

Roskilde University

MSc. / cand.scient.

Environ- mental Science

Master's Programme



Environmental Science

Do you want to make a real change for the environment? Then join our Master's programme in Environmental Science, where you will learn to identify, analyse, and solve current and future environmental problems.

Society is increasingly affected by environmental issues such as climate change, pollution and reduced global biodiversity. As a student of Environmental Science, you will be given tools to tackle these issues by identifying, analysing, and solving complex environmental challenges on a regional, national, and global scale.

Our profile

Environmental Science at Roskilde University is the only interdisciplinary programme of its kind in Denmark: We have a strong foundation in the natural sciences, but we also look to the social sciences in examining, how environmental issues are mediated through societal factors. As a student, you will gain an in-depth knowledge of biological systems from individual to ecosystem level, and you will learn to design and conduct experiments within environmental science.

In addition, you will learn to apply and present your knowledge in an interdisciplinary context. We train you to conduct survey and impact studies using various statistical techniques, simple dynamic models, GIS-tools, and other methods – and to analyse and present the data you obtain, to contribute to solving environmental challenges. You will learn to measure societal effects on the environment and use your knowledge to suggest new ways forward. In short, you will be equipped to work with environmental issues in a complex world.

You will join a faculty of dedicated researchers, many of whom are leading in their field in Denmark. We conduct research into areas like minimising the environmental impacts of micro plastic pollution, methods of making fishing and fish farming more sustainable, and assessing the ecological impact from existing chemical contamination to prevent future contamination. You will be able to shape your education from a wide variety of elective courses, giving you an academic profile to match your interests.

Study environment

We have an open-door tradition and consider you scientist from day one, giving you the opportunity to work very closely with our research and teaching staff. You will be thoroughly introduced to both staff and fellow students, and you will join a lively study environment. We are passionate about our field, and so a trip to the kitchen for a cup of coffee might easily land you in a chat about the latest news or discovery in our field!

The programme is very hands-on, with much time spent in the laboratory and with field work. We like to get our hands dirty – often quite literally – working with real problems and with external partners, from both the public and private sector. As all student programmes at Roskilde University, we work extensively through problem-oriented projects, usually in groups.



Photo: Lisbeth Holten

Example of a study programme

4. semester	Master Thesis (60 ECTS) or Project-oriented internship (15 ECTS) and Master thesis (45 ECTS)				
2. semester	Environmental Monitoring and Applications (5 ECTS)	Biodiversity and Conservation (5 ECTS)	Ecotoxicology - Theory and Practice (10 ECTS)	Elective courses (10 ECTS)	
1. semester	Introduction to Environmental Science (5 ECTS)	Environmental Management (5 ECTS)	Environmental Chemistry and Element Cycling (10 ECTS)	Data Analysis and Modelling in Environmental Science (5 ECTS)	Elective Course (5 ECTS)

Please note: The table shows an example of a course of study. Courses, projects, internships and studies abroad with credit transfer may vary for each student.

Elective courses

1. semester	
Climate change ecology (5 ECTS)	Sustainable use of biological systems (5 ECTS)
2. semester	
Topics in Environmental Science: E.g. Methods in Ecology <i>and/or</i> Environment and Health (5 ECTS)	Project management (5 ECTS)

1.

SEMESTER

The objective of the first semester is to introduce the field of Environmental Science and to provide the necessary foundation within selected areas of natural science, data analysis and management.

2.

SEMESTER

The objective of the second semester is to provide in-depth specialization within selected areas of Environmental Science.

3.-4.

SEMESTER

The last two semesters are intended for the master's thesis. Environmental Science students have two options. Students can either make a 60 ECTS thesis during the 3rd and 4th semesters, or they can do a project-oriented internship (15 ECTS) in the 3rd semester, combined with a shorter thesis accounting for 45 ECTS. The short thesis is initiated during the 3rd semester alongside the internship.

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The distance between researchers and students is very small, so you will experience getting the latest knowledge and news within Environmental Science while waiting for the coffee to brew.”

Nikolai Lond Frisk, Aquatic environment employee, Faxø Municipality

Form of Study

Through your education, you get the opportunity to create your own individual education profile and your own independent specialization in accordance with the idea of the problem-oriented, interdisciplinary and project-oriented teaching method at Roskilde University.

The study form is a combination of 50 % courses and 50% project work

Courses that are organized as teaching in small groups, where the focus is on theories, methods, and problems in an interaction between teacher and student

Problem-oriented project group work

50 %
courses

Your theoretical
toolbox

50 %
project work

Apply your theory in
practice on a
problem

The project work and guidance are prioritized at Roskilde University. We also prioritize that you gain experience with the production and processing of empirical data as well as the practical application of theories and methods.

All master's programmes offer project-oriented internships and / or studies at other universities at home and abroad with credit transfer.



Photo: Kasper Hornbæk

Examples of projects and master's theses

- Waste audit at Holbæk Hospital – how can Danish hospital handle plastic waste?
- Prevalence of microplastics in various fish species in Danish waters
- Influence of environmental changes on growth and biofilm formation of potentially pathogenic bacteria isolated from plastic debris.
- Regulation of textile-related chemicals and their effect on freshwater organisms.
- Adhesion of Benzo(a)Pyrene to Particles of Sediment and Microplastic - Implications for the Vector Effect.
- Cultivation of two macroalgal species, *Palmaria palmata* and *Saccharina latissima*, in Danish waters – a study of suitable cultivation sites.
- Taxonomic groups as indicators for biodiversity in Danish forests
- Effects of simulated heat wave scenarios on growth, mortality, photosynthesis, pigment content and oxidative stress in Danish *Saccharina latissima*.
- A comparative fate study of the diesel-associated polycyclic aromatic hydrocarbons by the polychaete, *Marphysa macintoshi*, in coastal sediment in Chake-Chake bay, Zanzibar, Tanzania.
- Impacts of sediment spiked with pharmaceuticals (diclofenac and citalopram) to the amphipod *Corophium volutator* – testing the impact of single compounds and mixtures.
- Assessing the combined effect of temperature increase and exposure to pharmaceuticals (Fluoxetine) on the life-history traits of *Daphnia magna*.

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My master's degree within Environmental Science has given me strong competencies in risk assessment and ecotoxicology. I apply them in my daily work when defining the requirements for the Nordic Swan Ecolabel for cosmetic care products and detergents.”

Julie Zwicky, consultant, Ecolabelling Denmark

Career opportunities

Our graduates go on to a wide variety of jobs in the environmental sector – from jobs focusing on field surveys, data gathering and analyses, to jobs on a more administrative level working with the impact of environmental legislation. Examples of employments include:

- Research manager at the company Ocean Rainforest, developing methods of sustainable seaweed cultivation
- Ecotoxicologist at the Danish Ministry of the Environment, managing regulations of toxic materials in the environment
- Head of section at World Wildlife Foundation in Denmark, overseeing NGO projects and strategy
- Freshwater biologist at a Danish municipality, monitoring and managing the local freshwater areas

You can find employment with public environmental authorities at local, regional, national, and international levels, as well as with non-governmental organisations (NGOs), working within this field. You will also be attractive to private companies offering advisory, analysis and consulting services in the environmental field, and to industries working with the use of natural resources. The programme qualifies you to enter a PhD-programme.

You should study Environmental Science, if:

You literally want to help save the world – many talk about it, but we give you the tools to act

You want a degree rooted in the natural sciences, while also learning to navigate administrative and legislative processes

You want to piece together your own education to match your specific environmental interests

Further information



You can find admission requirements, application deadlines and other information about Environmental Science at Roskilde University here:

ruc.dk/kandidat/environmental-science

Contact us if you have questions about Environmental Science:

RUC Study & Career Guidance

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