



**Programme-specific Section of the
Curriculum for the MSc Programme in
Biology with a minor subject
at the Faculty of Science, University of Copenhagen
2010 (Rev. 2021)**

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1 Title, affiliation and language

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

1.1 Title

The MSc Programme in Biology with a minor subject leads to a Master of Science (MSc) in Biology and minor in [the minor subject] with the Danish title: *Cand.scient. (candidatus/candidata scientiarum) i biologi med sidefag i [the minor subject]*.

It will appear from the diploma that the study programme has been completed as a MSc in two subjects and, provided that the requirements pertaining to the Upper Secondary School course packages (*gymnasiefagpakkerne*) have been met, that academic qualifications (*faglig kompetence*) for teaching at the Danish Upper Secondary School in the subjects have been achieved.

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 objective of the programme is to provide the graduates with an in-depth knowledge within methods and scientific basis of biological research that are of importance for teaching within biological sciences as well as dissemination of biological research. The education is based on the competences the students have acquired during the BSc study programme.

2.2 General programme profile

The student can choose between a large number of different subject elements covering most aspects of modern biology, such as molecular biology, genetics, microbiology, cell biology, physiology, ecology, evolution, conservation, freshwater and marine biology. In addition, the student is allowed to follow supplementary subject elements within other disciplines, such as didactics and dissemination. Thus it is possible to create an individual academic profile.

Biology is the key subject area of the programme.

2.3 General structure of the programme

The MSc Programme is set at 120 or 150 ECTS depending on whether the minor subject is within the field of sciences or not.

Exercise and Sport Sciences is in this regard considered as being outside the field of science.

The MSc Programme in Biology with a minor subject consists of the following elements:

- Basic study program, 120 ECTS including the thesis.
- Extension of the minor subject, 30 ECTS, if the minor subject is outside the field of science.

There are no defined specialisations in this MSc Programme.

2.4 Career opportunities

The MSc Programme in Biology with a minor subject qualifies students to become professionals within business functions and/or areas such as:

- A PhD programme
- Upper secondary school teacher in Biology and the minor subject.
- University College's.
- Non-governmental organisations.
- Biotech-, pharmaceutical and related industries.
- Private consultancies.
- Public administration.
- Publishing industry.

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

On completion of the programme a MSc in Biology with a minor subject has acquired the following:

Knowledge about:

- A broad range of biological disciplines at a scientific level.
- Selected disciplines at a high scientific level.

Skills in/to:

- Use the methods related to different biological disciplines, including operation of relevant scientific equipment.
- Conduct biological investigations, including scientific experiments, in the laboratory or in the field.
- Generate and process complex biological data sets.
- Work scientifically.

Competences in/to:

- Effectively and systematically acquiring new knowledge and study biological subjects at a high scientific level.
- Thinking and working systematically and analytically.
- Assessing and analysing large volumes of data and complex biological relationships.
- Evaluating and analysing biological problems at a high academic level.
- Analysing and evaluating own findings and those of others in a scientific context and applying the results in relevant and commercial and societal contexts.
- Formulating, structuring and conducting research projects, biological development work and other advanced biological tasks.
- Working independently, but also initiating and contributing constructively to interdisciplinary collaboration.
- Effectively and precisely communicating biological knowledge and issues, both in writing and orally.

4 Admission requirements

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

The admission requirements for the MSc Programme in Biology with a minor subject is the same as the admission requirements listed in paragraph 4 in "Programme-specific Section of the Curriculum for the MSc Programme in Biology" supplemented with the following:

- At least 105 ECTS from the Upper Secondary School course package (*gymnasiefagpakken*) are included in the BSc programme.
- At least 45 ECTS from the minor subject is included in the BSc programme.
 - If the minor subject is *within* the field of sciences (with the exception of Exercise and Sport Sciences) the 45 ECTS must be contained in the minor subject Upper Secondary School course package (*den reducerede gymnasiefagpakke*).

5 Prioritisation of applicants

If the number of qualified applicants to the programme exceeds the number of places available the applicants will be prioritised according to paragraph 5 in "Programme-specific Section of the Curriculum for the MSc Programme in Biology".

6 Structure of the programme

The compulsory subject elements, restricted elective subject elements and the thesis constitute the central parts of the programme (Section 21 of the Ministerial Order on Bachelor and Master's Programmes (Candidatus) at Universities).

6.1 Programme components

The programme is set at 120/150 ECTS and consists of the following:

- Compulsory subject elements, 7.5 ECTS
- Restricted elective subject elements, 37.5 ECTS.
- The minor subject, 45 or 75 ECTS depending on whether the minor subject is within the field of sciences or not.
- Thesis, 30 ECTS.

6.1.1 Compulsory subject elements

All of the following subject elements are to be covered (7.5 ECTS):			
• NNDK15000U	Naturfagsdidaktik for Biologi (DidBio)	Block 2	7.5 ECTS

6.1.2 Restricted elective subject elements within the major subject

37.5 ECTS are to be covered as subject elements from the following list:			
• NBIK15006U	Advanced Cell Biology	Block 1	7.5 ECTS
• NBIK15003U	Advanced Bacteriology 1	Block 1	7.5 ECTS
• NBIK14021U	Evolutionary Ecology	Block 1	7.5 ECTS
• NBIA05008U	Biological Sequence Analysis	Block 1	7.5 ECTS
• NBIK21001U	Marine Biology	Block 1	7.5 ECTS
• NBIK21002U	Experimental Marine Biology	Block 1	7.5 ECTS
• NBIK15018U	Danish Natural Habitats, Ecology and Characterisation	Block 1	7.5 ECTS

• NBIK15016U	The Human Microbiome	Block 1	7.5 ECTS
• NBIK15011U	Experimental Molecular Genetics	Block 1	7.5 ECTS
• NBIK10015U	Cell Cycle Control and Cancer	Block 1	7.5 ECTS
• NBIK10017U	RNA Biology	Block 1	7.5 ECTS
• LNAK10099U	Biodiversity in Urban Nature	Block 1	7.5 ECTS
• NBIK15007U	Advanced Ecology	Block 1	7.5 ECTS
• NBIK15017U	Theoretical Molecular Genetics	Block 1	7.5 ECTS
• NBIK15009U	Cellular Signaling in Health and Disease	Block 2	7.5 ECTS
• NBIK15010U	Epigenetics and Cell Differentiation	Block 2	7.5 ECTS
• SGBK20002U	Macroecology and Community Ecology	Block 2	7.5 ECTS
• NBIK15005U	Advanced Bacteriology 2	Block 2	7.5 ECTS
• NBIK14007U	Soil Biology	Block 2	7.5 ECTS
• NBIK14005U	The Biology of Fish	Block 2	7.5 ECTS
• NBIK14009U	Protists – Eukaryotic Microbiology	Block 2	7.5 ECTS
• NBIK14022U	Methodology and Sampling in Environmental Management	Block 2	7.5 ECTS
• NBIK14001U	Climate Change and Biogeochemical Cycles	Block 2	7.5 ECTS
• NBIK17001U	Dynamical Models in Molecular Biology	Block 2	7.5 ECTS
• NBIK10020U	Developmental Biology	Block 2	7.5 ECTS
• NBIK13005U	Experimental Higher Model Organisms	Block 2	7.5 ECTS
• NBIK20005U	Cellular and Integrative Physiology	Block 3	7.5 ECTS
• NBIK14010U	Social Behaviour and Communication	Block 3	7.5 ECTS
• NBIA09043U	Population Genetics	Block 3	7.5 ECTS
• NBIK14035U	Medical Bacteriology	Block 3	7.5 ECTS
• NBIK15014U	Human Genetics	Block 3	7.5 ECTS
• SBIK10182U	From Gene to Function in Pathogenic Bacteria	Block 3	7.5 ECTS
• NBIK16003U	Marine Microbiology and Virology	Block 3	7.5 ECTS
• SGBK20003U	Ornithology	Block 3	7.5 ECTS
• NBIA08004U	Evolutionary Medicine	Block 3	7.5 ECTS
• NBIK20006U	Advanced Topics in Physiology	Block 4	7.5 ECTS
• NBIK14004U	Freshwater Ecology	Block 4	7.5 ECTS
• NBIK14017U	Invasion Biology	Block 4	7.5 ECTS
• NNMK15004U	Animal Morphology	Block 4	7.5 ECTS
• NBIK14013U	Arctic Biology	Block 4	7.5 ECTS
• NBIK14018U	Terrestrial Ecosystem Processes and Global Change	Block 4	7.5 ECTS
• NBIA07023U	Bioinformatics of High Throughput Analyses	Block 4	7.5 ECTS
• NBIK15000U	Advanced Plant Identification	Block 5	7.5 ECTS

6.1.3 Restricted elective subject elements within the minor subject

45 ECTS are to be covered as subject elements from the minor subject if the minor subject is within the field of science.

75 ECTS are to be covered as subject elements from the minor subject if the minor subject is outside the field of science.

If the student lacks less than 45 or 75 ECTS of the minor subject when the MSc Programme begins the difference must be covered as elective subject elements.

6.1.4 Elective subject elements

The elective subjects are generally covered by the subject elements which the student follows on the minor subject.

It is, however, possible to release elective subject elements if the academic minimum requirements for the minor subjects have been met – this will, e.g., be the case if one or both of the following two conditions are present:

- A subject elements forms part of both the major and minor Upper Secondary School course packages (*gymnasiefagpakker*). The subject elements should only be passed once, and the student has full freedom of choice in terms of the remaining ECTS.
- If less than 45 or 75 ECTS within the minor subject are missing when entering the MSc Programme.

BSc subject elements corresponding to 15 ECTS may be included in the MSc Programme as elective subject elements without the approval of the study board.

Projects outside the course scope may be included in the elective section of the programme by up to 7.5 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 by up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.

Thesis preparation projects may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 6 to the shared section of the curriculum.

Projects outside the course scope, projects in practice and thesis preparation projects may not exceed 45 ECTS of the programme.

6.1.5 Thesis

The MSc Programme in Biology with a minor subject includes a thesis corresponding to 30 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 academic mobility is generally covered by the subject elements which the student follows on the minor subject.

The student has the possibility to arrange academic mobility during the programme according to the rules and regulations regarding pre-approvals and credit.

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 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 Tables

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

Table – MSc Programme in Biology with a minor subject within the field of science

	Block 1	Block 2	Block 3	Block 4
1st year	Minor subject	Minor subject	Minor subject	Minor subject
	Minor subject	Minor subject	Restricted elective	Restricted elective
2nd year	Restricted elective	Naturfagsdidaktik for Biologi	Thesis	
	Restricted elective	Restricted elective		

Compulsory
 Restricted elective
 Elective

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

Table – MSc Programme in Biology with a minor subject outside SCIENCE

	Block 1	Block 2	Block 3	Block 4
1st year	Minor subject	Minor subject	Minor subject	Minor subject
	Minor subject	Minor subject	Minor subject	Minor subject
2nd year	Minor subject	Minor subject	Restricted elective	Restricted elective
	Restricted elective	Naturfagsdidaktik for Biologi	Restricted elective	Restricted elective
3rd year	Thesis			

Compulsory
 Restricted elective
 Elective

The table illustrates the recommended academic progression. The student is allowed to plan an alternative progression within the applicable rules. Note that minor subjects outside SCIENCE may have a fixed progression.

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

Table – MSc Programme in Biology with a minor subject within the field of science*

	Block 3	Block 4	Block 1	Block 2
1st year	Minor subject	Minor subject	Minor subject	Minor subject
	Minor subject	Minor subject	Restricted elective	Naturfagsdidaktik for Biologi
2nd year	Restricted elective	Restricted elective	Thesis	
	Restricted elective	Restricted elective		

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

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

Table – MSc Programme in Biology with a minor subject outside the field of science*

	Block 3	Block 4	Block 1	Block 2
1st year	Minor subject	Minor subject	Minor subject	Minor subject
	Minor subject	Minor subject	Minor subject	Minor subject
2nd year	Minor subject	Minor subject	Restricted elective	Naturfagsdidaktik for Biologi
	Restricted elective	Restricted elective	Restricted elective	Restricted elective
3rd year	Thesis			

Compulsory
 Restricted elective
 Elective
 The table illustrates the recommended academic progression. The student is allowed to plan an alternative progression within the applicable rules. Note that minor subjects outside SCIENCE may have a fixed progression.

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

Appendix 2 Interim arrangements

The Shared Section of the BSc and MSc Curricula for Study Programmes 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 2020/21

Students admitted to the MSc Programme in the academic year 2020/21 must finish the programme as listed in the curriculum above with the following exceptions.

Restricted elective subject elements

37.5 ECTS are to be covered as subject elements from one, two or all of the following list:			
• Restricted elective subject elements offered as part of list 2) in this curriculum (see above)			
• NBIK14008U	Marine Biology	Discontinued*	15 ECTS

*See course specific changes below.

2 General changes for students admitted in the academic year 2019/20, 2018/19 or 2017/18

Students admitted to the MSc Programme in the academic year 2019/20, 2018/19 or 2017/18 must finish the programme as listed in the curriculum above with the following exceptions.

Restricted elective subject elements

37.5 ECTS are to be covered as subject elements from one, two or all of the following list:			
• Restricted elective subject elements offered as part of list 2) in this curriculum (see above)			
• NBIK14008U	Marine Biology	Discontinued*	15 ECTS
• NBIK14020U	Archaea Biology	Discontinued*	7.5 ECTS
• NBIK14014U	Cellular and Integrative Physiology	Discontinued*	15 ECTS
• SGBK20002U	Macroecology and Community Ecology	Discontinued*	7.5 ECTS
• SGBK20003U	Ornithology	Discontinued*	7.6 ECTS

*See course specific changes below.

2 Course specific changes

Discontinued course	Interim arrangement
Archaea Biology (NBIK14020U), 7.5 ECTS	The course was a restricted elective course in the academic year 2019/20, 2018/19 and 2017/18. Offered for the last time: 2019/20 Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2020/21
Cellular and Integrative Physiology (NBIK14014U), 15 ECTS	The course was a restricted elective course in the academic year 2019/20, 2018/19 and 2017/18. Offered for the last time: 2019/20 Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2020/21
Macroecology and Community Ecology (NBIK15015U), 7.5 ECTS	The course was restricted elective on the specialisation Ecology in the academic year 2019/20, 2018/19 and 2017/18. Offered for the last time: 2019/20. The course is identical to Macroecology and Community Ecology (SGBK20002U) 7.5 ECTS.
Marine Biology (NBIK14008U), 15 ECTS	The course was a restricted elective course in the academic year 2020/21, 2019/20, 2018/19 and 2017/18. Offered for the last time: 2020/21 Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2021/22.
Ornithology (NNMK11002U), 7,5 ECTS	The course was restricted elective on the specialisation Ecology in the academic year 2019/20, 2018/19 and 2017/18. Offered for the last time: 2019/20. The course is identical to Ornithology (SGBK20003U) 7.5 ECTS.

Appendix 3 Description of objectives for the thesis

After completing the thesis, the student should have:

Knowledge of:

- Scientific problems within the study programme's subject areas.
- A suitable combination of methodologies/theories based on international research for use in his/her work with the problem formulation.
- Theories/models on the basis of an organised value system and with a high degree of independence.

Skills in/to:

- Apply and critically evaluate theories/methodologies, including their applicability and limitations.
- Assess the extent to which the production and interpretation of findings/material depend on the theory/methodology chosen and the delimitation chosen.
- Discuss academic issues arising from the thesis.
- Draw conclusions in a clear and academic manner in relation to the problem formulation and, more generally, considering the topic and the subject area.
- Discuss and communicate the academic and social significance, if any, of the thesis based on ethical principles.

If the thesis includes experimental content/own data production, the student will also be able to:

- Substantiate the idea of conducting experimental work/producing own data in order to shed light on the topic as formulated in the problem formulation.
- Process data through a choice of academic analysis methods and present findings objectively and in a concise manner.
- Assess the credibility of own findings based on relevant data processing.

Competences in/to:

- Initiating and performing academic work in a research context.
- Solving complex problems and carry out development assignments in a work context.