Programme-specific Section of the
Curriculum for the MSc Programme in
Environmental Science
at the Faculty of Science, University of Copenhagen
2012 (Rev. 2018)

Contents

1 Title, affiliation and language .................................................................................................................. 2
1.1 Title .................................................................................................................................................. 2
1.2 Affiliation .......................................................................................................................................... 2
1.3 Corps of external examiners ............................................................................................................. 2
1.4 Language ......................................................................................................................................... 2

2 Academic profile .................................................................................................................................. 2
2.1 Purpose ............................................................................................................................................. 2
2.2 General programme profile ............................................................................................................. 2
2.3 General structure of the programme ............................................................................................... 3
2.4 Career opportunities ....................................................................................................................... 4

3 Description of competence profiles ...................................................................................................... 4
3.1 Generic competence profile ............................................................................................................. 4
3.2 Environmental Science - Chemistry, Toxicology and Health ............................................................ 5
3.3 Environmental Science – Soil, Water and Biodiversity ..................................................................... 6

4 Admission requirements ........................................................................................................................ 8
4.1 Applicants with a Bachelor’s degree in Natural Resources .............................................................. 9
4.2 Applicants with a closely related Bachelor’s degree ......................................................................... 9
4.3 Applicants with a related Bachelor’s degree ..................................................................................... 9
4.4 Other applicants ............................................................................................................................... 9
4.5 Language requirements .................................................................................................................... 9
4.6 Supplementary subject elements ..................................................................................................... 9

5 Prioritisation of applicants ..................................................................................................................... 10

6 Structure of the programme .................................................................................................................... 10
6.1 General profile in Chemistry, Toxicology and Health ...................................................................... 10
6.2 Specialisation: General profile in Environmental Science – Soil, Water and Biodiversity (1st year at UCPH, 2nd year abroad) ............................................................................................................. 12
6.3. General profile in Environmental Science – Soil, Water and Biodiversity (1st year abroad, 2nd year at UCPH) .......................................................................................................................... 14

7 Exemptions .......................................................................................................................................... 16

8 Commencement etc. ................................................................................................................................. 16
8.1 Validity ............................................................................................................................................. 16
8.2 Transfer ........................................................................................................................................... 17
8.3 Amendment ...................................................................................................................................... 17

Appendix 1 Tables .................................................................................................................................... 18
Appendix 2 Interim arrangement ............................................................................................................... 21
Appendix 3 Description of objectives for the thesis ................................................................................. 30
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 Environmental Science leads to a Master of Science (MSc) in Environmental Science with a specialisation in Chemistry, Toxicology and Health the Danish title: Cand.scient. (candidatus/candidata scientiarum) i miljøvidenskab med en specialisering i kemi, toxikologi og sundhed.

The MSc Programme in Environmental Science leads to a Master of Science (MSc) in Environmental Science with a specialisation in Soil, Water and Biodiversity the Danish title: Cand.scient. (candidatus/candidata scientiarum) i miljøvidenskab med en specialisering i jord, vand og biodiversitet.

1.2 Affiliation
The programme is affiliated with the Study Board of Natural Resources, Environment and Animal Science, 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 Agricultural Science (jordbrugsvidenskab).

1.4 Language
The language of this MSc Programme is English.

2 Academic profile
2.1 Purpose
The objective of the program is to train graduates who are capable of conducting research, develop solutions and improve systems within the fields of sustaining soil and water quality and biodiversity in an environment influenced by human activity. This includes chemical pollution and the resulting impact on the environment and human health. The training is based on a quantitative understanding and solution based knowledge of environmental sciences.

2.2 General programme profile
Understanding the processes behind and the consequences of human activity on the environment and human health, with the aim of developing solutions to ameliorate adverse impacts, form the core of the program. The program has two specialisations: 1) Chemistry, Toxicology and Health and 2) Soil, Water and Biodiversity. Many topics can be overlapping within the two specialisations, but they diverge in the sense that the specialisation in Chemistry, Toxicology and Health focuses mainly on pollution problems and solutions, and therefore requires a profound chemical understanding. The specialisation also includes human health effects of pollution and hence compulsory courses at the faculty of Health Science are part of the program. The entire specialization can be taken at the University of Copenhagen and the MSc-thesis can be conducted either at the faculty of SCIENCE or HEALTH. The specialisation in Soil, Water and Biodiversity, on the other hand, focusses more broadly on environmental challenges caused by human activity. This specialization is a double degree program between University of Copenhagen (Denmark), University of Hohenheim (Germany), Swedish University of Agricultural Science (Sweden) and the University of Natural Resources and Life Sciences Vienna (Austria), all members of the Euroleague for Life Sciences. This specialisation combines one year at the HOME university and one year at
the HOST university. Upon completion, the students obtain two MSc diplomas: One from the HOME and one from the HOST university. The two specializations each requires a specific course combination and results in specific competences as described below.

The specialisation Chemistry, Toxicology and Health combines the individual disciplines: chemistry, biology and human health. The compulsory courses of the specialisation provide the knowledge necessary to relate the occurrence of a chemical agent or a substance in the environment to the actual and potential occurrence of harmful effects. The courses ‘Toxicology and Ecotoxicology’, ‘Soil and Water Pollution: Concepts’, ‘Soil and Water Pollution: Applications’, ‘Air Pollution and Health’ and ‘Environmental Epidemiology’ lead to the last of the compulsory subjects, ‘Environmental and Human Health Risk Assessment of Chemicals’. Here, the knowledge acquired in the first courses is put into perspective, creating coherence between the subject elements by giving the students a thorough knowledge about impact and exposure in relation to the environment, organisms and humans, and the political and ethical considerations involved in all chemical regulation. The compulsory courses gathers the competences, enabling a full exposure and impact analysis of pesticides, pharmaceuticals, heavy metals, nano-substances and other chemicals, both in relation to workplaces, consumers and the environment with regard to soil, air, water, organisms and humans. Having completed the compulsory courses, the student will have a broad foundation of knowledge on which to base the elective courses. The specialisation is finalised with an experimentally founded MSc thesis.

The specialisation Soil, Water and Biodiversity (EnvEuro) focus on use of natural resource in Europe and the effects on environment and health, and aims at providing analytical and management tools, as well as environmental technologies for sustainable production systems in areas with high pressures on natural resources. Water resources takes a central role in the specialisation as water quality is to a large extent determined by the composition, properties, management and pollutant loads of the soil and from the atmosphere. Water is the main carrier of substances in the terrestrial environment and connects to the atmospheric environment, the aquatic environment and to the biosphere as plants and microorganisms take up nutrients and substrate through the aqueous phase. Ecosystem stability and animal and human health is strongly affected through the quality of water in streams, lakes, marine waters and groundwater and indirectly via feed and food, the quality of which depends on the inherent quality of soil and irrigation waters. The comprehensive and coordinated environmental framework programmes that have been implemented all over Europe are backed up by intensive and common monitoring programs, legislation, regulation, management and policy practices. The specialisation aims at providing candidates who can work professionally with problem identification, characterisation and solving related to the use of natural resources, and based on insight in European ecosystems and principles used in current European environmental management.

2.3 General structure of the programme
The MSc Programme is set at 120 ECTS.

The MSc Programme in Environmental Science consists of the following elements:
- Specialisation: 120 ECTS, including the thesis.

The student must choose one of the following specialisations:
- General profile in Chemistry, Toxicology and Health
- General profile in Soil, Water and Biodiversity* (1st year at UCPH, 2nd year abroad)
- General profile in Soil, Water and Biodiversity* (1st year abroad, 2nd year at UCPH)

* Double degree programme among four universities in Europe. One year study at the University of Copenhagen and one year at a partner university: University of Natural
Resources and Life Sciences (BOKU), Swedish University of Agricultural Sciences (SLU) or University of Hohenheim (UHOH). The structure is explained in Appendix 1.

2.4 Career opportunities
The MSc Programme in Environmental Science qualifies students to become professionals within business functions and/or areas such as:

- A PhD programme
- Research and communication within industries working with developing environmentally more benign products
- National and international advising and consultancy and project management within natural science and health science – the link between environmental pollution and protection of ecosystem and human health.
- Clean-tech industries developing new methodologies for cleaner technology.
- Public administration in municipalities all over the world working with the regulation of chemicals and ecosystem management.
- Policy development, implementation and administration related to nature, environment and related technologies in the public sector (ministries and municipalities) and in private stakeholder organizations, including international NGOs

3 Description of competence profiles
Students following the MSc Programme acquire the knowledge, skills and competencies listed below. Students will also acquire other qualifications through elective subject elements and other study activities.

3.1 Generic competence profile
On completion of the programme, an MSc in Environmental Science has acquired the following regardless of the chosen specialisation:

Knowledge about:
- The effect of human activities on ecosystem functions
- Compounds and processes in soil, water and air at the molecular/mechanistic and ecosystem level.
- The fundamental principles behind environmental policy/legislation, regulation and management in Europe.
- How legislative and regulatory measures at the national and international level can be utilised for reducing environmental impact of agricultural and horticultural systems.

Skills in/to:
- Select and master appropriate up-to-date quantitative and qualitative methodologies for quantifying environmental load and sustainability of production systems.
- Define a scientific problem, set up corresponding hypotheses, plan and execute experiments to test the hypothesis and communicate the results written as well as orally.
- Analyze scientific literature and assess possibilities and limitations in the application of theories, methods and new technologies.
- Communicate complex information to a wide range of national as well as international audiences using modern and appropriate information and communication tools.
- Develop and use mathematical models describing biological, physical and chemical processes for predictive purposes and in relation to planning and management.
- Present deep insight in structure and functioning of natural and man-influenced rural ecosystems, environmental and health effects of ecosystem perturbations, and be able
to develop environmental technologies and measures for achieving sustainable production systems.

Competences in/to:

- Explore complex relationships between the basic scientific aspects of environmental problems and the economic, social and political obstacles that have to be overcome in order to implement solutions on a national and international scale.
- Take into account the social, political and religious influences in connection with the working-out of solutions to environmental issues.
- Assess the impact of new technology on current values and ethics and take this into account when involved in research, risk and uncertainty assessments or the introduction of new technologies.
- Handle and solve complex environmental issues in specific work situations or in relation to research.
- Work independently and efficiently on your own, in teams as well as in interdisciplinary environments.
- Engage in national and international research.
- Apply life-long learning as a principle to independently assess and structure learning processes and assume responsibility for continuous academic development.
- Create ideas and strategies for development of environmental technology in relation to remediation and reduction of pollution from soils and waters.
- Take responsibility for research-, adviser- or policy-related activities within agriculture, environment and food systems in real-life situations.

3.2 Environmental Science - Chemistry, Toxicology and Health

In addition, an MSc in Environmental Science with specialisation in Chemistry, Toxicology and Health has acquired the following competences:

Knowledge about:

- International original specialist literature on environmental chemistry, ecotoxicology, human toxicology and environmental epidemiology.
- General knowledge of the effects and the toxicity of pollutants on living organisms.
- The classification of chemical substances in relation to their hazard level and define principles for determining threshold values for the external environment, working environment, consumer products and food.
- The use of equipment and analysis methods for environmental chemistry, ecotoxicological, human toxicological and environmental epidemiological purposes.
- The analytical methods, experimental approaches and modern biotechnological tools applied at a high scientific level within environmental chemistry, and pollutant effects on ecosystem and health-related issues.

Skills in/to:

- Set up mass and energy flows and quantify substance transformations, in particular the transformation of pollutants, using modern models and be able to validate model predictions.
- Analyse and apply international scientific literature on environmental Science aspects.
- Use the most important databases on chemical, microbiological and toxicological substances in relation to pollutants.
- Participate in the design and performance of scientific experiments.
- Apply basic scientific principles in connection with the analysis of large data volumes.
Competences in/to:
- Expand the field of environmental chemistry by developing new technology, by introducing new analysis and monitoring methods as well as by assessing and solving environmental and health problems and potential threats.

3.3 Environmental Science – Soil, Water and Biodiversity
In addition, an MSc in Environmental Science with specialisation in Soil, Water and Biodiversity has acquired the following competences:

Knowledge about:
- Environmental concepts, problems and relationships in a European and global context.
- Strategies for handling and solving environmental problems and challenges in a European and a global context.
- The systemic and quantitative linkages between natural resource use and water quality.
- The systematic and quantitative linkage between land use and environmental quality, with main focus on water resources.
- The implications of sustainability concepts, and to demonstrate insight in the environmental and land use history of Europe and the lessons learned from that.

Skills in/to:
- Formulate the kinetics, equilibrium and mass balances for chemical, physical and biological processes affecting matter circulation in ecosystems within the selected area of specialization for each student.
- Understand and apply the methods and techniques used for environmental monitoring, and subsequent handling, statistical analysis and presentation of environmental data.

Competences in/to:
- Effectively communicate and collaborate with others across distances, cultural and language borders, by use of different media such as written texts, oral presentations, video conferences and web-forums.
- Transfer research results on environmental processes and impacts into proposals for improving sustainability of agricultural and horticultural systems.

In addition an MSc in Environmental Science with specialisation in Soil, Water and Biodiversity has acquired the following competences depending on the choice of profile:

3.3.1 Profile - Environmental Impact
Knowledge about:
- Ecosystem functioning and disturbance.
- Structure and functioning of landscapes.
- The consequences of human actions on the environment.
- Theoretical and analytical methods used to assess environmental impacts.
- Important technologies to reduce and remediate environmental impacts.

Skills in/to:
- Apply theory based and practical tools to analyse environmental impacts such as data collection/evaluation, ecotoxicological methods, environmental modeling.
- Communicate knowledge about environmental impacts by means of standard and advanced communication techniques tailored for the respective user.
Competences in/to:
- Carry out research projects using theoretical and analytical methods to assess environmental impacts.
- Cooperate and work independently to create ideas and strategies for remediating and reducing environmental pollution, resource depletion and environmental change.
- Work in a European context - Support both public and private authorities dealing with environmental impacts.

3.3.2 Profile - Soil Resources and Land Use

Knowledge about:
- Soil constituents and the characteristics of common soil types.
- Interactions between inorganic and organic components and the importance of soil organisms to soil functioning.
- Consequences of land use on soil quality and the environment.
- Technologies to remediate damaged and polluted soils.

Skills in/to:
- Apply and master up-to-date methodologies (molecular, analytical, modelling) for research on plant and/or environmental processes.
- Analyse interactions between soil components and inorganic and organic compounds in soil solution in relation to land use and the environment.
- Apply theory based and practical tools to analyse soils in the environment such as data collection, ecotoxicology, environmental modelling, life cycle analysis, environmental load, sustainable crop production.

Competences in/to:
- Demonstrate capacity for independent work and creativity in the application of knowledge and skills in soil work situations or in research.
- Participate in public discussions of soil resources, land use and soil quality both in international and national perspective.
- Cooperate and work independently to create ideas and strategies for reducing soil pollution, soil resource damaging and preserving soil quality in a European context.

3.3.3 Profile - Ecosystems and Biodiversity

Knowledge about:
- Ecological processes on organism, population and ecosystem levels and their consequences for biodiversity.
- Theoretical and analytical methods used in ecology.
- Relevant methods for addressing theoretical and applied ecological questions.

Skills in/to:
- Apply theory and practical methods to understand ecological processes and management options of relevance for conservation of biodiversity and ecosystem structure and function.
- Communicate knowledge about ecological systems and environmental issues, both orally and in writing.
- Interpret ecological studies.

Competences in/to:
- Carry out research projects using theoretical and analytical methods to ecological systems for management of biodiversity and other ecological resources in relation to environmental change and human impacts.
• Cooperate and work independently to create ideas and strategies for testing ecological questions both in theory and in practice.

3.3.4 Profile - Environmental Management
Knowledge about:
• Effects of human actions and intervention on the environment.
• Theoretical and analytical methods within environmental management.
• Relevant management and policy approaches to cope with the protection and utilisation of natural and environmental goods/resources.

Skills in/to:
• Apply theory based and practical tools to analyse environmental management issues.
• Communicate knowledge about environmental management in writing.

Competences in/to:
• Carry out projects using theoretical and analytical methods in environmental management.
• Cooperate and work independently to create ideas and strategies for more sustainable management decisions.

3.3.5 Profile - Climate Change
Knowledge about:
• Driving forces of climate change.
• The tools and models used to observe, monitor and predict climate change.
• Impacts of changing climatic conditions on ecosystems and ecosystem services.
• Feedbacks between ecosystems, ecosystem management and climate change.
• Mitigation and adaptation measures in terms of technical, economic and political feasibility.

Skills in/to:
• Apply theory based and practical tools to analyse climate change impacts and to evaluate possible mitigation alternatives.
• Communicate knowledge about climate change and its impacts as well as mitigation and adaptation strategies by means of standard and advanced communication techniques tailored for the respective user.

Competences in/to:
• Conduct assessment projects using theoretical and analytical methods to analyse climate change, its impacts, mitigation, and adaptation options.
• Cooperate and work independently to create ideas and strategies for mitigation of and adaptation to climate change.
• Study in a European context.
• Interact with public authorities, private enterprises and NGOs dealing with climate change.

4 Admission requirements
With a Bachelor’s degree in Natural Resources with the specialisation in Environmental Science from the University of Copenhagen the student is granted reserved access and guaranteed a place on the MSc Programme in Environmental Science if the student applies before the application deadline during the first application period after the completion of the Bachelor’s degree.
4.1 Applicants with a Bachelor’s degree in Natural Resources
Applicants with a Bachelor’s degree in Natural Resources with the specialisation in Environmental Science from the University of Copenhagen or other Danish or Nordic universities are directly academically qualified for admission to the MSc Programme in Environmental Science.

4.2 Applicants with a closely related Bachelor’s degree
Applicants with one of the following Bachelor’s degrees are directly academically qualified for admission to the MSc Programme in Environmental Science:

- Chemistry, Biology, Biology-Biotechnology, Pharmacy or Molecular Biomedicine from the University of Copenhagen.
- Chemistry, Biology, Biotechnology Engineering or Medicinal Chemistry from Aarhus University.
- Chemistry, Biology, Pharmacy, Engineering (Chemistry and Biotechnology) or Biochemistry and Molecular Biology from the University of Southern Denmark.
- Chemical Engineering and Biotechnology or Sustainable Biotechnology from Aalborg University.
- Technical Science (teknisk videnskab) with specialisation in Environmental Technology (miljøteknologi) (the graduate engineer programme) from DTU.
- Natural Sciences or International Bachelor in Natural Sciences from Roskilde University.
- Vand, Bioressourcer og Miljømanagement, Biotechnology or Chemistry and Technology from the Technical University of Denmark.

4.3 Applicants with a related Bachelor’s degree
Applicants with a Bachelor’s degree in Natural Resources, Environmental Science, Geography and Geoinformatics or similar from the University of Copenhagen, other Danish, Nordic or international universities may be admitted if their programme includes three of the following four areas:

- Biology or ecology 7.5 ECTS
- Natural resources 7.5 ECTS
- Environmental chemistry 7.5 credits
- Chemistry, 7.5 ECTS

4.4 Other applicants
The Faculty may also admit applicants who, after an individual academic assessment, are deemed to possess educational qualifications equivalent to those required in Subclauses 4.1-3.

4.5 Language requirements
Applicants must as a minimum document English language qualifications comparable to a Danish upper secondary school English B level or English proficiency corresponding to the tests and scores required. Accepted tests and required minimum scores are published online at www.science.ku.dk.

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

However, subject elements passed before the completion of the bachelor’s program 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 program. A maximum of 30 ECTS supplementary subject elements can be included in the overall assessment.
Subject elements passed before completing the BSc programme which are to form part of the MSc programme to which the student has a legal right of admission (§9-courses) cannot be included in the overall assessment.

5 Prioritisation of applicants
If the number of qualified applicants to the programme exceeds the number of places available, applicants will be prioritised as follows:

1) Applicants with a Bachelor’s degree in Natural Resources with the specialisation in Environmental Science from the University of Copenhagen seeking admission by way of direct extension of their completed BSc programme.
2) Applicants with a Bachelor’s degree in within the area of environmental sciences as described in 4.2 and 4.3.
3) Other applicants.

If the number of qualified applicants within a category exceeds the number of places available, applicants will be prioritised according to the following criteria (listed in prioritised order):
- ECTS obtained within the topics of chemistry, biology and environmental management.

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 General profile in Chemistry, Toxicology and Health
The specialisation is set at 120 ECTS and consists of the following:
- Compulsory subject elements, 45 ECTS.
- Restricted elective subject elements
  - 30 ECTS (thesis, 30 ECTS)
  - 15 ECTS (thesis, 45 ECTS)
- Elective subject elements, 15 ECTS.
- Thesis, 30 or 45 ECTS

6.1.1 Compulsory subject elements
All of the following subject elements are to be covered (45 ECTS):

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
<th>Block</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPLK18000U</td>
<td>Toxicology and Ecotoxicology</td>
<td>Block 1</td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>NPLK14021U</td>
<td>Soil and Water Pollution - Concepts and Theory</td>
<td>Block 1</td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>NPLK14029U</td>
<td>Soil and Water Pollution - Experimental Assessment</td>
<td>Block 2</td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>NKEA09012U</td>
<td>Air Pollution and Health</td>
<td>Block 2</td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>SMKK09001U</td>
<td>Environmental Epidemiology</td>
<td>Block 3</td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>NIFK15005U</td>
<td>Environmental and Human Health Risk Assessment of Chemicals</td>
<td>Block 4</td>
<td>7.5 ECTS</td>
</tr>
</tbody>
</table>

6.1.2 Restricted elective subject elements
30 ECTS are to be covered as subject elements from the following list (thesis, 30 ECTS)
15 ECTS are to be covered as subject elements from the following list (thesis, 45 ECTS)

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
<th>Block</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFKK18003U</td>
<td>Principles and Practice of Bioanalysis</td>
<td>Block 1</td>
<td>7.5 ECTS</td>
</tr>
</tbody>
</table>
### 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 15 ECTS may be included in the MSc Programme.

Projects outside the course scope may be included in the elective section of the program with up to 15 ECTS. Note that Projects outside the course scope may not exceed 15 ECTS in total on the restricted elective and elective section of the programme. The regulations are described in Appendix 5 to the shared section of the curriculum.

Projects in practice may not exceed 15 ECTS in total on the restricted elective and elective section of the programme. Project in practice may be written as a combination of the restricted elective and elective section of the programme. The regulations are described in Appendix 4 to the shared section of the curriculum.

### 6.1.4 Thesis

The MSc Programme in Environmental Science includes a thesis corresponding to 30 or 45 ECTS as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.
The principal supervisor can be from the Faculty of SCIENCE or the Faculty of HEALTH at the University of Copenhagen.

6.1.5 Academic mobility
The curriculum makes it possible to follow subject elements outside the Faculty of Science and the faculty of Health.

For students admitted in September the academic mobility in the MSc Programme in Environmental Science with a thesis corresponding to 30 ECTS is placed in block 1+2 of the 2nd year.

For students admitted in February the academic mobility in the MSc Programme in Environmental Science with a thesis corresponding to 30 ECTS is placed in block 3+4 of the 2nd 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.

6.2 Specialisation: General profile in Environmental Science – Soil, Water and Biodiversity (1st year at UCPH, 2nd year abroad)
The general profile in Environmental Science – Soil, Water and Biodiversity is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 15 ECTS.
- Restricted elective subject elements, 37.5 ECTS.
- Elective subject elements, 7.5 ECTS.
- Compulsory studies at partner university 60 credits (2nd year)

6.2.1 Compulsory subject elements
All of the following subject elements are to be covered (15 ECTS):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Block</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNAK10043U</td>
<td>Environmental Management in Europe</td>
<td>1+2</td>
<td>15</td>
</tr>
</tbody>
</table>

6.2.2 Restricted elective subject elements
37.5 ECTS are to be covered as subject elements from two of the following lists:

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Block</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFOK14020U</td>
<td>Exploratory Data Analysis/Chemometrics</td>
<td>1</td>
<td>7.5</td>
</tr>
<tr>
<td>LFKK10258U</td>
<td>Qualitative Methods in Agricultural Development</td>
<td>1</td>
<td>7.5</td>
</tr>
<tr>
<td>NIFK18001U</td>
<td>Planning Interdisciplinary Research</td>
<td>1</td>
<td>7.5</td>
</tr>
<tr>
<td>LTEK10157U</td>
<td>Natural Resource Sampling and Modelling</td>
<td>1</td>
<td>7.5</td>
</tr>
<tr>
<td>NFKY13011U</td>
<td>Applied Statistics: From Data to Results</td>
<td>1</td>
<td>7.5</td>
</tr>
<tr>
<td>NIGK14052U</td>
<td>Landscape and Restoration Ecology</td>
<td>2</td>
<td>7.5</td>
</tr>
<tr>
<td>LBIK10180U</td>
<td>Applied Microbiology</td>
<td>2</td>
<td>7.5</td>
</tr>
<tr>
<td>LFKK10265U</td>
<td>Conflict Management</td>
<td>2</td>
<td>7.5</td>
</tr>
<tr>
<td>LOJK10282U</td>
<td>Applied Economics of Forest and Nature</td>
<td>2</td>
<td>7.5</td>
</tr>
</tbody>
</table>

22.5 credits are to be covered as subject elements from the following lists according to choice of sub-specialisation/profile:

Profile: Soil Resources and Land Use
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Block</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIGK17000U</td>
<td>Land Use and Environmental Modelling</td>
<td>Block 3</td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>NPLK14023U</td>
<td>Applied Agrohydrology I</td>
<td>Block 3</td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>NPLK14006U</td>
<td>Pesticide Use, Mode of Action and Ecotoxicology</td>
<td>Block 3</td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>NIGK14002U</td>
<td>Geographical Information Systems (GIS)</td>
<td>Block 3</td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>NB1K14018U</td>
<td>Terrestrial Ecosystem Processes and Global Change</td>
<td>Block 4</td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>NGK10029U</td>
<td>Groundwater Exploitation and Protection</td>
<td>Block 4</td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>LNAK10095U</td>
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**Profile: Environmental Impact**

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<td>NPLK14006U</td>
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**Profile: Environmental Management**

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<tr>
<td>LNAK10072U</td>
<td>Global Environmental Governance</td>
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<td>NIGK14002U</td>
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**Profile: Climate Change**

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<td>The Economics of Climate Change</td>
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<td>7.5 ECTS</td>
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<td>Block 3</td>
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<td>NIGK13012U</td>
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Page 13 of 30
Profile: Ecosystems and Biodiversity

<table>
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<td>NIGK15005U</td>
<td>Ecological Modelling</td>
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<td>7.5 ECTS</td>
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<td>NIGK13007U</td>
<td>Ecosystem Services from Forests and Nature</td>
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<td>NBK14017U</td>
<td>Invasion Biology</td>
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<td>Restoration of European Ecosystems and Freshwaters</td>
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<td>7.5 ECTS</td>
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</tbody>
</table>

6.2.3 Elective subject elements

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

6.2.4 Thesis

The general profile in Environmental Science – Soil, Water and Biodiversity (1st year at UCPH, 2nd year abroad) includes a thesis on the 2nd year and the thesis is written at the partner university.

6.2.5 Academic mobility

Students with the specialisation in Soil, Water and Biodiversity (1st year at UCPH, 2nd year abroad) have compulsory mobility at a partner university for their 2nd year.

6.3 General profile in Environmental Science – Soil, Water and Biodiversity (1st year abroad, 2nd year at UCPH).

The general profile in Environmental Science – Soil, Water and Biodiversity is set at 120 ECTS and consists of the following:

- Compulsory studies at partner university, 60 ECTS (1st year)
- Restricted elective subject elements, 22.5 ECTS.
- Elective subject elements, 7.5 ECTS.
- Thesis, 30 ECTS

6.3.1 Restricted elective subject elements

22.5 ECTS are to be covered as subject elements from one of the following lists according to the sub-specialisation/profile chosen after 1st semester at the partner university:

Profile: Soil Resources and Land Use

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Block</th>
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<td>LNAK10095U</td>
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<td>Soil and Water Pollution – Concepts and Theory</td>
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<td>Plants in Populations, Communities and Ecosystems</td>
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<td>NPLK14019U</td>
<td>Plant Nutrition and Soil Fertility</td>
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<td>Advanced Chemometrics</td>
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<td>Applied Statistics</td>
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<td>Political Ecology</td>
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Profile: Ecosystems and Biodiversity

- LNAK10095U Restoration of European Ecosystems and Freshwaters Block 5 7.5 ECTS
- NPLK14009U Plants in Populations, Communities and Ecosystems Block 1 7.5 ECTS
- NBIK14021U Evolutionary Ecology Block 1 7.5 ECTS
- NPLK14019U Plant Nutrition and Soil Fertility Block 1 7.5 ECTS
- LNAK10099U Biodiversity in Urban Nature Block 1 7.5 ECTS
- NIGK17013U Ecosystems, Climate and Climate Change Block 2 7.5 ECTS
- NBIK14004U Freshwater Ecology Block 2 7.5 ECTS
- NBIK15015U Macro Ecology and Community Ecology Block 2 7.5 ECTS
- NBIK14007U Soil Biology Block 2 7.5 ECTS
- NBIK12003U Conservation Biology Block 2 7.5 ECTS
- NIGK14052U Landscape and Restoration Ecology Block 2 7.5 ECTS
- NMAK14003U Applied Statistics Block 2 7.5 ECTS

6.3.2 Elective subject elements
7.5 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 outside the course scope may be included in the elective section of the programme with up to 7.5 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.

6.3.3 Thesis
The MSc Programme in Environmental Science with a specialisation in Soil, Water and Biodiversity (1st year abroad, 2nd year at UCPH) 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 programme.

The student must have a supervisor at both SCIENCE and the double degree partner university. The main supervisor is from the university where the student conducts the 2nd year, and the co-supervisor from the university where the students conducts the 1st year.

The thesis examination follows the regulations at the main supervisor’s university, but the co-supervisor must participate in the oral examination and grading.

6.3.4 Academic mobility
Students with the specialisation Soil, Water and Biodiversity (1st year abroad, 2nd year at UCPH) has one year abroad when entering the Faculty of Science at the 2nd year of the MSc 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 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 Environmental Science with a specialisation in Chemistry, Toxicology and Health

<table>
<thead>
<tr>
<th></th>
<th>Block 1</th>
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<tr>
<td>1st year</td>
<td>Toxicology and Ecotoxicology</td>
<td>Air Pollution and Health</td>
<td>Environmental Epidemiology</td>
<td>Environmental and Human Health Risk Assessment of Chemicals</td>
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<td>Restricted elective</td>
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</table>

The table illustrates the recommended academic progression. The student is allowed to plan an alternative progression within the applicable rules.
Table - Environmental Science - Soil, Water and Biodiversity (1st year at UCPH, 2nd year abroad)

<table>
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<th>Block 3</th>
<th>Block 4</th>
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</thead>
<tbody>
<tr>
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<td>Restricted elective</td>
<td>Restricted elective</td>
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<tr>
<td>2nd year</td>
<td>2nd year at partner university</td>
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The table illustrates the recommended academic progression. The student is allowed to plan an alternative progression at UCPH within the applicable rules.

Table - Environmental Science - Soil, Water and Biodiversity (1st year abroad, 2nd year at UCPH)

<table>
<thead>
<tr>
<th>Block 1</th>
<th>Block 2</th>
<th>Block 3</th>
<th>Block 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td>1st year at partner university</td>
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</tr>
<tr>
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<td>Restricted elective</td>
<td>Elective</td>
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<tr>
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<td>Thesis</td>
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</tbody>
</table>

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

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

Table – MSc Programme in Environmental Science with a specialisation in Chemistry, Toxicology and Health*

<table>
<thead>
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<th>Block 3</th>
<th>Block 4</th>
<th>Block 1</th>
<th>Block 2</th>
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</thead>
<tbody>
<tr>
<td>1st year</td>
<td>Environmental Epidemiology</td>
<td>Environmental and Human Health Risk Assessment of Chemicals</td>
<td>Toxicology and Ecotoxicology</td>
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<tr>
<td></td>
<td>Restricted elective</td>
<td>Restricted elective</td>
<td>Soil and Water Pollution, Concepts and Theory</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Soil and Water Pollution, Experimental Assessment</td>
</tr>
<tr>
<td>2nd year</td>
<td></td>
<td>Elective</td>
<td>Thesis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Restricted elective</td>
<td></td>
</tr>
</tbody>
</table>

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)
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 Environmental Science with a specialisation in Chemistry, Toxicology and Health*

<table>
<thead>
<tr>
<th>1st year</th>
<th>Block 3</th>
<th>Block 4</th>
<th>Block 1</th>
<th>Block 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Epidemiology</td>
<td>Environmental and Human Health Risk Assessment of Chemicals</td>
<td>Toxicology and Ecotoxicology</td>
<td>Air Pollution and Health</td>
<td></td>
</tr>
<tr>
<td>Restricted elective</td>
<td>Restricted elective</td>
<td>Soil and Water Pollution, Concepts and Theory</td>
<td>Soil and Water Pollution, Experimental Assessment</td>
<td></td>
</tr>
</tbody>
</table>

| 2nd year | Elective | Elective | Thesis |

*This table is only relevant for students who begin the MSc Programme in February (block 3)
Appendix 2 Interim arrangement

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 2017/18

Students admitted to the MSc Programme in the academic year 2017/18 must finish the programme as listed in the curriculum above with the following exceptions.

1.1. Chemistry, Toxicology and Health

Compulsory subjects elements

All of the following subject elements are to be covered (45 ECTS):

<table>
<thead>
<tr>
<th>Subject Element</th>
<th>Duration (ECTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory subject elements offered in the specialisation Chemistry, Toxicology and Health in this curriculum (see above)</td>
<td></td>
</tr>
<tr>
<td>STFKA001U Toxicology and Ecotoxicology</td>
<td>Discontinued*</td>
</tr>
<tr>
<td></td>
<td>7.5 ECTS</td>
</tr>
</tbody>
</table>

*See course specific changes below.

Restricted elective subject elements

30 ECTS are to be covered as subject elements from the following list (thesis, 30 ECTS)
15 ECTS are to be covered as subject elements from the following list (thesis, 45 ECTS)

<table>
<thead>
<tr>
<th>Subject Element</th>
<th>Duration (ECTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted elective subject elements offered in the specialisation Chemistry, Toxicology and Health in this curriculum (see above)</td>
<td></td>
</tr>
<tr>
<td>SFKKA9021U Principles and Practice of Bioanalysis</td>
<td>Discontinued*</td>
</tr>
<tr>
<td></td>
<td>7.5 ECTS</td>
</tr>
<tr>
<td>SFKKB9091U In-vitro Techniques in Biochemistry and Pharmacology</td>
<td>Discontinued*</td>
</tr>
<tr>
<td></td>
<td>7.5 ECTS</td>
</tr>
</tbody>
</table>

*See course specific changes below

1.2. Soil, Water and Biodiversity (1st year at UCPH)

Restricted elective subject elements

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

<table>
<thead>
<tr>
<th>Subject Element</th>
<th>Duration (ECTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted elective subject elements offered in the specialisation Soil, Water and Biodiversity, 1st year at UCPH, (list 1) in this curriculum (see above)</td>
<td></td>
</tr>
<tr>
<td>LFKK10270U Research Planning</td>
<td>Discontinued*</td>
</tr>
<tr>
<td></td>
<td>7.5 ECTS</td>
</tr>
</tbody>
</table>

*See course specific changes below

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

<table>
<thead>
<tr>
<th>Subject Element</th>
<th>Duration (ECTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted elective subject elements offered in the specialisation Soil, Water and Biodiversity with the profile in Environmental Impact (see above)</td>
<td></td>
</tr>
<tr>
<td>NPLK14015U Biological Control of Pests</td>
<td>Discontinued*</td>
</tr>
<tr>
<td></td>
<td>7.5 ECTS</td>
</tr>
</tbody>
</table>

*See course specific changes below
### 1.3. Soil, Water and Biodiversity (2nd year at UCPH) – Profile: Environmental Impact

**Restricted elective subject elements**

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

- Restricted elective subject elements offered in the specialisation Soil, Water and Biodiversity with the profile in Environmental Impact (see above)
- NPLK14015U Biological Control of Pests Discontinued* 7.5 ECTS

*See course specific changes below.

### 2 General changes for students admitted in the academic year 2016/17

Students admitted to the MSc Programme in the academic year 2016/17 or earlier must finish the programme as listed in the curriculum above with the following exceptions.

#### 2.1 Chemistry, Toxicology and Health

**Compulsory subjects elements**

All of the following subject elements are to be covered (45 ECTS):

- Compulsory subject elements offered in the specialisation Chemistry, Toxicology and Health in this curriculum (see above)
- STFKA001U Toxicology and Ecotoxicology Discontinued* 7.5 ECTS

*See course specific changes below.

**Restricted elective subject elements**

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

- Restricted elective subject elements offered in the specialisation Chemistry, Toxicology and Health in this curriculum (see above)
- NKEK14015U The Chemistry of Metal Ions in Biological Systems Discontinued* 77.5 ECTS
- SFKKA9011U Applied Drug Metabolism Discontinued* 7.5 ECTS
- NIGK14003U Land Use, Element Balances and Environmental Impact Discontinued* 7.5 ECTS
- SFKKA9021U Principles and Practice of Bioanalysis Discontinued* 7.5 ECTS
- SFKKB9091U In-vitro Techniques in Biochemistry and Pharmacology Discontinued* 7.5 ECTS

*See course specific changes below.

### 2.2 Soil, Water and Biodiversity, 1st year at UCPH

#### Restricted elective subject elements

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

- Restricted elective subject elements offered in the specialisation Soil, Water and Biodiversity, 1st year at UCPH, (list 1) in this curriculum (see above)
- NPLB14022U Eksperimentelle jordbundsundersøgelser Block 1 7.5 ECTS
- NFYB14001U Climate Weather and Plants Block 1 7.5 ECTS
- NIGK14003U Land Use, Element Balances and Environmental Impact Discontinued* 7.5 ECTS
- LOJK10291U Introduction to Consultancy Discontinued* 7.5 ECTS
- LFKK10270U Research Planning Discontinued* 7.5 ECTS

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

- Restricted elective subject elements offered in the specialisation Soil, Water and Biodiversity, 1st year at UCPH, (list 2) in this curriculum (see above)
- NPLB14027U Analytical Chemistry Block 3 7.5 ECTS
- NBIB16003U Microbial Ecology Discontinued* 7.5 ECTS
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Status</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIGK14003U</td>
<td>Land Use, Element Balances and Environmental Impact</td>
<td>Discontinued*</td>
<td>7.5</td>
</tr>
<tr>
<td>LOJK10291U</td>
<td>Introduction to Consultancy</td>
<td>Discontinued*</td>
<td>7.5</td>
</tr>
<tr>
<td>NFYK13022U</td>
<td>Climate Models, Observations of the Past and the Present, and Projected Climate Change including Sea Level Rise</td>
<td>Discontinued*</td>
<td>7.5</td>
</tr>
</tbody>
</table>

*See course specific changes below.
2.3 Soil, Water and Biodiversity, 2nd year at UCPH

Restricted elective subject elements
15 ECTS are to be covered as subject elements from the following list:

- Restricted elective subject elements offered in the specialisation Soil, Water and Biodiversity, 1st year at UCPH, (list 1) in this curriculum (see above)
- LFKK10270U Research Planning Discontinued* 7.5 ECTS

*See course specific changes below

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

- Restricted elective subject elements offered in the specialisation Soil, Water and Biodiversity, 2nd year at UCPH, (list 2) in this curriculum (see above)
- NPLB14022U Eksperimentelle jordbundsundersøgelser Block 1 7.5 ECTS
- NPLK14015U Biological Control of Pests Discontinued* 7.5 ECTS
- NIGK14043U Environmental Soil Sciences I Discontinued* 7.5 ECTS
- NIGK14044U Environmental Soil Sciences II Discontinued* 7.5 ECTS
- NIGK14045U Remote Sensing of the Bio-geosphere 1 Discontinued* 7.5 ECTS
- NIGK14046U Remote Sensing of the Bio-geosphere 2 Discontinued* 7.5 ECTS
- NGEK10019U Ecological Climatology and Climate Change Discontinued* 7.5 ECTS
- NIGK10028U Past Climate and Sea Level – Processes and Proxies 1 Discontinued* 7.5 ECTS
- NIGK14029U Past Climate and Sea Level – Processes and Proxies 2 Discontinued* 7.5 ECTS

*See course specific changes below

3 General changes for students admitted in the academic year 2015/16

Students admitted to the MSc Programme in the academic year 2015/16 or earlier must finish the programme as listed in the curriculum above with the following exceptions.

For students admitted to the MSc Programme in the academic year 2015/16 the title awarded is Master of Science (MSc) in Environmental Chemistry and Health with the Danish title: Cand.scient. (candidatus/candidata scientiarum) i miljøkemi og sundhed.

3.1 Specialisations
Students admitted in the academic year 2015/16 are allowed to finish their programme with one of the specialisations that were outlined in the curriculum.

3.1.1 Chemistry, Toxicology and Health
Structure of the programme
- Compulsory subject elements, 45 ECTS.
- Restricted elective subject elements, 15 ECTS.
- Elective subject elements, 15 ECTS.
- Thesis, 45 ECTS.

Compulsory subjects elements
All of the following subject elements are to be covered (45 ECTS):

- Compulsory subject elements offered in the specialisation Chemistry, Toxicology and Health in this curriculum (see above)
- STFKA001U Toxicology and Ecotoxicology Discontinued* 7.5 ECTS

*See course specific changes below.
**Restricted elective subject elements**

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

- Restricted elective subject elements offered in the specialisation Chemistry, Toxicology and Health in this curriculum (see above)
- LFKK10265U Conflict Management
  - Block 2
  - 7.5 ECTS
- SMOA09011U Theoretical Pathophysiology
  - Discontinued*
  - 7.5 ECTS
- NFOK14020U Exploratory Data Analysis/Chemometrics
  - Discontinued*
  - 7.5 ECTS
- NKEK14015U The Chemistry of Metal Ions in Biological Systems
  - Discontinued*
  - 7.5 ECTS
- SFKKA9011U Applied Drug Metabolism
  - Discontinued*
  - 7.5 ECTS
- NIGK14003U Land Use, Element Balances and Environmental Impact
  - Discontinued*
  - 7.5 ECTS
- NBIK14000U Ecosystem Ecology
  - Discontinued*
  - 7.5 ECTS
- SFKKA9021U Exploratory Data Analysis/Chemometrics
  - Discontinued*
  - 7.5 ECTS
- SFKKB9091U In-vitro Techniques in Biochemistry and Pharmacology
  - Discontinued*
  - 7.5 ECTS

*See course specific changes below.

### 3.1.2 Soil, Water and Biodiversity (1st year at UCPH)

**Restricted elective subject elements**

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

- Restricted elective subject elements offered in this curriculum (see above)
- LPLK10360U From Plants to Bioenergy
  - Block 2
  - 7.5 ECTS
- LOJK10229U Natural Resource Economics
  - Block 2
  - 7.5 ECTS
- JJUA04592U International Environmental Law
  - Spring**
  - 7.5 ECTS
- JJUA14119U Climate Change and the Law
  - Discontinued*
  - 7.5 ECTS

* See course specific changes below.
** Be aware that pre-approval is necessary for this course

**Restricted elective subject elements**

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

- Restricted elective subject elements offered in this curriculum (see above)
- NBIA09049U Microbial Ecology
  - Discontinued*
  - 7.5 ECTS
- NBIK13006U Macro Ecology
  - Discontinued*
  - 7.5 ECTS
- NIGK14003U Land Use, Element Balances and Environmental Impact
  - Discontinued*
  - 7.5 ECTS
- NIGK14043U Environmental Soil Sciences I
  - Discontinued*
  - 7.5 ECTS
- NIGK14044U Environmental Soil Sciences II
  - Discontinued*
  - 7.5 ECTS
- NIGK14045U Remote Sensing of the Bio-geosphere 1
  - Discontinued*
  - 7.5 ECTS
- NIGK14046U Remote Sensing of the Bio-geosphere 2
  - Discontinued*
  - 7.5 ECTS
- NGEK10019U Ecological Climatology and Climate Change
  - Discontinued*
  - 7.5 ECTS
- NIGK10028U Past Climate and Sea Level – Processes and Proxies 1
  - Discontinued*
  - 7.5 ECTS
- NIGK14029U Past Climate and Sea Level – Processes and Proxies 2
  - Discontinued*
  - 7.5 ECTS

*See course specific changes below.

### 4 General changes for students admitted in the academic year 2014/15 or earlier

Students admitted to the MSc Programme in the academic year 2014/15 or earlier must finish the programme with the original curriculum structure under which they were admitted.

#### Structure of the programme

For students admitted to the MSc Programme in the academic year 2014/15 the programme consists of the following:

- Compulsory subject elements, 45 ECTS
- Elective subject elements, 30 ECTS
- Thesis, 45 ECTS
### Table – Environmental Chemistry and Health - admitted 2014/15 or earlier

<table>
<thead>
<tr>
<th>1st year</th>
<th>Block 1</th>
<th>Block 2</th>
<th>Block 3</th>
<th>Block 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Toxicology and Ecotoxicology</strong></td>
<td>Air Pollution and Health</td>
<td>Environmental Epidemiology</td>
<td><strong>Environmental and Human Health Risk Assessment of Chemicals</strong></td>
<td></td>
</tr>
<tr>
<td>Soil and Water Pollution, Concepts and Theory</td>
<td>Soil and Water Pollution, Experimental Assessment</td>
<td>Elective</td>
<td>Elective</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd year</th>
<th>Thesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective</td>
<td>Elective</td>
</tr>
</tbody>
</table>

Subject elements in italics have been discontinued. See course specific changes below.

### 5 Course specific changes

<table>
<thead>
<tr>
<th>Discontinued course</th>
<th>Interim arrangement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Drug Metabolism (SFKKA9011U), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialisation in Chemistry, Toxicology and Health in the academic year 2016/17 and earlier. The course was offered for the last time in the academic year 2016/17 and a third exam is offered in the academic year 2017/18.</td>
</tr>
<tr>
<td>Biological Control of Pests (NPLP14015U), 7.5 ECTS</td>
<td>The course was a restricted elective on the specialization in Soil, Water and Biodiversity in the academic year 2017/18 and earlier. The course was offered for the last time in the academic year 2017/18 and a third exam is offered in the academic year 2018/19.</td>
</tr>
<tr>
<td>Climate Models, Observations of the Past and the Present, and Projected Climate Change including Sea Level Rise (NFYK17002U), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialization in Soil, Water and Biodiversity in the academic year 2016/17 or earlier. The course was offered for the last time in the academic year 2016/17 and a third exam is offered in the academic year 2017/18. The course is identical to NFYK17002U Climate Models and Observations (NFYK17002U), 7.5 ECTS.</td>
</tr>
<tr>
<td>Climate Change and the Law (JJUA14119U), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialisation in Soil, Water and Biodiversity in the academic year 2015/16. The course was offered for the last time in the academic year 2015/16.</td>
</tr>
<tr>
<td>Earth and Climate Physics (NFYA04033U), 7.5 ECTS</td>
<td>The course was a restricted elective on the specialization in Soil, Water and Biodiversity in the academic year 2014/15.</td>
</tr>
<tr>
<td>Ecological Climatology and Climate Change (NGEK10019U), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialisation in Soil, Water and Biodiversity in the academic year 2016/17. The course was offered for the last time in the academic year 2016/17 and a third exam is offered in the academic year 2017/18.</td>
</tr>
<tr>
<td>Course Title</td>
<td>Details</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Environmental and Human Health Risk Assessment of Chemicals (DTU), 7.5 ECTS</td>
<td>The course was a compulsory course in the academic year 2014/15 and earlier.</td>
</tr>
<tr>
<td></td>
<td>The course was offered for the last time in the academic year 2014/15 and a third exam is offered in the academic year 2015/16.</td>
</tr>
<tr>
<td>Environmental Soil Sciences I (NIGK14043U), 7.5 ECTS and Environmental Soil Sciences II (NIGK14044U), 7.5 ECTS</td>
<td>The courses were restricted elective courses on the specialisation in Soil, Water and Biodiversity in the academic year 2016/17.</td>
</tr>
<tr>
<td></td>
<td>The courses were offered for the last time in the academic year 2016/17 and a third exam is offered in the academic year 2017/18.</td>
</tr>
<tr>
<td>Evolutionary Ecology (NBIA04061U), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialisation in Soil, Water and Biodiversity in the academic year 2014/15.</td>
</tr>
<tr>
<td></td>
<td>The course was offered for the last time in the academic year 2014/15 and a third exam is offered in the academic year 2015/16.</td>
</tr>
<tr>
<td>Exploratory Data Analysis/Chemometrics (NFOK14020), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialisation in Chemistry, Toxicology and Health in the academic year 2015/16.</td>
</tr>
<tr>
<td></td>
<td>The course was offered for the last time in the academic year 2015/16 and a third exam is offered in the academic year 2016/17.</td>
</tr>
<tr>
<td>Freshwater Ecology</td>
<td>The course was a restricted elective course on the specialisation in Soil, Water and Biodiversity in the academic year 2014/15.</td>
</tr>
<tr>
<td></td>
<td>The course was offered for the last time in the academic year 2014/15 and a third exam is offered in the academic year 2015/16.</td>
</tr>
<tr>
<td>Introduction to Consultancy (LOJK10291U), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialisation in Soil, Water and Biodiversity in the academic year 2016/17.</td>
</tr>
<tr>
<td></td>
<td>The course was offered for the last time in the academic year 2016/17.</td>
</tr>
<tr>
<td>In-vitro Techniques in Biochemistry and Pharmacology (SFKKB9091U), 7.5 ECTS</td>
<td>The course was restricted elective on the specialisation in Chemistry, Toxicology and Health in the academic years 2017/18, 2016/17 and 2015/16.</td>
</tr>
<tr>
<td></td>
<td>The course was offered for the last time in the academic year 2017/18.</td>
</tr>
<tr>
<td></td>
<td>The course is identical to In-vitro Techniques in Biochemistry and Pharmacology (SFKK18004U), 7.5 ECTS.</td>
</tr>
<tr>
<td>Land Use, Element Balances and Environmental Impact (NIGK14003U), 7.5 ECTS</td>
<td>The course was a restricted elective course in the academic year 2016/17 and earlier.</td>
</tr>
<tr>
<td></td>
<td>The course was offered for the last time in the academic year 2016/17.</td>
</tr>
<tr>
<td></td>
<td>The course is identical to Land Use and Environmental Modelling (NIGK170000U), 7.5 ECTS.</td>
</tr>
<tr>
<td>Macro Ecology (NBIK13006U), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialisation in Soil, Water and Biodiversity in the academic year 2014/15.</td>
</tr>
<tr>
<td></td>
<td>The course was offered for the last time in the academic year 2014/15 and a third exam is offered in the academic year 2015/16.</td>
</tr>
<tr>
<td>Course Name</td>
<td>Course Details</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Microbial Ecology (NBIA09049U), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialisation in Soil, Water and Biodiversity in the academic year 2015/16. The course was offered for the last time in the academic year 2015/16 and a third exam is offered in the academic year 2016/17.</td>
</tr>
<tr>
<td>Past Climate and Sea Level – Processes and Proxies 1 (NIGK10028U), 7.5 ECTS</td>
<td>The courses were restricted elective courses on the specialisation in Soil, Water and Biodiversity in the academic year 2016/17. The courses were offered for the last time in the academic year 2016/17 and a third exam is offered in the academic year 2017/18.</td>
</tr>
<tr>
<td>Past Climate and Sea Level – Processes and Proxies 2 (NIGK14029U), 7.5 ECTS</td>
<td>The courses were restricted elective courses on the specialisation in Soil, Water and Biodiversity in the academic year 2016/17. The courses were offered for the last time in the academic year 2016/17 and a third exam is offered in the academic year 2017/18.</td>
</tr>
<tr>
<td>Principles and Practice of Bioanalysis (SFKKA9021U), 7.5 ECTS</td>
<td>The course was restricted elective on the specialisation in Chemistry, Toxicology and Health in the academic years 2017/18, 2016/17 and 2015/16. The course was offered for the last time in the academic year 2017/18. The course is identical to Principles and Practice of Bioanalysis (SFKK18003U), 7.5 ECTS.</td>
</tr>
<tr>
<td>Remote Sensing of the Biogeosphere 1 (NIGK14045U), 7.5 ECTS</td>
<td>The courses were restricted elective courses on the specialisation in Soil, Water and Biodiversity in the academic year 2016/17. The courses were offered for the last time in the academic year 2016/17 and a third exam is offered in the academic year 2017/18.</td>
</tr>
<tr>
<td>Remote Sensing of the Biogeosphere 2 (NIGK14046U), 7.5 ECTS</td>
<td>The courses were restricted elective courses on the specialisation in Soil, Water and Biodiversity in the academic year 2016/17. The courses were offered for the last time in the academic year 2016/17 and a third exam is offered in the academic year 2017/18.</td>
</tr>
<tr>
<td>Research Planning (LFKK10270U), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialisation in Soil, Water and Biodiversity in the academic year 2017/18. The course was offered for the last time in the academic year 2017/18. The course is identical to Planning Interdisciplinary Research (NIFK18001U), 7.5 ECTS.</td>
</tr>
<tr>
<td>The Chemistry of Metal Ions in Biological Systems (NKEK14015U), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialisation in Chemistry, Toxicology and Health in the academic years 2015/16 and 2016/17. The course was offered for the last time in the academic year 2016/17 and a third exam is offered in the academic year 2017/18.</td>
</tr>
<tr>
<td>Theoretical Pathophysiology (SMOA09011U), 7.5 ECTS</td>
<td>The course was a restricted elective course on the specialisation in Chemistry, Toxicology and Health in the academic year 2015/16. The course was offered for the last time in the academic year 2015/16.</td>
</tr>
<tr>
<td>Toxicology and Ecotoxicology (STFKA001U), 7.5 ECTS</td>
<td>The course was compulsory on the specialisation in Chemistry, Toxicology and Health in the academic year 2016/17 and earlier. The course is identical to Toxicology and Ecotoxicology (STFKA002U), 7.5 ECTS.</td>
</tr>
<tr>
<td><strong>Toxicology and Ecotoxicology (STFKA002U), 7.5 ECTS</strong></td>
<td>The course was compulsory on the specialisation in Chemistry, Toxicology and Health in the academic year 2017/18. The course is identical to Toxicology and Ecotoxicology (NPLK18000U), 7.5 ECTS.</td>
</tr>
</tbody>
</table>
Appendix 3 Description of objectives for the thesis

After completing the thesis, the student should have:

Knowledge about:
- Scientific problems within the study programme’s subject areas.
- Methodologies/theories based on international research for defining 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.
- 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:
- Initiate and perform academic work in a research context.
- Solve complex problems and carry out development assignments in a work context.