 2       | 7.5 ECTS |
| NBIA08004U | Evolutionary Medicine                                                         | Block 3       | 7.5 ECTS |
| SMOK14003U | Chronic Inflammation. From Basic Research to Therapy                          | Block 3       | 7.5 ECTS |
| NBIK20005U | Cellular and Integrative Physiology                                           | Block 3       | 7.5 ECTS |
| NBIK24002U | Molecular Mechanisms in Metabolic Disease                                     | Block 3       | 7.5 ECTS |
| NBIK13017U | Molecular Biotechnology                                                       | Block 4       | 7.5 ECTS |
| -          | Thesis Preparation Project                                                    | Block 1-5     | 7.5 ECTS |
| NBIK23001U | Hot Topics in Physiology – Molecular Mechanisms in Lifestyle-Related Diseases | Discontinued* | 7.5 ECTS |

\*See discontinued courses below

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.1.4 Projects.

### Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

### Thesis

The MSc Programme in Biochemistry with a specialisation in Molecular Cell Biology and Immunology includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

### 3.2 Molecular Genetics

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

**Table – Molecular Genetics**

| Period   | Block 1                                        | Block 2  | Block 3             | Block 4               |
|----------|------------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Molecular Genetics</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                       | Elective | Restricted elective | Major Subject Project |
| 2nd year | Thesis                                         |          |                     |                       |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Molecular Genetics\***

| Period   | Block 3  | Block 4             | Block 1                                        | Block 2             |
|----------|----------|---------------------|------------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Molecular Genetics</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                          | Restricted elective |
| 2nd year | Thesis   |                     |                                                |                     |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

### Restricted elective subject elements

| 22.5 ECTS are to be covered as subject elements from the following list: |                                      |           |          |
|--------------------------------------------------------------------------|--------------------------------------|-----------|----------|
| Course Code                                                              | Course Title                         | Block     | ECTS     |
| NBIK15017U                                                               | Theoretical Molecular Genetics       | Block 1   | 7.5 ECTS |
| NBIK15011U                                                               | Experimental Molecular Genetics      | Block 1   | 7.5 ECTS |
| NBIK10017U                                                               | RNA Biology                          | Block 1   | 7.5 ECTS |
| NBIK10015U                                                               | Cell Cycle Control and Cancer        | Block 1   | 7.5 ECTS |
| NBIK10020U                                                               | Developmental Biology                | Block 2   | 7.5 ECTS |
| NBIK15013U                                                               | Genome Sequence Analysis             | Block 2   | 7.5 ECTS |
| NBIK13005U                                                               | Experimental Higher Model Organisms  | Block 2   | 7.5 ECTS |
| NBIK15010U                                                               | Epigenetics and Cell Differentiation | Block 2   | 7.5 ECTS |
| NBIK15014U                                                               | Human Genetics                       | Block 3   | 7.5 ECTS |
| NBIA09043U                                                               | Population Genetics                  | Block 3   | 7.5 ECTS |
| LBIK10207U                                                               | Synthetic Biology                    | Block 3   | 7.5 ECTS |
| NBIK13017U                                                               | Molecular Biotechnology              | Block 4   | 7.5 ECTS |
| SGBK22000U                                                               | Forensic Biology                     | Block 5   | 7.5 ECTS |
| -                                                                        | Thesis Preparation Project           | Block 1-5 | 7.5 ECTS |

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.2.4 Projects.

### Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

### Thesis

The MSc Programme in Biochemistry with a specialisation in Molecular Genetics includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

### 3.3 Molecular Microbiology

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

**Table – Molecular Microbiology**

| Period   | Block 1                                            | Block 2  | Block 3             | Block 4               |
|----------|----------------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Molecular Microbiology</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                           | Elective | Restricted elective | Major Subject Project |
| 2nd year | Thesis                                             |          |                     |                       |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Molecular Microbiology\***

| Period   | Block 3  | Block 4             | Block 1                                            | Block 2             |
|----------|----------|---------------------|----------------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Molecular Microbiology</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                              | Restricted elective |
| 2nd year | Thesis   |                     |                                                    |                     |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

### Restricted elective subject elements

| 22.5 ECTS are to be covered as subject elements from the following list: |                                                                        |               |          |
|--------------------------------------------------------------------------|------------------------------------------------------------------------|---------------|----------|
| Course Code                                                              | Course Title                                                           | Block         | ECTS     |
| NBIK26000U                                                               | Advanced Bacterology                                                   | Block 1       | 7.5 ECTS |
| NBIA05008U                                                               | Biological Sequence Analysis                                           | Block 1       | 7.5 ECTS |
| NBIK15016U                                                               | The Human Microbiome                                                   | Block 1       | 7.5 ECTS |
| NFOK22000U                                                               | Microbiological Food Safety and Quality: Control, Cases and Practicals | Block 2       | 7.5 ECTS |
| NBIK26002U                                                               | Virus, Microbe and Host                                                | Block 2       | 7.5 ECTS |
| NBIK15013U                                                               | Genome Sequence Analysis                                               | Block 2       | 7.5 ECTS |
| NBIK14009U                                                               | Protists – Eukaryotic Microbiology                                     | Block 2       | 7.5 ECTS |
| NBIK17001U                                                               | Dynamic Models in Molecular Biology                                    | Block 2       | 7.5 ECTS |
| NBIK14035U                                                               | Medical Bacteriology                                                   | Block 3       | 7.5 ECTS |
| LBIK10136U                                                               | Heterologous Expression                                                | Block 3       | 15 ECTS  |
| NBIK16003U                                                               | Marine Microbiology and Virology                                       | Block 3       | 7.5 ECTS |
| NBIK14016U                                                               | Experimental Design and Statistical Methods in Biology                 | Block 3       | 7.5 ECTS |
| NBIK13017U                                                               | Molecular Biotechnology                                                | Block 4       | 7.5 ECTS |
| NBIK16000U                                                               | The Human Microbiome - Experiments                                     | Block 4       | 7.5 ECTS |
| NBIK23000U                                                               | Data Science for Genomics                                              | Block 4       | 7.5 ECTS |
| NNEK22001U                                                               | Metabolomics                                                           | Block 4       | 7.5 ECTS |
|                                                                          | Thesis Preparation Project                                             | Block 1-5     | 7.5 ECTS |
| NBIK15003U                                                               | Advanced Bacteriology 1                                                | Discontinued* | 7.5 ECTS |
| NBIK15005U                                                               | Advanced Bacteriology 2                                                | Discontinued* | 7.5 ECTS |

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.3.4 Projects.

### Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

### Thesis

The MSc Programme in Biochemistry with a specialisation in Molecular Microbiology includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

### 3.4 Protein Chemistry

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

**Table – Protein Chemistry**

| Period   | Block 1                                       | Block 2  | Block 3             | Block 4               |
|----------|-----------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Protein Chemistry</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                      | Elective | Restricted elective | Major Subject Project |
| 2nd year | Thesis                                        |          |                     |                       |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Protein Chemistry\***

| Period   | Block 3  | Block 4             | Block 1                                       | Block 2             |
|----------|----------|---------------------|-----------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Protein Chemistry</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                         | Restricted elective |
| 2nd year | Thesis   |                     |                                               |                     |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

### Restricted elective subject elements

| 22.5 ECTS are to be covered as subject elements from the following list: |                                                          |               |          |
|--------------------------------------------------------------------------|----------------------------------------------------------|---------------|----------|
| Course Code                                                              | Course Title                                             | Block         | ECTS     |
| NBIK22003U                                                               | Protein Research Lab – Intrinsically Disordered Proteins | Block 1       | 7.5 ECTS |
| NKEA06015U                                                               | Crystallography                                          | Block 2       | 7.5 ECTS |
| NBIA05014U                                                               | Structural Bioinformatics                                | Block 2       | 7.5 ECTS |
| NBIK16001U                                                               | NMR Spectroscopy                                         | Block 2       | 7.5 ECTS |
| NFYK14039U                                                               | Radioactive Isotopes and Ionizing Radiation              | Block 3       | 7.5 ECTS |
| NBIK22004U                                                               | Integrative Structural Biology                           | Block 3+4     | 15 ECTS  |
| NBIK13017U                                                               | Molecular Biotechnology                                  | Block 4       | 7.5 ECTS |
| NBIK23000U                                                               | Data Science for Genomics                                | Block 4       | 7.5 ECTS |
|                                                                          | Thesis Preparation Project                               | Block 1-5     | 7.5 ECTS |
| NBIK22002U                                                               | Advanced Protein Science 1 – Biophysical Methods         | Discontinued* | 7.5 ECTS |

\*See discontinued courses below

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.4.4 Projects.

### Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

### Thesis

The MSc Programme in Biochemistry with a specialisation in Protein Chemistry includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

### 4 General changes for students admitted in the academic year 2022/23

Students admitted to the MSc Programme in the academic year 2022/23 must finish the programme as listed in the curriculum above with the following exceptions.

#### 4.1 Molecular Cell Biology and Immunology

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS

- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

**Table– Molecular Cell Biology and Immunology**

| Period   | Block 1                                                           | Block 2  | Block 3             | Block 4               |
|----------|-------------------------------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Molecular Cell Biology and Immunology</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                                          | Elective | Restricted elective | Major Subject Project |
| 2nd year | Thesis                                                            |          |                     |                       |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Molecular Cell Biology and Immunology\***

| Period   | Block 3  | Block 4             | Block 1                                                           | Block 2             |
|----------|----------|---------------------|-------------------------------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Molecular Cell Biology and Immunology</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                                             | Restricted elective |
| 2nd year | Thesis   |                     |                                                                   |                     |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

### Restricted elective subject elements

| 22.5 ECTS are to be covered as subject elements from the following list: |                                                      |         |          |
|--------------------------------------------------------------------------|------------------------------------------------------|---------|----------|
| Course Code                                                              | Course Title                                         | Block   | ECTS     |
| NBIK15006U                                                               | Advanced Cell Biology                                | Block 1 | 7.5 ECTS |
| NBIK10015U                                                               | Cell Cycle Control and Cancer                        | Block 1 | 7.5 ECTS |
| NBIK10017U                                                               | RNA Biology                                          | Block 1 | 7.5 ECTS |
| NBIK15009U                                                               | Cellular Signalling in Health and Disease            | Block 2 | 7.5 ECTS |
| NBIK10020U                                                               | Developmental Biology                                | Block 2 | 7.5 ECTS |
| NBIK14034U                                                               | Molecular Neurobiology                               | Block 2 | 7.5 ECTS |
| NBIK15010U                                                               | Epigenetics and Cell Differentiation                 | Block 2 | 7.5 ECTS |
| NBIA08004U                                                               | Evolutionary Medicine                                | Block 3 | 7.5 ECTS |
| SMOK14003U                                                               | Chronic Inflammation. From Basic Research to Therapy | Block 3 | 7.5 ECTS |
| NBIK20005U                                                               | Cellular and Integrative Physiology                  | Block 3 | 7.5 ECTS |
| NBIK24002U                                                               | Molecular Mechanisms in Metabolic Disease            | Block 3 | 7.5 ECTS |

|            |                                                                               |               |          |
|------------|-------------------------------------------------------------------------------|---------------|----------|
| NBIK13017U | Molecular Biotechnology                                                       | Block 4       | 7.5 ECTS |
| -          | Thesis Preparation Project                                                    | Block 1-5     | 7.5 ECTS |
| NBIK22000U | Advanced Topics in Physiology – Lifestyle Related Diseases                    | Discontinued* | 7.5 ECTS |
| NBIK23001U | Hot Topics in Physiology – Molecular Mechanisms in Lifestyle-Related Diseases | Discontinued* | 7.5 ECTS |

\*See discontinued courses below

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.1.4 Projects.

### Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

### Thesis

The MSc Programme in Biochemistry with a specialisation in Molecular Cell Biology and Immunology includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

## 4.2 Molecular Genetics

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

**Table – Molecular Genetics**

| Period   | Block 1                                        | Block 2  | Block 3             | Block 4               |
|----------|------------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Molecular Genetics</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                       | Elective | Restricted elective | Major Subject Project |

| Period   | Block 1 | Block 2 | Block 3 | Block 4 |
|----------|---------|---------|---------|---------|
| 2nd year | Thesis  |         |         |         |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Molecular Genetics\***

| Period   | Block 3  | Block 4             | Block 1                                        | Block 2             |
|----------|----------|---------------------|------------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Molecular Genetics</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                          | Restricted elective |
| 2nd year | Thesis   |                     |                                                |                     |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

### Restricted elective subject elements

| 22.5 ECTS are to be covered as subject elements from the following list: |                                      |           |          |
|--------------------------------------------------------------------------|--------------------------------------|-----------|----------|
| Course Code                                                              | Course Title                         | Block     | ECTS     |
| NBIK15017U                                                               | Theoretical Molecular Genetics       | Block 1   | 7.5 ECTS |
| NBIK15011U                                                               | Experimental Molecular Genetics      | Block 1   | 7.5 ECTS |
| NBIK10017U                                                               | RNA Biology                          | Block 1   | 7.5 ECTS |
| NBIK10015U                                                               | Cell Cycle Control and Cancer        | Block 1   | 7.5 ECTS |
| NBIK10020U                                                               | Developmental Biology                | Block 2   | 7.5 ECTS |
| NBIK15013U                                                               | Genome Sequence Analysis             | Block 2   | 7.5 ECTS |
| NBIK13005U                                                               | Experimental Higher Model Organisms  | Block 2   | 7.5 ECTS |
| NBIK15010U                                                               | Epigenetics and Cell Differentiation | Block 2   | 7.5 ECTS |
| NBIK15014U                                                               | Human Genetics                       | Block 3   | 7.5 ECTS |
| NBIA09043U                                                               | Population Genetics                  | Block 3   | 7.5 ECTS |
| LBIK10207U                                                               | Synthetic Biology                    | Block 3   | 7.5 ECTS |
| NBIK13017U                                                               | Molecular Biotechnology              | Block 4   | 7.5 ECTS |
| SGBK22000U                                                               | Forensic Biology                     | Block 5   | 7.5 ECTS |
| -                                                                        | Thesis Preparation Project           | Block 1-5 | 7.5 ECTS |

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.

- Projects. See 6.2.4 Projects.

## Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

## Thesis

The MSc Programme in Biochemistry with a specialisation in Molecular Genetics includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

### 4.3 Molecular Microbiology

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

**Table – Molecular Microbiology**

| Period   | Block 1                                            | Block 2  | Block 3             | Block 4               |
|----------|----------------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Molecular Microbiology</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                           | Elective | Restricted elective | Major Subject Project |
| 2nd year | Thesis                                             |          |                     |                       |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Molecular Microbiology\***

| Period   | Block 3  | Block 4             | Block 1                                            | Block 2             |
|----------|----------|---------------------|----------------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Molecular Microbiology</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                              | Restricted elective |

| Period   | Block 3 | Block 4 | Block 1 | Block 2 |
|----------|---------|---------|---------|---------|
| 2nd year | Thesis  |         |         |         |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

### Restricted elective subject elements

| 22.5 ECTS are to be covered as subject elements from the following list: |                                                                        |               |          |
|--------------------------------------------------------------------------|------------------------------------------------------------------------|---------------|----------|
| Course Code                                                              | Course Title                                                           | Block         | ECTS     |
| NBIK26000U                                                               | Advanced Bacteriology                                                  | Block 1       | 7.5 ECTS |
| NBIA05008U                                                               | Biological Sequence Analysis                                           | Block 1       | 7.5 ECTS |
| NBIK15016U                                                               | The Human Microbiome                                                   | Block 1       | 7.5 ECTS |
| NFOK22000U                                                               | Microbiological Food Safety and Quality: Control, Cases and Practicals | Block 2       | 7.5 ECTS |
| NBIK26002U                                                               | Virus, Microbe and Host                                                | Block 2       | 7.5 ECTS |
| NBIK15013U                                                               | Genome Sequence Analysis                                               | Block 2       | 7.5 ECTS |
| NBIK14009U                                                               | Protists – Eukaryotic Microbiology                                     | Block 2       | 7.5 ECTS |
| NBIK17001U                                                               | Dynamic Models in Molecular Biology                                    | Block 2       | 7.5 ECTS |
| NBIK14035U                                                               | Medical Bacteriology                                                   | Block 3       | 7.5 ECTS |
| LBIK10136U                                                               | Heterologous Expression                                                | Block 3       | 15 ECTS  |
| NBIK16003U                                                               | Marine Microbiology and Virology                                       | Block 3       | 7.5 ECTS |
| NBIK14016U                                                               | Experimental Design and Statistical Methods in Biology                 | Block 3       | 7.5 ECTS |
| NBIK13017U                                                               | Molecular Biotechnology                                                | Block 4       | 7.5 ECTS |
| NBIK16000U                                                               | The Human Microbiome - Experiments                                     | Block 4       | 7.5 ECTS |
| NBIK23000U                                                               | Data Science for Genomics                                              | Block 4       | 7.5 ECTS |
| NNEK22001U                                                               | Metabolomics                                                           | Block 4       | 7.5 ECTS |
| -                                                                        | Thesis Preparation Project                                             | Block 1-5     | 7.5 ECTS |
| NBIA07023U                                                               | Bioinformatics of High Throughput Analysis                             | Discontinued* | 7.5 ECTS |
| NBIK15003U                                                               | Advanced Bacteriology 1                                                | Discontinued* | 7.5 ECTS |
| NBIK15005U                                                               | Advanced Bacteriology 2                                                | Discontinued* | 7.5 ECTS |

\*See discontinued courses below.

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.3.4 Projects.

### Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.

- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

### Thesis

The MSc Programme in Biochemistry with a specialisation in Molecular Microbiology includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

### 4.4 Protein Chemistry

The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS
- Restricted elective subject elements, 22.5 ECTS
- Elective subject elements, 15 ECTS
- Thesis, 60 ECTS

**Table – Protein Chemistry**

| Period   | Block 1                                       | Block 2  | Block 3             | Block 4               |
|----------|-----------------------------------------------|----------|---------------------|-----------------------|
| 1st year | <i>Principal Subject in Protein Chemistry</i> |          | Restricted elective | Restricted elective   |
|          | Elective                                      | Elective | Restricted elective | Major Subject Project |
| 2nd year | Thesis                                        |          |                     |                       |

*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table – Protein Chemistry\***

| Period   | Block 3  | Block 4             | Block 1                                       | Block 2             |
|----------|----------|---------------------|-----------------------------------------------|---------------------|
| 1st year | Elective | Restricted elective | <i>Principal Subject in Protein Chemistry</i> |                     |
|          | Elective | Restricted elective | Major Subject Project                         | Restricted elective |
| 2nd year | Thesis   |                     |                                               |                     |

*Subject elements in italics have been discontinued. See discontinued courses below.*

\*This table is only relevant for students who begin the MSc Programme in February (block 3).

### Restricted elective subject elements

22.5 ECTS are to be covered as subject elements from the following list:

| Course Code | Course Title                                                 | Block         | ECTS     |
|-------------|--------------------------------------------------------------|---------------|----------|
| NBIK22003U  | Protein Research Lab – Intrinsically Disordered Proteins     | Block 1       | 7.5 ECTS |
| NKEA06015U  | Crystallography                                              | Block 2       | 7.5 ECTS |
| NBIA05014U  | Structural Bioinformatics                                    | Block 2       | 7.5 ECTS |
| NBIK16001U  | NMR Spectroscopy                                             | Block 2       | 7.5 ECTS |
| NFYK14039U  | Radioactive Isotopes and Ionizing Radiation                  | Block 3       | 7.5 ECTS |
| NBIK22004U  | Integrative Structural Biology                               | Block 3+4     | 15 ECTS  |
| NBIK13017U  | Molecular Biotechnology                                      | Block 4       | 7.5 ECTS |
| NBIK23000U  | Data Science for Genomics                                    | Block 4       | 7.5 ECTS |
| -           | Thesis Preparation Project                                   | Block 1-5     | 7.5 ECTS |
| NBIK22002U  | Advanced Protein Science 1 – Biophysical Methods             | Discontinued* | 7.5 ECTS |
| NBIK10024U  | Advanced Protein Science 2 – Protein Structure Determination | Discontinued* | 7.5 ECTS |

\*See discontinued courses below

### Elective subject elements

15 ECTS are to be covered as elective subject elements.

- All subject elements at MSc level may be included as elective subject elements in the MSc Programme.
- BSc subject elements corresponding to 7.5 ECTS may be included in the MSc Programme.
- Projects. See 6.4.4 Projects.

### Projects

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 30 ECTS of the programme.

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 4 to the shared section of the curriculum.
- Thesis preparation projects may be included in the elective section or the restricted elective section of the programme with 7.5 ECTS. Thesis preparation projects may not exceed 7.5 ECTS in total of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

### Thesis

The MSc Programme in Biochemistry with a specialisation in Protein Chemistry includes a thesis corresponding to 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

## 5 General changes for students admitted in the academic year 2021/22

Students admitted to the MSc Programme in the academic year 2021/22 must finish the programme as listed in the curriculum above with the following exceptions.

### 5.1 Molecular Genetics

#### Restricted elective subject elements

|                                                                          |
|--------------------------------------------------------------------------|
| 22.5 ECTS are to be covered as subject elements from the following list: |
|--------------------------------------------------------------------------|

|                                                                                                                                 |                     |               |          |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------|----------|
| Restricted elective subject elements offered as part of the specialisation in Molecular Genetics in this curriculum (see above) |                     |               |          |
| SGBK20010U                                                                                                                      | Forensic Geobiology | Discontinued* | 7.5 ECTS |

\*See discontinued courses below

## 5.2 Molecular Microbiology

### Restricted elective subject elements

|                                                                                                                                     |                                            |               |          |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------------|----------|
| 22.5 ECTS are to be covered as subject elements from the following list:                                                            |                                            |               |          |
| Restricted elective subject elements offered as part of the specialisation in Molecular Microbiology in this curriculum (see above) |                                            |               |          |
| LLEK10219U                                                                                                                          | Control of Foodborne Microorganism         | Discontinued* | 7.5 ECTS |
| NBIA07023U                                                                                                                          | Bioinformatics of High Throughput Analysis | Discontinued* | 7.5 ECTS |
| NBIK15003U                                                                                                                          | Advanced Bacteriology 1                    | Discontinued* | 7.5 ECTS |
| NBIK15005U                                                                                                                          | Advanced Bacteriology 2                    | Discontinued* | 7.5 ECTS |

\*See discontinued courses below

## 6 Discontinued courses

| Course Code | Course Title                                     | ECTS | Interim arrangement                                                                                                                                                                                                                                                                                         |
|-------------|--------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NBIK15003U  | Advanced Bacteriology 1                          | 7.5  | <p>The course was restricted elective in the study year 2025/26 and restricted elective on the specialization Molecular Microbiology in the study year 2024/25 and earlier.</p> <p>Offered for the last time: 2025/26</p> <p>The course is identical to Advanced Bacteriology (NBIK26000U), 7,5 ECTS</p>    |
| NBIK15005U  | Advanced Bacteriology 2                          | 7.5  | <p>The course was restricted elective in the study year 2025/26 and restricted elective on the specialization Molecular Microbiology in the study year 2024/25 and earlier.</p> <p>Offered for the last time: 2025/26</p> <p>The course is identical to Virus, Microbe, and Host (NBIK26002U), 7,5 ECTS</p> |
| NBIK22002U  | Advanced Protein Science 1 – Biophysical Methods | 7.5  | <p>The course was restricted elective in the specialisation Protein Chemistry in the academic year 2024/25 and earlier.</p> <p>Offered for the last time: 2022/23<br/>Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2023/24</p>                                                          |

|            |                                                                               |     |                                                                                                                                                                                                                                                                                                                                                     |
|------------|-------------------------------------------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NBIK10024U | Advanced Protein Science 2 – Protein Structure Determination                  | 7.5 | <p>The course was restricted elective in the specialisation Protein Chemistry in the academic year 2022/23 and earlier.</p> <p>Offered for the last time: 2022/23<br/>Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2023/24</p>                                                                                                  |
| NBIK22000U | Advanced Topics in Physiology – Lifestyle Related Diseases                    | 7.5 | <p>The course was restricted elective in the specialisation Molecular Cell Biology and Immunology in the academic year 2022/23 and earlier.</p> <p>Offered for the last time: 2022/23<br/>The course has changed title and is identical to Hot Topics in Physiology - Molecular Mechanisms in Lifestyle-Related Diseases (NBIK23001U), 7.5 ECTS</p> |
| NBIA07023U | Bioinformatics of High Throughput Analysis                                    | 7.5 | <p>The course was restricted elective in the specialisation Molecular Microbiology in the academic year 2022/23 and earlier.</p> <p>Offered for the last time: 2021/22</p> <p>The course has changed title and is identical to Data Science for Genomics (NBIK23000U), 7.5 ECTS</p>                                                                 |
| LLEK10219U | Control of Foodborne Microorganism                                            | 7.5 | <p>The course was restricted elective in the specialisation in Molecular Microbiology in the academic year 2021/22.</p> <p>Offered for the last time: 2021/22<br/>Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2022/23</p>                                                                                                      |
| SGBK20010U | Forensic Geobiology                                                           | 7.5 | <p>The course was restricted elective in the specialisation in Molecular Genetics in the academic year 2021/22.</p> <p>Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2022/23</p>                                                                                                                                                 |
| NBIK23001U | Hot Topics in Physiology - Molecular Mechanisms in Lifestyle-Related Diseases | 7.5 | <p>The course was restricted elective in the specialisation Molecular Cell Biology and Immunology in the academic year 2023/24 and earlier.</p> <p>Offered for the last time: 2023/24</p>                                                                                                                                                           |

|            |                                                            |    |                                                                                                                                                                                                                                                                                                                                                         |
|------------|------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NBIK20003U | Principal Subject in Molecular Cell Biology and Immunology | 15 | <p>The course was compulsory in the specialisation Molecular Cell Biology and Immunology in the academic year 2024/25 and earlier.</p> <p>Offered for the last time: 2024/25.<br/>Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2025/26.</p> <p>The course is replaced by NBIK25000U Principal Subjects in Biochemical Research.</p> |
| NBIK20002U | Principal Subject in Molecular Genetics                    | 15 | <p>The course was compulsory in the specialisation Molecular Genetics in the academic year 2024/25 and earlier.</p> <p>Offered for the last time: 2024/25.<br/>Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2025/26.</p> <p>The course is replaced by NBIK25000U Principal Subjects in Biochemical Research.</p>                    |
| NBIK20000U | Principal Subject in Molecular Microbiology                | 15 | <p>The course was compulsory in the specialisation Molecular Microbiology in the academic year 2024/25 and earlier.</p> <p>Offered for the last time: 2024/25.<br/>Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2025/26.</p> <p>The course is replaced by NBIK25000U Principal Subjects in Biochemical Research.</p>                |
| NBIK20001U | Principal Subject in Protein Chemistry                     | 15 | <p>The course was compulsory in the specialisation Protein Chemistry in the academic year 2024/25 and earlier.</p> <p>Offered for the last time: 2024/25.<br/>Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2025/26.</p> <p>The course is replaced by NBIK25000U Principal Subjects in Biochemical Research.</p>                     |

## Appendix 3 Description of objectives for the thesis

After completing the thesis, the student should have:

### Knowledge about:

- Theory and methods (experimentally and theoretically) within biochemistry including the sub-disciplines molecular cell biology, molecular genetics, molecular microbiology, protein chemistry or neuroscience.
- The strength and limitations of a broad range of experimental methods in biochemistry and chemistry.
- Formulation and analysis of problems.

### Skills in/to:

- Handle model organisms scientifically and safely.
- Select appropriate theories and methods to address one or more problems in a given academic frame within biochemistry including sub-disciplines e.g. molecular cell biology, molecular genetics, molecular microbiology, protein chemistry or neurobiology.
- Communicate an issue clearly and manageable in a biochemical scientific context - both in writing and orally - to the appropriate audience using sound professional biochemical terminology.
- Organize and carry out a major experimental work.
- Select and use a wide range of different methods and in silico analyses and equipment relevant to the experimental biochemical, chemical and biological analysis from their practical laboratory experience and within a given academic frame of biochemistry including biochemistry sub-disciplines e.g. molecular cell biology molecular genetics, molecular microbiology, protein chemistry or neurobiology.
- Work on personal experimental data of biochemical, biological, or chemical in nature, exhaustively and analytically.
- Comply with applicable standards and regulations for laboratory work.
- Use standard and specialized software as well as modern information technology including artificial intelligence for biochemical work.
- Journalize own laboratory work in a level of detail so that others can recreate the results.

### Competences in/to:

- Implement a research-oriented project independently.
- Analyse, interpret and compare their own and others' experimental data from the underlying biochemical, biological and chemical Principles quantitatively and qualitatively.
- Put their own results in scientific biochemical, biological and chemical relevant context.
- Discuss their own data generation and relate their own data to other people's data within the given academic frame of biochemistry including relevant sub-disciplines e.g. molecular cell biology, molecular genetics, molecular microbiology, protein chemistry or neurobiology).
- Critically assess the quality, relevance and probability of their own and others' data.
- Independently develop their knowledge and skills related to biochemistry, chemistry and biology.
- Assess the safety and environmental aspects of the biochemical, biological and chemical work.