

University of Maribor
Faculty of Natural Sciences and Mathematics

Information on the undergraduate programme
Ecology with nature conservation

A) General description

QUALIFICATION AWARDED

- **Undergraduate programme of university studies Ecology with nature conservation**

Qualification awarded: University degree in Ecology with nature conservation

Duration of study: 3 years

ADMISSION REQUIREMENTS

Admission requirements for the undergraduate university programme are:

- a) a successfully completed Matura examination, or
- b) a successfully completed vocational leaving exam and exam from one of the subjects of the Matura examination; the selected subject can not be one of the subjects passed on the vocational leaving exam; or
- c) Successfully finished secondary school before June 1, 1995.

In case of enrolment limitations, applicants under a) are admitted according to their GPA on the Matura examination or final exam (60% of the points) and their overall GPA in the third and the fourth year of secondary school (40% of the points).

EDUCATIONAL AND PROFESSIONAL GOALS

The main educational and professional goal in the undergraduate study programme is to educate professionals of large basic knowledge, which will be able to understand living and physical segments of Nature, and to recognize and understand its intrinsic patterns and processes, especially the ecological laws and processes. They should understand and recognize nature conservation problems, and should be able to take active part in their treatment and solving. The programme enables to fulfill the gap, as for broadly ecologically educated professionals in Slovenia, based upon an inevitably necessary basic biological pre-knowledge of the macro-World (biota, habitats, landscapes). The programme topic is to educate students for a competent co-operation in coping with ecological and nature conservation problems. Starting upon their profound knowledge of the living nature and ecological laws and processes, the bachelors should be able to share environmental management, and to defend nature conservation in its conceptual, formal and partly technical aspects while coping with different environmental problems from local to the state, and broader levels.

The main general competences achieved by the graduates at both levels are the following:

- Knowledge of principles of natural sciences, especially of the biology, in different levels – from molecular biology to landscape ecology.
- Knowledge of all constituents of the “classical biology” (flora, fauna, gea), especially from the standpoint of biodiversity.
- Knowledge of all basic theoretical and applicative standpoints in ecology with nature conservation.
- Knowledge of natural, social and legal fundamentals of nature conservation in the world, Europe and in Slovenia.
- Knowledge of biological, legal, space and informational bases of planning, managing and protecting nature.

- Being familiar with all three aspects of ecology and nature preservation: the professional one (biodiversity at the gene, population, species, ecosystem and landscape level), the social one (knowledge of legislature in Slovenia and EU), and practical-technical one (GIS).
- Skills for integrating knowledges of different sciences.
- Skills of system thinking, enabling the bachelor to integrate into interdisciplinary working groups coping with ecological and Nature conservation problems.

The main specific competences achieved by the graduates at both levels are:

- Solution of biological and ecological problems on the “macro-level”.
- Solution of nature conservation problems and execution of in field inventarisation, nature planning and management.
- Ability of sharing part in management planning in protected areas, in areas of Nature 2000, and ecologically important areas in Slovenia, EU and other states in southeastern Europe (important for international projects).
- Co-operation in production of environmental impact assessment – the segment of biota.
- Co-operation in production of integral environmental impact assessment – the segment of biota.
- Use and establishment of integrative information system for Nature conservation.
- Understanding and providing nature conservation legislative and directions in EU, as well as international conventions in the field of Nature conservation.
- Co-operation in preparing of, and managing international conventions in the field of Nature conservation and preserving of biotic diversity.
- Ascertainment of liable considering of nature conservation topics in sectoral policies.
- Competent representing of nature conservation in all social, political, economic and other spheres in Slovenia and EU.

ACCESS TO FURTHER STUDIES

Graduates of the undergraduate university programme Ecology with nature conservation and graduates of any other undergraduate university programme of Biology can continue their studies at the postgraduate level leading to the M. Sc. degree. Graduates of the postgraduate level will be able to continue the studies at a higher level leading to the Doctor degree.

COURSE STRUCTURE DIGRAM WITH CREDITS

Complete curricula of the undergraduate university programme of the Ecology with nature conservation are given in the following pages. All the courses (obligatory and elective) are given together with the semester of study, the amount and type of the contact hours and the assigned number of the ECTS credits. The abbreviations in the curriculum have the following meaning:

L – Lectures

EL – experimental lectures

S – Seminar

T – Tutorial

LW – lab work

FW – field work

Undergraduate university programme Ecology with nature conservation

1st year, 1st semester

Course number	Course title	L /EL	S	T	LW	FW	Total contact hours	Individual work	Total hours/ ECTS
1	Mathematics	30		30			60	120	180/6
2	Physics	30			30		60	120	180/6
3	Chemistry	45			30		75	105	180/6
4	General Botany	45			45		90	90	180/6
5	Biology of the Cell	30			30		60	120	180/6
	Cummulative	180		30	135		345	555	900/30

1st year, 2nd semester

Course number	Course title	L /EL	S	T	LW	FW	Total contact hours	Individual work	Total hours/ ECTS
6	Fundamentals of Zoology	45			45		90	90	180/6
7	Biochemistry	45			30		75	105	180/6
8	Systematics and evolution of lower plants	30			30		60	90	150/5
9	Systematics and evolution of hygher plants	45			30	30	105	105	210//7
9	Principles of Environmental Chemistry	30	10		30	5	75	105	180/6
	Cummulative	195	10		165	35	405	495	900/30

2nd year, 3rd semester

Course number	Course title	L /EL	S	T	LW	FW	Total contact hours	Individual work	Total hours/ ECTS
11	Systematycs and phylogeny of Invertebrates	45			30	15	90	120	210/7
12	Systematycs and phylogeny of Vertebrates	30			30		60	90	150/5
11	Principal and Animal Ecology	60			15	15	90	150	240/8
12	Geology with Paleontology	30			15	15	60	90	120/4
13	Elective Course*	30			15		45	135	180/6
	Cummulative	195			105	30	330	570	900/30

2nd year, 4th semester

Course number	Course title	L /EL	S	T	LW	FW	Total contact hours	Individual work	Total hours/ ECTS
14	Plant Ecology	45			15	15	75	120	180/6
15	Principles of Statistics	30		15			45	105	150/5
16	Biogeography	30				30	60	90	150/5
17	Introduction to Nature Conservation	30	30				60	90	150/5
18	Introduction to Nature Conservation Legislation in EU and in Slovenia	30	15				45	45	90/3
19	Elective Course*	30			15		45	135	180/6
	Cummulative	195	30	30	30	45	330	570	900/30

3rd year, 5th semester

Course number	Course title	L /EL	S	T	LW	FW	Total contact hours	Individual work	Total hours/ ECTS
20	Genetics of Eukaryotes	30			30		60	120	150/5
21	Population Ecology	30				15	45	135	150/5
22	Habitat Types and Natura 2000	30	15			15	60	120	180/6
23	Geographic Information Systems	30		15			45	135	180/6
24	Elective Course*	30			15		45	135	180/6
	Cummulative	150	15	15	45	30	255	645	900/30

3rd year, 6th semester

Course number	Course title	L /EL	S	T	LW	FW	Total contact hours	Individual work	Total hours/ ECTS
25	Animal Physiology	45			30		75	105	180/6
26	Plant Physiology	45			30		75	105	180/6
27	Marine Ecology	30			15	15	60	90	180/6
28	Elective Course*	30			15		45	135	180/6
29	Scientific methods in biology and ecology of plants		30	15			45	75	240/8
	Scientific methodology in biology and ecology of animals	15	30				45	75	
	Cummulative	150	60	15	105	150	330	570	900/30

Elective Courses

Elective Courses of the 2nd year

Course number	Course title	L /EL	S	T	LW	FW	Total contact hours	Individual work	Total hours/ ECTS
1	Microbial Ecology	30			15		45	135	180/6
2	Agricultural Use and Land Planning	30				15	45	135	180/6
3	Conservation Biology of Mammals and Birds	15	15			15	45	135	180/6
4	Microbiology and Prokaryote Genetics	30			15		45	135	180/6
5	Overview of Forest Communities in Slovenia	30				15	45	135	180/6
6	Climatology	15	15		15		45	135	180/6
7	Geomorphology	15	15			15	45	135	180/6
8	Entomology	30			15		45	135	180/6

Elective Courses of the 3rd year

Course number	Course title	L /EL	S	T	LW	FW	Total contact hours	Individual work	Total hours/ ECTS
1	Population Genetics	30		15			45	135	180/6
2	Plant Biotechnology and the Environment	15	15		15		45	135	180/6
3	Plant Tissue Cultures	15	15		15		45	135	180/6
4	Plant Cell Responses to Environmental Impacts	30			15		45	135	180/6
5	Selected Methods in Biochemistry and Molecular Biology	30			15		45	135	180/6
6	Pedogeography	15			15	15	45	135	180/6
7	Speleobiology	15			15	15	45	135	180/6

FINAL EXAMINATION

There is no final examination other than the defence of the bachelor thesis.

EXAMINATION AND ASSESMENT REGULATIONS

The examinations are usually written and oral. Some of the courses involve the preparation of a seminar work which is usually defended by an oral presentation. The oral examination is usually preconditioned by laboratory attendance, the successful completion of the written exam and the seminar work where required.

Timetables of examinations are issued yearly by the Faculty senate at the beginning of the academic year and are published on the faculty web page and on the notice boards. There are at least 6 examinations for each course per academic year and students are free to choose the date of examination. The students need to register for examination 7 days before the examination date. The examination can be cancelled no later than 3 days before the examination date. The use of calculators, literature and other items during the examination is determined by the lecturer and may vary from course to course.

The diploma work is presented publicly before an examination board composed of the Head of the Chair, the diploma work mentor and co-mentor.

ECTS DEPARTMENTAL CO-ORDINATOR

ECTS departmental co-ordinator is the actual head of the department.

**Information on the degree programme
Ecology with nature conservation**

B) List of Subjects

Undergraduate university programme Ecology with nature conservation

Code	Course title	Type	ECTS
	Agricultural Use and Land Planning	E	6
	Animal Physiology	O	6
	Biochemistry	O	6
	Biogeography	O	5
	Biology of the Cell	E	6
	Chemistry	O	6
	Climatology	E	6
	Conservation Biology of Mammals and Birds	E	6
	Fundamentals of Zoology	O	6
	General Botany	O	6
	Genetics of Eukaryotes	O	5
	Geology with Paleontology	O	4
	Geographic Information Systems	O	6
	Geomorphology	E	6
	Habitat Types and Natura 2000	O	6
	Introduction to Nature conservation	O	5
	Introduction to Nature conservation Legislation in EU and in Slovenia	O	3
	Mathematics	O	6
	Marine Ecology	O	6
	Microbial Ecology	E	6
	Microbiology and Prokaryote Genetics	E	6
	Overview of Forest Communities in Slovenia	E	6
	Physics	O	6
	Pedogeography	E	6
	Plant Biotechnology and the Environment	E	6
	Plant Cell Responses to Environmental Impacts	E	6
	Plant Ecology	O	6
	Plant Physiology	O	6
	Plant Tissue Cultures	E	6
	Population Ecology	O	5
	Population Genetics	E	6
	Principal and Animal Ecology	O	8
	Principles of Environmental Chemistry	E	6
	Principles of Statistics	O	5
	Selected Methods in Biochemistry and Molecular Biology	E	6
	Systematics and Evolution of Animals	O	12
	Systematics and Evolution of Plants	O	12

O ... obligatory course E ... elective course