



Programme-specific Section of the Curriculum for the MSc Programme in Environmental and Natural Resource Economics at the Faculty of Science, University of Copenhagen 2013 (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 Environmental and Natural Resource Economics leads to a Master of Science (MSc) in Environmental and Natural Resource Economics with the Danish title: *Cand.scient.oecon (candidatus/candidata scientiarum oeconomiae)*.

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 programme is to offer students a coherent and profession-oriented education within the field of environmental and natural resource economics. On completion of the programme, participants will have acquired the skills required to conduct a broad spectrum of environmental and natural resource economic analyses, for instance in the context of implementing and operationalising the UN Sustainable Development Goals in practice. Among other things, students will become familiar with environmental policy and project appraisal, and such policy issues as how to use economic instruments to control pollution problems and how to optimise the extraction of natural resources over time.

2.2 General programme profile

Environmental and natural resource economics is the key subject area of the programme.

During the programme, students will develop broad and professional competences enabling them to:

- Understand economic theory and assess the validity of economic statements.
- Perform qualitative as well as quantitative analyses based on the theory and methodology of environmental and natural resource economics, applied in multidisciplinary settings, and using state-of-the-art statistical and analytical techniques and a multitude of data sources.
- Understand basic information on environmental phenomena in natural science.
- Assess the statements of environmental and natural resource economics in a comprehensive political, social and ethical context.

A number of compulsory discipline-oriented courses ensures that participants obtain a comprehensive and coherent understanding of environmental and natural resource economics. An introduction to applied ecology and management of ecosystems keeps the focus on the physical and biological conditions and processes underlying environmental and natural resource policy problems.

The programme offered is a two-year Master of Science degree conducted in English. The core curriculum is focused on the theoretical and methodological aspects of environmental and natural resource economics. The programme is open to students holding a BSc in Social or Natural Science and a good knowledge of mathematics, statistics and basic economics as well as basic digital competences.

Admission of students from all around the world with different scientific backgrounds provides the programme with an interdisciplinary anchoring and an international atmosphere. Throughout, the programme maintains an emphasis on incorporating the biophysical aspects of environmental problems into the framework of environmental and resource economics analysis. Teaching is given in the form of lectures, seminars and tutoring in relation to project work. Project work is often carried out in groups.

2.3 General structure of the programme

The MSc Programme is set at 120 ECTS.

There are no defined specialisations in this programme.

2.4 Career opportunities

The MSc Programme in Environmental and Natural Resource Economics qualifies students to become professionals within business functions and/or areas such as:

- A PhD programme
- Environmental and resource economic analyses – for example applied to the implementation of environmental policy instruments in the overall context of sustainability.
- Environmental policy and project appraisal.
- Jobs within government agencies.
- Jobs within research institutes.
- Jobs within consulting companies.
- Jobs within industry and private businesses, at corporate level as well as in innovative startups.
- Graduates from this programme will often be in charge of solving broad-spectrum environmental challenges that require interplay between economics, natural science and law.

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 Generic competence profile

Graduates holding an MSc in Environmental and Natural Resource Economics have acquired the following:

Knowledge about:

- The welfare economic foundation of environmental and natural resource economics.
- Environmental and natural resource economic disciplines and the analytical methodologies applied within these disciplines.
- The theoretical frameworks and value concepts underlying environmental and natural resource economics as compared to competing theoretical frameworks and conceptualisations of value.

- Other economic disciplines relevant to the analysis of environmental and natural resource problems.
- Relevant environmental technology and phenomena as well as biophysical processes within natural science.
- Major environmental policy issues and discussions from local to global level.
- Relevant policy instruments to manage environmental problems and the utilisation/extraction of natural resources.

Skills in/to:

- Carry out quantitative as well as qualitative analyses of environmental and natural resource policy problems based on appropriate theories and methods and using relevant digital technology both for data collection, handling and analysis.
- Use state-of-the-art statistical and analytical techniques for environmental policy and project appraisals such as economic valuation methods and cost-benefit analysis.
- Integrating new scientific findings in professional or research activities at a high academic level.
- Discuss alternative economic theories and recommendations regarding environmental and natural resource issues, e.g. in relation to sustainability.
- Showing awareness of and entering into scientific discussions and political disputes within areas of interest to environmental and natural resource economics.
- Critically assess the validity and limitations of digital information and data as well as economic theories, models and methodologies when dealing with different scientific problems.
- Communicate issues regarding environmental and natural resource economics effectively to specialist and non-specialist audiences, at a variety of levels.

Competences in/to:

- Assessing environmental and natural resource policy and economic problems and proposing sustainable solutions based on a solid theoretical foundation in complex economic, biological, political, social and ethical contexts.
- Adapting different analytical approaches to unforeseen problems.
- Plan and coordinate projects.
- Working effectively in teams or on an individual basis in multi-disciplinary settings, exercising initiative and personal and management responsibilities as required.
- Valuing lifelong learning as a principle and demonstrate the independent learning ability to structure ongoing learning processes effectively.

4 Admission requirements

4.1 Bachelor's degrees that automatically fulfil the academic requirements

Applicants with one of the following Bachelor's degrees automatically fulfil the academic requirements for admission to the MSc Programme in Environmental and Natural Resource Economics:

- Natural Resources (*naturressourcer*) with the specialisation in Environmental Economics from University of Copenhagen (reserved access)
- Agricultural Economics/Environmental and Food Economics (*jordbrugsøkonomi/miljø- og fødevarerøkonomi*) from University of Copenhagen
- Economics (*økonomi*) from University of Copenhagen
- Mathematics-Economics (*matematik-økonomi*) from University of Copenhagen
- Computer Science and Economics (*datalogi-økonomi*) from University of Copenhagen

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 Environmental and Natural Resource Economics if the programme includes the following:

- Microeconomics (at least 22.5 ECTS)
- Statistics (at least 7.5 ECTS)
- Econometrics (at least 7.5 ECTS)
- Mathematics (at least 7.5 ECTS)

For informational purpose - Bachelor's degrees that have previously been assessed as qualifying meeting the specified ECTS

Applicants with a Bachelor's degree in Natural Resources with a specialisation in Plant Science, Environmental Science or Nature Management from the University of Copenhagen are qualified for admission if the programme includes the following:

- LMAB10069U Statistical Data Analysis 1 (*Statistisk dataanalyse 1*) 7.5 ECTS
- NIFB14004U Environmental and Natural Resource Economics, 7.5 ECTS
- NIFB14014U Econometrics (*Økonometri*) 7.5 ECTS
- LOJB10259U Micro Economics (*Mikroøkonomi*) 7.5 ECTS
- LOJB10225U Principles of Economics (*Indledende økonomi*) 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 4.1-3.

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.

4.6 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, students lacking the necessary credits in the field of Econometrics may be admitted on the condition that they pass the approved university level 7.5 ECTS Econometrics subject element (Introduction to Econometrics NIFB22001U), before the start date of the study programme.

Also, 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 program. 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 Environmental Economics from University of Copenhagen the student is granted reserved access and guaranteed a place on the MSc Programme in Environmental and Natural Resource Economics if the student applies in time to begin the MSc Programme within three years of the completion of the Bachelor's degree.

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

- Total number of ECTS in courses in microeconomics, statistics, econometrics and mathematics, with a special weight on microeconomics.
- Grades in relevant courses in economics, statistics, econometrics and mathematics.

6 Structure of the programme

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

6.1 Programme components

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

- Compulsory subject elements, 52.5 ECTS.
- Restricted elective subject elements,
 - 22.5 ECTS (thesis 30 ECTS).
 - 7.5 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 (52.5 ECTS):			
Course Code	Course Title	Block	ECTS
LOJK10272U	Applied Econometrics	Block 1	7.5 ECTS
NIFK13003U	Applied Environmental and Natural Resource Economics	Block 4	7.5 ECTS
LOJK10248U	Economic Valuation Methods and Cost-Benefit Analysis	Block 3	7.5 ECTS
NIFK14003U	Incentives and Regulation	Block 3	7.5 ECTS
LOJK10229U	Natural Resource Economics	Block 2	7.5 ECTS
NIGK13008U	Ecology and Ecosystems Science in relation to Environmental Economics	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, 30 ECTS)			
7.5 ECTS are to be covered as subject elements from the following list (thesis, 45 ECTS)			
Course Code	Course Title	Block	ECTS
NIFK14036U	The Food Industry: Structure and Economics	Block 1	7.5 ECTS
NIFK14031U	Behavioural and Experimental Economics	Block 1	7.5 ECTS

Course Code	Course Title	Block	ECTS
NIFK14026U	Entrepreneurship and Innovation	Block 1	7.5 ECTS
NIFK14022U	Industrial Organization	Block 1	7.5 ECTS
NIFK14023U	Advanced International Trade	Block 1	7.5 ECTS
NIFK23010U	Success and Failure in Environmental and Climate Policy*	Block 1	7.5 ECTS
NIFK14025U	Contracts and Cooperatives	Block 2	7.5 ECTS
NIFK14001U	Microeconomic and Econometric Production Analysis	Block 2	7.5 ECTS
NIFK16005U	Advanced Development Economics	Block 2	7.5 ECTS
NIFK23007U	Applied Trade and Climate Policy Models	Block 2	7.5 ECTS
NIFK16001U	Economic Efficiency and Benchmarking	Block 2	7.5 ECTS
LOJK10282U	Applied Economics of Forest and Nature	Block 2	7.5 ECTS
NIFK23003U	Market Design	Block 2	7.5 ECTS
NIFK14032U	Business Development and Innovation	Block 3	7.5 ECTS
NIFK15003U	Applied Economics of Consumption	Block 4	7.5 ECTS
NIFK14026U	Entrepreneurship and Innovation	Block 4	7.5 ECTS
LOJK10255U	Agricultural and Food Policy	Block 4	7.5 ECTS
NIFK19001U	Working as a Consultant	Block 4	7.5 ECTS
NIFK230009U	Impact Evaluation	Block 4	7.5 ECTS
NIFK24000U	Data Management and Analysis Using R	Block 5	7.5 ECTS
	Project in Practice	Block 1-5	15 ECTS

*The course is not offered in the academic year 2024/25.

6.1.3 Elective subject elements

15 ECTS are to be covered as elective subject elements.

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

6.1.4 Projects

- Projects outside the course scope may be included in the elective section of the programme with 7.5 ECTS. The regulations are described in Appendix 5 to the shared section of the curriculum.
- Projects in practice may be included in the elective section of the programme with 15 ECTS and restricted elective section of the programme with 15 ECTS. Project in practice 30 ECTS may be written as a combination of the restricted elective and elective section of the programme. Projects in practice may not exceed 30 ECTS in total 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.

6.1.5 Thesis

The MSc Programme in Environmental and Natural Resource Economics 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.

6.1.6 Academic mobility

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

For students admitted in September the academic mobility in the MSc Programme in Environmental and Natural Resource Economics (thesis, 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 and Natural Resource Economics (thesis, 30 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.

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 The recommended academic progression

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

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

Table - General profile in Environmental and Natural Resource Economics (thesis 30 ECTS)

	Block 1	Block 2	Block 3	Block 4
1st year	Ecology and Ecosystems Science in relation to Environmental Economics		Incentives and Regulation	Restricted elective
	Applied Econometrics	Natural Resource Economics	Economic Valuation Methods and Cost Benefit Analysis	Applied Environmental and Natural Resource Economics
2nd year	Restricted elective	Elective	Thesis	
	Restricted elective	Elective		

Table - General profile in Environmental and Natural Resource Economics (thesis 45 ECTS)

	Block 1	Block 2	Block 3	Block 4
1st year	Ecology and Ecosystems Science in relation to Environmental Economics		Incentives and Regulation	Restricted elective
	Applied Econometrics	Natural Resource Economics	Economic Valuation Methods and Cost Benefit Analysis	Applied Environmental and Natural Resource Economics
2nd year	Elective	Thesis		
	Elective			

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

Table - General profile in Environmental and Natural Resource Economics (thesis 30 ECTS)*

	Block 3	Block 4	Block 1	Block 2
1st year	Restricted elective	Elective	Ecology and Ecosystems Science in relation to Environmental Economics	
	Restricted elective	Elective	Applied Econometrics	Natural Resource Economics
2nd year	Incentives and Regulation	Restricted elective	Thesis	
	Economic Valuation Methods and Cost Benefit Analysis	Applied Environmental and Natural Resource Economics		

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

Table – General profile in Environmental and Natural Resource Economics (thesis 45 ECTS)*

	Block 3	Block 4	Block 1	Block 2
1st year	Incentives and Regulation	Applied Environmental and Natural Resource Economics	Ecology and Ecosystems Science in relation to Environmental Economics	
	Elective	Restricted elective	Applied Econometrics	Natural Resource Economics
2nd year	Economic Valuation Methods and Cost Benefit Analysis	Thesis		
	Elective			

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

Appendix 2 Interim arrangement

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 2023/24 or 2022/23

Students admitted to the MSc Programme in the academic year 2023/24 or 2022/23 must finish the programme as listed in the curriculum above with the following exceptions.

Restricted elective subject elements

7.5 ECTS are to be covered as subject elements from the following list (thesis, 45 ECTS)			
Restricted elective subject elements offered as part of the curriculum (see above)			
NIFK19006U	Managing and Analyzing Data in Social Science	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.

Restricted elective subject elements

7.5 ECTS are to be covered as subject elements from the following list (thesis, 45 ECTS)			
Restricted elective subject elements offered as part of the curriculum (see above)			
NIFK16007U	Computational Methods for Policy Analysis in AgriFood Markets	Discontinued*	7.5 ECTS
NIFK19006U	Managing and Analyzing Data in Social Science	Discontinued*	7.5 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.

Table – General profile in Environmental and Natural Resource Economics (Summer: thesis 45 ECTS, part time)

	Block 1	Block 2	Block 3	Block 4
1st year	Ecology and Ecosystems Science in relation to Environmental Economics		Incentives and Regulation	Restrictive elective
	Applied Econometrics	Natural Resource Economics	Economic Valuation Methods and Cost Benefit Analysis	Applied Environmental and Natural Resource Economics
2nd year	Elective	Elective	Thesis	

*This table only applies to students who start the thesis before 20 August 2020.

Table – General profile in Environmental and Natural Resource Economics (Winter: thesis 45 ECTS, part time)*

	Block 3	Block 4	Block 1	Block 2
1st year	Incentives and Regulation	Restricted elective	Ecology and Ecosystems Science in relation to Environmental Economics	
	Elective	Elective	Applied Econometrics	Natural Resource Economics
2nd year	Economic Valuation Methods and Cost Benefit Analysis	Applied Environmental and Natural Resource Economics	Thesis	

*This table only applies to students who start the thesis before 20 August 2020.

Restricted elective subject elements

7.5 ECTS are to be covered as subject elements from the following list (thesis, 45 ECTS)			
Restricted elective subject elements offered as part of the curriculum (see above)			
NIFK16007U	Computational Methods for Policy Analysis in AgriFood Markets	Discontinued*	7.5 ECTS

* See discontinued courses below

4 Discontinued courses

Course Code	Course Title	ECTS	Interim arrangement
NIFK19006U	Managing and Analyzing Data in Social Science	7.5	The course was restricted elective in the academic year 2023/24 and earlier. Offered for the last time: 2023/24 The course is identical to NIFK24000U Data Management and Analysis Using R.
NIFK16007U	Computational Methods for Policy Analysis in AgriFood Markets	7.5	The course was restricted elective in the academic year 2022/23 and earlier. Offered for the last time: 2022/23 The course is identical to NIFK23007U Applied Trade and Climate Policy Models.

Appendix 3 Description of objectives for the thesis

After completing the thesis, the student should have:

Knowledge about:

- Societal as well as scientific problems related to environmental and natural resources.
- Theory and state-of-the-art methods and models based on international research within the field of environmental and natural resource economics that is relevant for dealing with the abovementioned problems in an interdisciplinary setting.

Skills in/to:

- Apply and critically evaluate theories/methodologies, including their applicability and limitations for specific cases and topics related to the use and management of environment and natural resources.
- Assess the extent to which the production and interpretation of findings depend on the theory/methodology chosen and the delimitation chosen.
- Discuss academic issues arising from the thesis with fellow environmental and natural resource economists as well as with experts in other fields of science and non-expert laymen.
- Communicate conclusions in a clear and academic manner in relation to the problem formulation and, more generally, considering the topic and the subject area.
- Reflect on the academic and social significance, if any, of the thesis findings.
- Identify areas for further research based on the thesis findings

If the thesis includes experimental content/own data production, the student should also have acquired the skills to:

- Substantiate the idea of conducting experimental work/producing own data in order to shed light on the thesis 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 potential impacts of the data collection and processing on the credibility of the thesis findings.

Competences in/to:

- Taking responsibility and solving complex problems and carrying out development assignments in a scientific and potentially interdisciplinary work context where unforeseen situations may arise and require new solutions.
- Independently initiating and performing academic research in the interdisciplinary context of a problem related to the management and use of environmental and natural resources.
- Taking responsibility for own learning and scientific specialisation.