

MSc in Biodiversity Conservation

Faculty of Science, University of Neuchâtel

An interdisciplinary curriculum

The Master of Science in Biodiversity Conservation is an interdisciplinary programme that addresses the major societal challenge of understanding the causes and halting the loss of biodiversity in a changing world.

The programme covers the conservation biology of organisms, species and ecosystems, as well as the human dimensions of conservation such as law, economics, anthropology and psychology.

Students will undertake fieldwork, receive practical training in scientific methods, and acquire transferable skills at the interface between science and the practice of biodiversity conservation.

Profs. in charge of the curriculum

Prof. Clara Zemp
Clara.Zemp@unine.ch

and

Prof. Jérémie Forney
Jeremie.Forney@unine.ch

Enquiries

Secretary of the Faculty of Science
Secretariat.sciences@unine.ch
+41 32 718 21 00

Version

Study plan dated 06 May 2024
Valid for the academic year 2024-2025

General structure of the programme :

The Master in Biodiversity Conservation is a programme given over the span of three semesters and requires 90 ECTS to be completed. The first semester is dedicated to the core curriculum, whereas the second semester already includes preparation work for the Master thesis and elective courses. The third semester is entirely dedicated to field work and the completion of the Master thesis.

Core curriculum	Master thesis project
Directed readings	Preparation work and elective courses
Scientific methods and transferable skills	
Integrative biodiversity conservation sciences	
Human dimensions of biodiversity conservation	Master thesis
Conservation biology	
45 ECTS	15 ECTS Preparation work and electives 30 ECTS Master thesis

Core curriculum

Modules/courses	Duration	Semester	ECTS	Principal Lecturer	Evaluation
Directed readings			3		
Directed readings : first steps in natural or social sciences	28	A	3	Prof. A. Aebi	CA (pass)
Scientific methods and transferable skills module			6		
Introduction to geomatics for biodiversity conservation	28	A	3	Dr S. Boillat	CA (graded)
Effective communication for biodiversity conservation	28	S	3	Dr. V. Wyssbrod	CA (graded)
Integrative biodiversity conservation sciences module			9		
Seminar : Biodiversity Conservation	28	A	3	Prof. C. Zemp	CA (graded)
Biodiversity conservation in context (workshops/excursions)	5 d	A	3	Dr. V. Wyssbrod	CA (pass)
Socio-ecological systems and interactions	28	A	3	Dr S. Boillat	CA (graded)
Human dimensions of biodiversity conservation module			12		
Introduction to the anthropology of conservation	28	A	3	Prof. J. Forney	CA (graded)
Conservation economics	28	A	3	Dr. A. Zabel	CA (graded)
Conservation psychology	28	A	3	Prof. L. Kloetzer	CA (graded)
Introduction to the law of biodiversity conservation	28	S	3	Dr. V. Wyssbrod	CA (graded)
Conservation biology module			15		
Animal conservation	30	A	3	Prof. C. Praz (info fauna)	CA (graded)
Methods in biodiversity monitoring	30	A	3	Prof. C. Praz	Written, 1 hour
Plant and ecosystem conservation	30	S	3	Prof. S. Rasmann	CA (graded)
Evidence-based conservation of species and habitats	30	S	3	Prof. C. Praz	CA (graded)
Evidence-based conservation of ecosystems	30	S	3	Prof. C. Zemp	CA (graded)
Total ECTS Core curriculum			45		

Master thesis project

Modules/courses	Duration	Semester	ECTS	Principal Lecturer	Evaluation
Thesis preparation work and elective courses			15		
Elective courses (cf. listed below)		A / S	3 - 15		
Free electives and mobility		A / S	3 - 15		
Internship	tbd	A / S	6 - 15	Master thesis supervisor	CA (pass)
Readings in preparation of the Master thesis	tbd	A / S	3	Master thesis supervisor	CA (pass)
Total ECTS Prep. work and electives			15		
Master thesis			30		
Master thesis		A and S	30		CA (graded)
Total ECTS MSc in Biodiversity conservation			90		

Suggested elective courses	Semester	ECTS
From the MSc in Biology		
Biodiversity data analysis	S	3
Soil biodiversity	S	3
Plant systematics and evolution	S	3
Animal population monitoring practicals	S	3
Natural ecosystems of Switzerland	S	3
Genomics of biodiversity	S	3
Biodiversity and agriculture : a transdisciplinary perspective	S	3
Advanced geomatics for biodiversity conservation	S	3
At the Faculty of Arts and Humanities		
Introduction aux études genre (<i>in french</i>)	A	5
Une anthropologie politique de la nature : ONG, réseaux et mouvements sociaux environnementaux (<i>in french</i>)	A	5
Séminaire de socio-anthropologie de l'aide internationale (<i>in french</i>)	A	5
Etudes sociales des sciences (<i>in french</i>)	A	3
Bureaucratie et pouvoir: regards théoriques et ethnographiques sur l'Etat (<i>in french</i>)	S	5
Morale et Marché (<i>in french</i>)	S	5
Anthropological approaches to agro-environmental governance	S	5
Cours interdisciplinaire en changements climatiques et sociétés (<i>in french</i>)	S	5

Complementary information

Evaluations and regulations

- Course and exam registration in IS-Academia is compulsory for course validation.
- For details regarding Faculty regulations, please consult the *Règlement d'études et d'examens de la Faculté des sciences* and existing directives on the Faculty's webpage (www.unine.ch/sciences).
- Continuous assessment evaluations (pass or graded) are specified in the corresponding course description.
- Elective courses must be validated with a sufficient mark (4.0) and cannot be compensated.
- A conflict-free schedule cannot be guaranteed for elective courses.

Abbreviations and grades

- CA** = continuous assessment
- hd** = half-days
- d** = days
- N.N.** = teacher to be designated
- A** = autumn semester
- S** = spring semester

Remarks

- **Master thesis project** : The master thesis project which includes electives courses, possible internship and free electives, as well as the Master thesis itself are regulated by the Guidelines document established by the scientific committee.
- **Internship** : Students can validate an internship of varying length for up to 15 ECTS credits during their Master program. For all related details, please contact the thesis supervisor.
- **Free electives** : Other elective courses can be chosen with the approval of the bureau of the scientific committee. They must be Master level courses. Courses can also be taken at other universities in Switzerland in compliance with established conventions (BeNeFri, AZUR, etc).
- **Readings in preparation of the Master thesis** : The reading assignment provides a first contact with a personal work in biodiversity conservation sciences, a prelude to more substantial work such as the Master's thesis.

Learning outcomes

On completion of the program, students will be able to:

Knowledge and understanding:

- Identify fundamental ecological and biological principles governing biodiversity, including diversity within species, between species and of habitats, interactions between living organisms and their environment, and the functioning of ecosystems and the biosphere.
- Recognize the mechanisms leading to changes in biodiversity over space and time.
- Apply scientific approaches to conservation, including biodiversity monitoring methods, data mapping and spatial analysis tools, and experimental methods in ecology.
- Discuss the interactions between humans and biodiversity, integrating perspectives from anthropology and psychology.
- Explain how cultures, values and social relationships influence biodiversity conservation. This includes taking into account the lifestyles of local populations, their practices and representations of nature and biodiversity, as well as their insertion into wider power relations and political economy.
- Explain the legal framework for biodiversity protection, including relevant international conventions and regional agreements, as well as national laws and regulations.
- Discuss conservation funding mechanisms and financial instruments such as payments for environmental services.

Applying knowledge and understanding:

- Design conservation strategies adapted to specific contexts, considering ecological, socio-economic and cultural factors.
- Evaluate the effectiveness of conservation measures implemented, through monitoring and assessment of biodiversity indicators, and adjust strategies according to the results obtained.

Making judgments:

- Critically evaluate available information and data, examining its reliability, validity and relevance to decision-making in conservation.
- Analyze ideas by considering different perspectives before drawing conclusions.

Communication skills:

- Communicate biodiversity conservation knowledge to a wide audience, including policy-makers, local communities and the general public.

Learning skills:

- Learn autonomously, actively seeking information, exploring new concepts and solving problems independently.
- Work effectively in multidisciplinary teams. Group work offers the opportunity to explore a diversity of perspectives, stimulate creativity and encourage innovation in the search for solutions to conservation challenges.