# Programme-specific Section of the Curriculum for the MSc Programme in Agriculture

at the Faculty of Science, University of Copenhagen

2012 (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 Agriculture leads to a Master of Science (MSc) in Agriculture with the Danish title: Cand.agro. (candidatus/candidata agronomiae).

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 main objective of the programme is to educate graduates who, based on a theoretical and method-oriented knowledge of biological sciences, are capable of professionally conducting research, developing solutions and improving systems within the fields of plant science, production systems, natural resource use and environmental impacts.

2.2 General programme profile
The programme has two main specialisations: 1) Plant Science and 2) Production and Environment. Each specialisation requires a specific course combination and results in specific competences as described below.

Agriculture: Plant Science, Production and Environment is the key subject area of the programme.

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

The MSc Programme in Agriculture consists of the following elements:
- Specialisation, 120 ECTS.

The student must choose one of the following specialisations:
- Plant Science
- Production and Environment

2.4 Career opportunities
The MSc Programme in Agriculture qualifies students to become professionals within business functions and/or areas such as:
- A PhD programme
• National and international advising and consultancy in crop production, nature and environment related to land use and in the horticultural and agricultural sector.
• Research, innovation and product development of plants, plant protection and environmental technologies in public institutions, private enterprises or in own business.
• Policy development, implementation and administration related to plant production, nature, environment and related technologies in the public sector (ministries and municipalities) and in private stakeholder organizations, including international NGOs.
• Teaching and communication in universities or agricultural schools or to the broader public.

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 – generic competences
On completion of the programme, an MSc in Agriculture has acquired the following generic competence profile regardless of the chosen specialisation:

Skills in/to:
• Select and master appropriate up-to-date quantitative and qualitative methodologies for research.
• Analyze scientific literature and assess possibilities and limitations in the application of theories, methods and new technologies.
• Communicate effectively with specialists and non-specialists on scientific and professional issues, using appropriate information and communication tools in all work processes.

Competences in/to:
• Demonstrate capacity for independent thought, creativity and rigor in the application of knowledge and skills in professional situations.
• Plan and organize own research including problem identification, research question formulation, selection of experimental or empirical methods, data collection, data management and processing by the use of relevant digital tools, and analysis, interpretation and critical discussion of results.
• Evaluate and structure own learning processes and assume responsibility for continuous professional development.
• Formulate own information need and use relevant IT-based tools to search for and retrieve scientific literature.
• Display independence and integrity when working in complex settings on an individual basis, in teams as well as in cross-disciplinary and intercultural environments.

3.2 Specialisation: Plant Science
On completion of the programme, an MSc in Agriculture with a specialisation in Plant Science has in addition to the generic competence profile acquired the following:

Knowledge about:
• The theoretical basis and current research within fundamental and applied aspects of plant sciences.
• The physiological and molecular functions of plants from the cellular level to whole organism.
• Plant diversity and how genetic resources and modifications can be used in crop improvements.
• Why and how input of resources (such as fertilizer, water, pesticide and energy) influence productivity, product quality, and the environment.
• The significance for and impact of genetic crop improvement on society and environment.
• The role of agricultural and horticultural production in society and environment, internationally and nationally.
• Elements in production systems and their interactions in different contexts.

Skills in/to:
• Apply biological and ecological knowledge to develop management principles (pests, disease, weeds and nutrient) in crop production systems.
• Understand and apply state-of-the-art methodologies used in plant science.
• Analyze how internal and external factors affect plant physiology, growth and development and product quality.

Competences in/to:
• Evaluate and discuss the sustainability of agricultural and horticultural production systems.
• Transfer research results on molecular and physiological plant processes into approaches towards improving quality, utilization and processing of plants and plant products.

3.3 Specialisation: Production and Environment
On completion of the programme, an MSc in Agriculture with a specialisation in Production and Environment has in addition to the generic competence profile acquired the following:

Knowledge about:
• The theoretical basis and current research within fundamental and applied aspects of plant sciences, agricultural production and environmental impacts.
• Why and how input of resources (such as fertilizer, water, pesticide and energy) influence productivity, product quality, and the environment.
• Elements in production systems and their interactions in different contexts.
• The complexity of production systems and their role as providers of ecosystem goods and services.
• The importance of producers as decision makers in production systems, environment and management.
• The role of agricultural and horticultural production in society and environment, internationally and nationally.
• How legislative and regulatory measures at the national and international level can be utilized for reducing environmental impact of agricultural and horticultural systems.
• Value chains in agriculture and horticulture.

Skills in/to:
• Analyze interactions of plants with biotic and abiotic factors.
• Apply biological and ecological knowledge to develop management principles (pests, disease, weeds and nutrients) in crop production systems.
• Systematically analyze crop production: system productivity, profitability, resource efficiency and environmental impact.
• Master appropriate up-to-date methodologies and tools for quantifying environmental load and sustainability of production systems.
• Apply up-to-date tools for strategic planning and management of crop production.

**Competences in/to:**
• Evaluate and discuss the sustainability of agricultural and horticultural production systems
• Transfer research results on productivity, management, environmental processes and impacts into proposals for improving sustainability of agricultural and horticultural systems.
• Take responsibility for research-, adviser- or policy-related activities within agriculture, environment and food systems in real-life situations.

**4 Admission requirements**
With a Bachelor’s degree in Natural Resources with the specialisation in Plant Science from the University of Copenhagen the student is granted reserved access and guaranteed a place on the MSc Programme in Agriculture if the student applies in time to begin the MSc Programme within three years of the completion of the Bachelor's degree.

**4.1 Applicants with a Bachelor’s degree within the field of natural resources**
Applicants with a Bachelor’s degree in the following are directly academically qualified for admission to the MSc programme in Agriculture:
• Natural Resources from the University of Copenhagen
• Natural Resources, Agriculture, Horticulture, Agrobiology or Environmental Science from Danish, Nordic or international universities.
• Nature and Agricultural Management from Danish Business Academies (Professionsbachelor i Jordbrug).

**4.2 Applicants with a related Bachelor’s degree**
Applicants with a Bachelor’s degree in Biology, Geography and Geoinformatics, Biotechnology or similar from the University of Copenhagen as well as applicants with a related Bachelor’s degree from other Danish, Nordic or international universities may also be admitted if their programme includes two of the following three areas:
• Biology, plant science or ecology 7.5 ECTS
• Natural resources (soil, water, climate) 7.5 ECTS
• Economics or regulation 7.5 ECTS

**4.3 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 4.1-2.

**4.4 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](http://www.science.ku.dk).

**4.5 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 (§12-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 Plant Science from the University of Copenhagen with reserved access to the programme.
2) Applicants with a Bachelor’s degree in Natural Resources with a specialisation in Plant Science, Environmental Science, Nature Management or Environmental Economics from the University of Copenhagen.
3) Applicants with a Bachelor’s degree within the field of natural resources or a Bachelor’s degree within related areas.
4) 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 below in prioritised order):

- Academic qualifications and relevance of their study program, i.e. ECTS acquired within the three areas: biology, plant science or ecology, natural resources and economics or regulation.
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 Plant Science
The specialisation is set at 120 ECTS and consists of the following:
- Compulsory subject elements, 15 ECTS.
- Restricted elective subject elements, 37.5 ECTS (thesis 45 ECTS).
- Restricted elective subject elements, 22.5 ECTS (thesis, 60 ECTS).
- Elective subject elements 22.5 ECTS.
- Thesis, 45 or 60 ECTS.

6.1.1 Compulsory subject elements
All of the following subject elements are to be covered (15 ECTS):
- LPLK10392U Experimental Plant Science | Block 1+2 | 15 ECTS

6.1.2 Restricted elective subject elements
22.5 ECTS are to be covered as subject elements from the following list (thesis, 60 ECTS):
37.5 ECTS are to be covered as subject elements from the following list (thesis, 45 ECTS):
- NPLK14008U Plant Infection and Disease Management | Block 1 | 7.5 ECTS
- NKEA09010U Scientific Writing, Planning and Presentation | Block 1 | 7.5 ECTS
- NPLK14014U Fruit and Berry Crop Physiology and Quality | Block 1 | 7.5 ECTS
- NPLK14019U Plant Nutrition and Soil Fertility | Block 1 | 7.5 ECTS
- LBIK10135U Genome and Cell Biology | Block 1 | 7.5 ECTS
- NPLK21001U Plants in Populations and Communities | Block 1 | 7.5 ECTS
- LPLK10367U Tropical Crop Production | Block 1 | 7.5 ECTS
- NPLK16001U Advanced Crop Production | Block 1 | 7.5 ECTS
- NIGK14007U Tree Biology and Arboriculture | Block 1 | 7.5 ECTS
- LBIK10214U Frontiers in Plant Science | Block 1 | 7.5 ECTS
- NIFK14026U Entrepreneurship and Innovation | Block 1 | 7.5 ECTS
- NPLK14018U Climate Management in Plant Production and Research | Block 2 | 7.5 ECTS
- NMAK14003U Applied Statistics | Block 2 | 7.5 ECTS
- NPLK14011U Tropical Botany B | Block 2 | 7.5 ECTS
- NIGK21037U Biorefinery – From Plants to Bioenergy, Biochemicals, Biomaterials, and High Value Products | Block 2 | 7.5 ECTS
- NPLK18001U Applied Insect Ecology and Biological Control | Block 2 | 7.5 ECTS
- NPLK14006U Pesticide Use, Mode of Action and Ecotoxicology | Block 3 | 7.5 ECTS
- NPLK15003U Plant Genome Editing and Selection | Block 3 | 7.5 ECTS
- NDAK16003U Introduction to Data Science | Block 3 | 7.5 ECTS
- NPLK20000U Plant Ecophysiology in a Changing Climate | Block 3 | 7.5 ECTS
- NPLK20001U Cool Climate Viticulture and Enology | Block 4 | 7.5 ECTS
- LPLK10383U European Farm and Food Systems | Block 4 | 15 ECTS
- NIFK14026U Entrepreneurship and Innovation | Block 4 | 7.5 ECTS
- NFKK14006U Project in Practice | Block 1-5 | 15 ECTS
6.1.3 Elective subject elements
22.5 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 15 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 15 ECTS. 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.

Thesis preparation projects may not be included in the elective section of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

6.1.4 Thesis
The MSc Programme in Agriculture with a specialisation in Plant Science includes a thesis corresponding to 45 or 60 ECTS, as described in Appendix 2 to the shared curriculum. The thesis must be written within the academic scope of the programme.

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

For students admitted in September the academic mobility for the MSc Programme in Agriculture with a specialisation in Plant Science (thesis 45 ECTS) is placed in block 3+4 of the 1st year.

For students admitted in September the academic mobility in the MSc Programme in Agriculture with a specialisation in Plant Science (thesis 60 ECTS) is placed in block 3+4 of the 1st year.

For students admitted in February the academic mobility for the MSc Programme in Agriculture with a specialisation in Plant Science (thesis 45 ECTS) is placed in block 3+4 of the 1st year.

For students admitted in February the academic mobility in the MSc Programme in Agriculture with a specialisation in Plant Science (thesis 60 ECTS) is placed in block 3+4 of the 1st 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 Production and Environment
The specialisation is set at 120 ECTS and consists of the following:

- Compulsory subject elements, 22.5 ECTS.
- Restricted elective subject elements,
  - 45 ECTS (thesis, 30 ECTS)
  - 30 ECTS (thesis 45 ECTS)
- Elective subject elements, 22.5 ECTS.
- Thesis, 30 or 45 ECTS

6.2.1 Compulsory subject elements
All of the following subject elements are to be covered (22.5 ECTS):

- **NPLK16001U** Advanced Crop Production Block 1 7.5 ECTS
- **LPLK10383U** European Farm and Food Systems Block 4 15 ECTS

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

- **NPLK14019U** Plant Nutrition and Soil Fertility Block 1 7.5 ECTS
- **NPLK14008U** Plant Infection and Disease Management Block 1 7.5 ECTS
- **NKEA09010U** Scientific Writing, Planning and Presentation Block 1 7.5 ECTS
- **NPLK21001U** Plants in Populations and Communities Block 1 7.5 ECTS
- **NPLK14014U** Fruit and Berry Crop Physiology and Quality Block 1 7.5 ECTS
- **LPLK10367U** Tropical Crop Production Block 1 7.5 ECTS
- **NPLK14008U** Plant Infection and Disease Management Block 1 7.5 ECTS
- **NKEA09010U** Scientific Writing, Planning and Presentation Block 1 7.5 ECTS
- **NPLK21001U** Plants in Populations and Communities Block 1 7.5 ECTS
- **NPLK14004U** Life Cycle Assessment within Biological Production Systems Block 1 * 7.5 ECTS
- **LNAK10043U** Environmental Management in Europe Block 1+2 15 ECTS
- **LPLK10392U** Experimental Plant Science Block 1+2 15 ECTS
- **NPLK18001U** Applied Insect Ecology and Biological Contral Block 2 7.5 ECTS
- **NPLK14030U** Climate Change and Land Use Block 2 7.5 ECTS
- **NBIK14007U** Soil Biology Block 2 7.5 ECTS
- **NMAK14003U** Applied Statistics (AppStat) Block 2 7.5 ECTS
- **NPLK14018U** Climate Management in Plant Production and Research Block 2 7.5 ECTS
- **NIGK21037U** Biorefinery – From Plants to Bioenergy, Biochemicals, Biomaterials, and High Value Products Block 2 7.5 ECTS
- **LPLK10287U** Agroforestry Block 2 7.5 ECTS
- **NPLK14023U** Applied Agrohydrology Block 2 7.5 ECTS
- **NIGK17000U** Land Use and Environmental Modelling Block 3 7.5 ECTS
- **NPLK14006U** Pesticide Use, Mode of Action and Ecotoxicology Block 3 7.5 ECTS
- **NIGK14002U** Geographical Information Systems Block 3 7.5 ECTS
- **NDAK16003U** Introduction to Data Science Block 3 7.5 ECTS
- **NPLK20001U** Cool Climate Viticulture and Enology Block 4 7.5 ECTS
- **NIFK14026U** Entrepreneurship and Innovation Block 4 7.5 ECTS
- **NFKK14006U** Project in Practice Block 1-5 15 ECTS

* The course is not offered in 2021-22
6.2.3 Elective subject elements
22.5 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 15 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 15 ECTS. 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.

Thesis preparation projects may not be included in the elective section of the programme. The regulations are described in Appendix 6 to the shared section of the curriculum.

6.2.4 Thesis
The MSc Programme in Agriculture with a specialisation in Production and Environment 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.

6.2.5 Academic mobility
The curriculum makes it possible to follow subject elements and conduct projects outside the Faculty of Science.

For students admitted in September the academic mobility for the MSc Programme in Agriculture with a specialisation in Production and Environment (thesis 30 ECTS) is placed in block 1+2 of the 2nd year.

For students admitted in September the academic mobility in the MSc Programme in Agriculture with a specialisation in Production and Environment (thesis 45 ECTS) is placed in block 3+4 of the 1st year.

For students admitted in February the academic mobility for the MSc Programme in Agriculture with a specialisation in Production and Environment (thesis 30 ECTS) is placed in block 3+4 of the 2nd year.

For students admitted in February the academic mobility in the MSc Programme in Agriculture with a specialisation in Production and Environment (thesis 45 ECTS) is placed in block 1+2 of the 1st year.

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

In addition the student has the possibility to arrange similar academic mobility in other parts of the programme.
7 Exemptions
In exceptional circumstances, the study board may grant exemptions from the rules in the curriculum specified solely by the Faculty of Science.

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

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

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

Notification about amendments that tighten the admission requirements for the programme will be published online at www.science.ku.dk 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):

Specialisation: Plant Science (thesis 45 ECTS)

<table>
<thead>
<tr>
<th>Specialisation: Plant Science (thesis 45 ECTS)</th>
<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>Experimental Plant Science</td>
<td>Restricted elective</td>
<td>Restricted elective</td>
<td>Elective</td>
</tr>
<tr>
<td>Restricted elective</td>
<td>Restricted elective</td>
<td>Elective</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td>2nd year</td>
<td>Elective</td>
<td>Thesis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restricted elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Specialisation: Plant Science (thesis 60 ECTS)

<table>
<thead>
<tr>
<th>Specialisation: Plant Science (thesis 60 ECTS)</th>
<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>Experimental Plant Science</td>
<td>Restricted elective</td>
<td>Restricted elective</td>
<td>Elective</td>
</tr>
<tr>
<td>Elective</td>
<td>Restricted elective</td>
<td>Elective</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td>2nd year</td>
<td>Thesis</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Specialisation: Production and Environment (thesis 30 ECTS)

<table>
<thead>
<tr>
<th>Specialisation: Production and Environment (thesis 30 ECTS)</th>
<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>Advanced Crop Production</td>
<td>Restricted elective</td>
<td>Elective</td>
<td>European Farm and Food Systems</td>
</tr>
<tr>
<td>Restricted elective</td>
<td>Elective</td>
<td>Elective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd year</td>
<td>Restricted elective</td>
<td>Restricted elective</td>
<td>Thesis</td>
<td></td>
</tr>
<tr>
<td>Restricted elective</td>
<td>Restricted elective</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Compulsory  ❑ Restricted elective  ❑ Elective  ❑ The table illustrates the recommended academic progression. The student is allowed to plan an alternative progression within the applicable rules.
### Specialisation: Production and Environment (thesis 45 ECTS)

<table>
<thead>
<tr>
<th></th>
<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>Advanced Crop Production</td>
<td>Restricted elective</td>
<td>Elective</td>
<td>European Farm and Food Systems</td>
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<td></td>
<td>Restricted elective</td>
<td>Elective</td>
<td>Elective</td>
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<tr>
<td>2nd year</td>
<td>Restricted elective</td>
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<tr>
<td></td>
<td>Restricted elective</td>
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</tbody>
</table>

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

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

#### Specialisation: Plant Science (thesis 45 ECTS)*

<table>
<thead>
<tr>
<th></th>
<th>Block 3</th>
<th>Block 4</th>
<th>Block 1</th>
<th>Block 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td>Restricted elective</td>
<td>Restricted elective</td>
<td>Experimental Plant Science</td>
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<tr>
<td></td>
<td>Elective</td>
<td>Elective</td>
<td>Restricted elective</td>
<td>Restricted elective</td>
</tr>
<tr>
<td>2nd year</td>
<td>Restricted elective</td>
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<tr>
<td></td>
<td>Elective</td>
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</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)

#### Specialisation: Plant Science (thesis 60 ECTS)*

<table>
<thead>
<tr>
<th></th>
<th>Block 3</th>
<th>Block 4</th>
<th>Block 1</th>
<th>Block 2</th>
</tr>
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<tbody>
<tr>
<td>1st year</td>
<td>Restricted elective</td>
<td>Restricted elective</td>
<td>Experimental Plant Science</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.

*This table is only relevant for students who begin the MSc Programme in February (block 3)
### Specialisation: Production and Environment (thesis 30 ECTS)*

<table>
<thead>
<tr>
<th>Block 3</th>
<th>Block 4</th>
<th>Block 1</th>
<th>Block 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restricted elective</td>
<td>European Farm and Food Systems</td>
<td>Advanced Crop Production</td>
<td>Elective</td>
</tr>
<tr>
<td>Restricted elective</td>
<td></td>
<td>Restricted elective</td>
<td>Elective</td>
</tr>
<tr>
<td>2nd year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>Restricted elective</td>
<td></td>
<td>Thesis</td>
</tr>
<tr>
<td>Restricted elective</td>
<td>Restricted elective</td>
<td></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)

### Specialisation: Production and Environment (thesis 45 ECTS)*

<table>
<thead>
<tr>
<th>Block 3</th>
<th>Block 4</th>
<th>Block 1</th>
<th>Block 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>European Farm and Food Systems</td>
<td>Advanced Crop Production</td>
<td>Restricted elective</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>Restricted elective</td>
<td>Restricted elective</td>
</tr>
<tr>
<td>2nd year</td>
<td></td>
<td></td>
<td>Thesis</td>
</tr>
<tr>
<td>Restricted elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td></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)
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.

Different competence profiles may apply to students admitted to the programme in different academic years. Competence profiles applicable to previous admissions can be found in the Revision History for Competence Profiles at SCIENCE.

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.

1.1 Plant Science

<table>
<thead>
<tr>
<th>Restricted elective subject elements</th>
<th>22.5 ECTS are to be covered as subject elements from the following list (thesis, 60 ECTS):</th>
<th>37.5 ECTS are to be covered as subject elements from the following list (thesis, 45 ECTS):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Restricted elective subject elements offered as part of the specialisation in Plant Science in this curriculum (see above)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• NPLK14009U Plants in Populations Communities and Ecosystems Discontinued* 7.5 ECTS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• LPLK10360U From Plants to Bioenergy Discontinued* 7.5 ECTS</td>
<td></td>
</tr>
</tbody>
</table>

* See course specific changes below.

1.2 Production and Environment

<table>
<thead>
<tr>
<th>Restricted elective subject elements</th>
<th>30 ECTS are to be covered as subject elements from the following list (thesis, 45 ECTS):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Restricted elective subject elements offered as part of the specialisation in Plant Science in this curriculum (see above)</td>
</tr>
<tr>
<td></td>
<td>• NPLK14009U Plants in Populations Communities and Ecosystems Discontinued* 7.5 ECTS</td>
</tr>
<tr>
<td></td>
<td>• LPLK10360U From Plants to Bioenergy Discontinued* 7.5 ECTS</td>
</tr>
</tbody>
</table>

* See course specific changes below.

2 General changes for students admitted in the academic year 2019/20

Students admitted to the MSc Programme in the academic year 2019/20 must finish the programme as listed in the curriculum above with the following exceptions.

2.1 Plant Science

<table>
<thead>
<tr>
<th>Restricted elective subject elements</th>
<th>22.5 ECTS are to be covered as subject elements from the following list (thesis, 60 ECTS):</th>
<th>37.5 ECTS are to be covered as subject elements from the following list (thesis, 45 ECTS):</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>• Restricted elective subject elements offered as part of the specialisation in Plant Science in this curriculum (see above)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• LPLK10382U Advanced Plant Ecophysiology Discontinued* 7.5 ECTS</td>
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</tr>
<tr>
<td></td>
<td>• NNEK14006U Cool Climate Viticulture and Enology Discontinued* 7.5 ECTS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• LPLK10360U From Plants to Bioenergy Discontinued* 7.5 ECTS</td>
<td></td>
</tr>
</tbody>
</table>
2.2 Production and Environment

Restricted elective subject elements

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

- Restricted elective subject elements offered as part of the specialisation in Plant Science in this curriculum (see above)

<table>
<thead>
<tr>
<th>Subject Elements</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic and Regional Food Systems (NIFK16004U)</td>
<td>Discontinued* 7.5 ECTS</td>
</tr>
<tr>
<td>Cool Climate Viticulture and Enology (NNEK14006U)</td>
<td>Discontinued* 7.5 ECTS</td>
</tr>
<tr>
<td>From Plants to Bioenergy (LPLK10360U)</td>
<td>Discontinued* 7.5 ECTS</td>
</tr>
</tbody>
</table>

* See course specific changes below.

3 Course specific changes

<table>
<thead>
<tr>
<th>Discontinued course</th>
<th>Interim arrangement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool Climate Viticulture and Enology (NNEK14006U), 7.5 ECTS</td>
<td>The course was restricted elective in both specialisations in the academic year 2019/20 and earlier. Offered for the last time: 2019/20. Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2020/21. The course is replaced by Cool Climate Viticulture and Enology (NPLK20001U), 7.5 ECTS</td>
</tr>
<tr>
<td>From Plants to Bioenergy (LPLK10360), 7.5 ECTS</td>
<td>The course was restricted elective in both specialisations in the academic year 2020/21 and earlier. Offered for the last time: 2020/21. The course is replaced by NIGK21037U Biorefinery – From Plants to Bioenergy, Biochemicals, Biomaterials, and High Value Products</td>
</tr>
<tr>
<td>Organic and Regional Food Systems (NIFK16004U), 7.5 ECTS</td>
<td>The course was restricted elective on the specialisations in Production and Environment 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</td>
</tr>
<tr>
<td>Plants in Populations Communities and Ecosystems (NPLK14009U), 7.5 ECTS</td>
<td>The course was restricted elective in both specialisations in the academic year 2020/21 and earlier. Offered for the last time: 2020/21. The course is identical to NPLK21001U Plants in Populations and Communities 7.5 ECTS.</td>
</tr>
</tbody>
</table>
Appendix 3 Description of objectives for the thesis

Knowledge about:
- Scientific problems within the study programme’s subject areas and the student’s field of specialisation.
- A suitable combination of methodologies and theories based on international research for use in his/her work with the problem formulation.

Skills in/to:
- 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.
- 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.
- 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

Competences in/to:
- Initiating and performing academic work in a research context.
- Identifying, proposing and preparing proposals to solving complex problems and improving situations based on independently acquired knowledge at a high academic level.
- Demonstrating reflective and critical thinking about the choices made and the possibilities and limitations of science in relation to a specific problem.
- Solving complex problems in a professional context.