



**Programme-specific Section of the  
Curriculum for the MSc Programme in  
Agriculture  
at the Faculty of Science, University of Copenhagen  
2012 (Rev. 2024)**

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## 1 Title, affiliation and language

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

### 1.1 Title

The MSc Programme in 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 and digital literacy, are capable of professionally conducting research, developing sustainable 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 sustainable 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 for sustainable solutions 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

Graduates holding an MSc in Agriculture have acquired the following 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.
- Apply knowledge to find innovative solutions based on sustainable and climate neutral development

#### 3.2 Specialisation: Plant Science

In addition to the generic competence profile, graduates holding an MSc in Agriculture with a specialisation in Plant Science have 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 plant and crop 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**

In addition to the generic competence profile, graduates holding an MSc in Agriculture with a specialisation in Production and Environment have 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 plant and crop 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**

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

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

- Natural Resources (*naturressourcer*) with the specialisation in Plant Science from University of Copenhagen (reserved access)
- Natural Resources from University of Copenhagen
- Plant and Food Science from Aarhus University

### **4.2 Other Bachelor's degrees**

Applicants with a Bachelor's degree, Professional Bachelor's degree or equivalent from Danish or international universities other than those listed in 4.1 are qualified for admission to the MSc Programme in Agriculture if the programme includes two of the three following 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 assessed 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 Programme are assessed exclusively on the basis of the qualifying Bachelor's degree. Supplementary subject elements passed between the completion of the Bachelor's programme and the admission to the MSc Programme cannot be included in the overall assessment.

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

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

#### 5 Prioritisation of applicants

With a Bachelor's degree in 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.

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

- Academic qualifications and relevance of their study programme, 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 30 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):

Course Code	Course Title	Block	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):			
Course Code	Course Title	Block	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
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
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
NPLK20000U	Plant Ecophysiology in a Changing Climate	Block 3	7.5 ECTS
NPLK22002U	Data Processing in Environmental Science and Agriculture	Block 3	7.5 ECTS
LBIK10214U	Frontiers in Plant Science	Block 4	7.5 ECTS
NPLK20001U	Cool Climate Viticulture and Enology	Block 4	7.5 ECTS
NPLK23001U	Farm and Food Systems	Block 4	15 ECTS
NIFK14026U	Entrepreneurship and Innovation	Block 4	7.5 ECTS
	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. See 6.1.4 Projects.

### 6.1.4 Projects

- 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.
- Project in practice may be included in the elective section or restricted elective section of the programme with 15 ECTS. 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 project must be assessed with a grade (7-point grading scale). 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.



### 6.1.5 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.

### 6.1.6 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 1<sup>st</sup> 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 1<sup>st</sup> 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 1<sup>st</sup> 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 1<sup>st</sup> year.

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

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

## 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):

Course Code	Course Title	Block	ECTS
NPLK16001U	Advanced Crop Production	Block 1	7.5 ECTS
NPLK23001U	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):

Course Code	Course Title	Block	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
NIFK14026U	Entrepreneurship and Innovation	Block 1	7.5 ECTS
NPLK14004U	Life Cycle Assessment within Biological Production Systems	Block 1	7.5 ECTS
NPLK22000U	Environmental Management in Europe	Block 2	7.5 ECTS
LPLK10392U	Experimental Plant Science	Block 1+2	15 ECTS
NPLK18001U	Applied Insect Ecology and Biological Control	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
NIGK17016U	Experimental Soil Science	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
NPLK22002U	Data Processing in Environmental Science and Agriculture	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
	Project in Practice	Block 1-5	15 ECTS

### **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. See 6.2.3 Projects

### **6.2.3 Projects**

- Projects outside the course scope may be included in the elective section of the programme with up to 15 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective or restricted elective section of the programme with 15 ECTS. Project 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 exam must be assessed with a grade (7-point grading scale). 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.

### **6.2.5 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.

### **6.2.6 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 2<sup>nd</sup> 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 1<sup>st</sup> 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 2<sup>nd</sup> 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 1<sup>st</sup> year.

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

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

## **7 Exemptions**

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

## **8. Commencement etc.**

### **8.1 Validity**

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

### **8.2 Transfer**

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

### **8.3 Amendment**

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

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

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

## Appendix 1 The recommended academic progression

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

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

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

	Block 1	Block 2	Block 3	Block 4
1st year	Experimental Plant Science		Restricted elective	Restricted elective
	Restricted elective	Restricted elective	Elective	Elective
2nd year	Elective	Thesis		
	Restricted elective			

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

	Block 1	Block 2	Block 3	Block 4
1st year	Experimental Plant Science		Restricted elective	Restricted elective
	Elective	Restricted elective	Elective	Elective
2nd year	Thesis			

#### Specialisation: Production and Environment (thesis 30 ECTS)

	Block 1	Block 2	Block 3	Block 4
1st year	Advanced Crop Production	Restricted elective	Elective	Farm and Food Systems
	Restricted elective	Elective	Elective	
2nd year	Restricted elective	Restricted elective	Thesis	
	Restricted elective	Restricted elective		

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

	Block 1	Block 2	Block 3	Block 4
1st year	Advanced Crop Production	Restricted elective	Elective	Farm and Food Systems
	Restricted elective	Elective	Elective	
2nd year	Restricted elective	Thesis		
	Restricted elective			

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

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

	Block 3	Block 4	Block 1	Block 2
1st year	Restricted elective	Restricted elective	Experimental Plant Science	
	Elective	Elective	Restricted elective	Restricted elective
2nd year	Restricted elective	Thesis		
	Elective			

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

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

	Block 3	Block 4	Block 1	Block 2
1st year	Restricted elective	Restricted elective	Experimental Plant Science	
	Elective	Elective	Elective	Restricted elective
2nd year	Thesis			

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

### Specialisation: Production and Environment (thesis 30 ECTS)\*

	Block 3	Block 4	Block 1	Block 2
1st year	Restricted elective	Farm and Food Systems	Advanced Crop Production	Elective
	Restricted elective		Restricted elective	Elective
2nd year	Elective	Restricted elective	Thesis	
	Restricted elective	Restricted elective		

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

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

	Block 3	Block 4	Block 1	Block 2
1st year	Elective	Farm and Food Systems	Advanced Crop Production	Restricted elective
	Elective		Restricted elective	Restricted elective
2nd year	Restricted elective	Thesis		
	Elective			

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

## Appendix 2 Interim arrangements

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

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

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

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

#### 1.1 Plant Science

##### 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):			
Restricted elective subject elements offered as part of the specialisation in Plant Science in this curriculum (see above)			
NDAK16003U	Introduction to Data Science	Block 3	7.5 ECTS
LPLK10383U	European Farm and Food Systems	Discontinued*	15 ECTS

\* See discontinued courses below.

#### 1.2 Production and Environment

**Table - Production and Environment (thesis 30 ECTS)**

	Block 1	Block 2	Block 3	Block 4
1st year	Advanced Crop Production	Restricted elective	Elective	<i>European Farm and Food Systems</i>
	Restricted elective	Elective	Elective	
2nd year	Restricted elective	Restricted elective	Thesis	
	Restricted elective	Restricted elective		

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

**Table - Production and Environment (thesis 45 ECTS)**

	Block 1	Block 2	Block 3	Block 4
1st year	Advanced Crop Production	Restricted elective	Elective	<i>European Farm and Food Systems</i>
	Restricted elective	Elective	Elective	
2nd year	Restricted elective	Thesis		
	Restricted elective			

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

**Table - Production and Environment (thesis 30 ECTS)\***

	Block 3	Block 4	Block 1	Block 2
1st year	Restricted elective	<i>European Farm and Food Systems</i>	Advanced Crop Production	Elective
	Restricted elective		Restricted elective	Elective

	Block 3	Block 4	Block 1	Block 2
2nd year	Elective	Restricted elective	Thesis	
	Restricted elective	Restricted elective		

\*This table is only relevant for students who begin the MSc Programme in February (block 3)  
*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table - Production and Environment (thesis 45 ECTS)\***

	Block 3	Block 4	Block 1	Block 2
1st year	Elective	<i>European Farm and Food Systems</i>	Advanced Crop Production	Restricted elective
	Elective		Restricted elective	Restricted elective
2nd year	Restricted elective	Thesis		

\*This table is only relevant for students who begin the MSc Programme in February (block 3)  
*Subject elements in italics have been discontinued. See discontinued courses below.*

### 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 Production and Environment in this curriculum (see above)			
NDAK16003U	Introduction to Data Science	Block 3	7.5 ECTS
NPLK19001U	Modelling of Soil-Plant-Atmosphere Systems	Discontinued*	7.5 ECTS

\* See discontinued courses below.

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

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

### 2.1 Plant Science

#### 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):			
Restricted elective subject elements offered as part of the specialisation in Plant Science in this curriculum (see above)			
NIGK14007U	Tree Biology and Arboriculture	Block 1	7.5 ECTS
NDAK16003U	Introduction to Data Science	Block 3	7.5 ECTS
NPLK14011U	Tropical Botany B	Discontinued*	7.5 ECTS
LPLK10383U	European Farm and Food Systems	Discontinued*	15 ECTS

\* See discontinued courses below.

### 2.2 Production and Environment

**Table - Production and Environment (thesis 30 ECTS)**

	Block 1	Block 2	Block 3	Block 4
1st year	Advanced Crop Production	Restricted elective	Elective	<i>European Farm and Food Systems</i>
	Restricted elective	Elective	Elective	
2nd year	Restricted elective	Restricted elective	Thesis	



	Block 1	Block 2	Block 3	Block 4
	Restricted elective	Restricted elective		

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

**Table - Production and Environment (thesis 45 ECTS)**

	Block 1	Block 2	Block 3	Block 4
1st year	Advanced Crop Production	Restricted elective	Elective	<i>European Farm and Food Systems</i>
	Restricted elective	Elective	Elective	
2nd year	Restricted elective	Thesis		
	Restricted elective			

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

**Table - Production and Environment (thesis 30 ECTS)\***

	Block 3	Block 4	Block 1	Block 2
1st year	Restricted elective	<i>European Farm and Food Systems</i>	Advanced Crop Production	Elective
	Restricted elective		Restricted elective	Elective
2nd year	Elective	Restricted elective	Thesis	
	Restricted elective	Restricted elective		

\*This table is only relevant for students who begin the MSc Programme in February (block 3)  
*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table - Production and Environment (thesis 45 ECTS)\***

	Block 3	Block 4	Block 1	Block 2
1st year	Elective	<i>European Farm and Food Systems</i>	Advanced Crop Production	Restricted elective
	Elective		Restricted elective	Elective
2nd year	Restricted elective	Thesis		
	Restricted elective			

\*This table is only relevant for students who begin the MSc Programme in February (block 3)  
*Subject elements in italics have been discontinued. See discontinued courses below.*

### 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 Production and Environment in this curriculum (see above)			
NDAK16003U	Introduction to Data Science	Block 3	7.5 ECTS
LNAK10043U	Environmental Management in Europe	Discontinued*	15 ECTS

\* See discontinued courses below.

### 3 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.

#### 3.1 Plant Science

##### 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):			
Restricted elective subject elements offered as part of the specialisation in Plant Science in this curriculum (see above)			
NIGK14007U	Tree Biology and Arboriculture	Block 1	7.5 ECTS
NDAK16003U	Introduction to Data Science	Block 3	7.5 ECTS
NPLK14009U	Plants in Populations Communities and Ecosystems	Discontinued*	7.5 ECTS
LPLK10360U	From Plants to Bioenergy	Discontinued*	7.5 ECTS
NPLK14011U	Tropical Botany B	Discontinued*	7.5 ECTS
LPLK10383U	European Farm and Food Systems	Discontinued*	15 ECTS
NPLK15003U	Plant Genome Editing and Selection	Discontinued*	7.5 ECTS

\* See discontinued courses below.

#### 3.2 Production and Environment

**Table - Production and Environment (thesis 30 ECTS)**

	Block 1	Block 2	Block 3	Block 4
1st year	Advanced Crop Production	Restricted elective	Elective	<i>European Farm and Food Systems</i>
	Restricted elective	Elective	Elective	
2nd year	Restricted elective	Restricted elective	Thesis	
	Restricted elective	Restricted elective		

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

**Table - Production and Environment (thesis 45 ECTS)**

	Block 1	Block 2	Block 3	Block 4
1st year	Advanced Crop Production	Restricted elective	Elective	<i>European Farm and Food Systems</i>
	Restricted elective	Elective	Elective	
2nd year	Restricted elective	Thesis		
	Restricted elective			

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

**Table - Production and Environment (thesis 30 ECTS)\***

	Block 3	Block 4	Block 1	Block 2
1st year	Restricted elective	<i>European Farm and Food Systems</i>	Advanced Crop Production	Elective
	Restricted elective		Restricted elective	Elective

	Block 3	Block 4	Block 1	Block 2
2nd year	Elective	Restricted elective	Thesis	
	Restricted elective	Restricted elective		

\*This table is only relevant for students who begin the MSc Programme in February (block 3)  
*Subject elements in italics have been discontinued. See discontinued courses below.*

**Table - Production and Environment (thesis 45 ECTS)\***

	Block 3	Block 4	Block 1	Block 2
1st year	Elective	<i>European Farm and Food Systems</i>	Advanced Crop Production	Restricted elective
	Elective		Restricted elective	Elective
2nd year	Restricted elective	Thesis		
	Restricted elective			

\*This table is only relevant for students who begin the MSc Programme in February (block 3)  
*Subject elements in italics have been discontinued. See discontinued courses below.*

### 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 Production and Environment in this curriculum (see above)				
NDAK16003U	Introduction to Data Science		Block 3	7.5 ECTS
NPLK14009U	Plants in Populations Communities and Ecosystems		Discontinued*	7.5 ECTS
LPLK10360U	From Plants to Bioenergy		Discontinued*	7.5 ECTS
LNAK10043U	Environmental Management in Europe		Discontinued*	15 ECTS
NPLK19001U	Modelling of Soil-Plant-Atmosphere Systems		Discontinued*	7.5 ECTS

\* See discontinued courses below.

### 4 Discontinued courses

Course Code	Course Title	ECTS	Interim arrangement
LNAK10043U	Environmental Management in Europe	15	The course was restricted elective on the specialisation in Production and Environment in the academic year 2021/22 and earlier.  Offered for the last time: 2021/22 Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2022/23
LPLK10383U	European Farm and Food Systems	15	This course was restricted elective on the specialisation Plant Science in the academic year 2022/23 and earlier and it was compulsory on the specialisation in Production and Environment in the academic year 2022/23 and earlier.  Offered for the last time: 2022/23  The course is identical to NPLK23001U Farm and Food Systems.

LPLK10360	From Plants to Bioenergy	7.5	The course was restricted elective in both specialisations in the academic year 2020/21 and earlier.  Offered for the last time: 2020/21.
NDAK16003U	Introduction to Data Science	7.5	The course was restricted elective in both specialisations in the academic year 2022/23 and earlier.
NPLK19001U	Modelling of Soil-Plant-Atmosphere Systems	7.5	The course was restricted elective on the specialisation in Production and Environment in the academic year 2022/23  Offered for the last time: 2022/23 Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2023/24
NPLK15003U	Plant Genome Editing and Selection	7.5	The course was restricted elective on the specialisation in Plant Science in the academic year 2020/21 and earlier.  Offered for the last time: 2021/22 Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2022/23.
NPLK14011U	Tropical Botany B	7.5	The course was restricted elective on the specialisations in Plant Science in the academic year 2021/22 or earlier.  Offered for the last time: 2021/22 Last exam if applicable (cf. SCIENCE's Teaching and exam rules): 2022/23
NPLK14009U	Plants in Populations Communities and Ecosystems	7.5	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

## 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.