

Environmental Science – Ecology and Environmental Protection
Bachelor Degree

IN ENGLISH LANGUAGE

Multiple integrated perspectives (ecology, biology, geography, environmental protection, etc.) offer a thorough grounding in natural and human environmental history, characteristics and trends.

International laboratory work and fieldwork will be the basis for a thorough understanding of concepts and theory, and for acquiring practical skills for future successful careers in environmental science.

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Environmental sciences

Bachelor program

Ecology and environmental protection

(Program offered in English)

Knowledge and functional competencies

Development of logical and creative thinking structures (analysis, synthesis, etc.); assimilation of the conceptual system of ecology and environment protection; capacity to understand and analyze the ecological structures and processes; theoretical consistency; axiological neutrality in the analysis of theoretical and practical contributions; capacity to explore the ecological systems; capacity to use methods and techniques specific for ecology and other related sciences; capacity to transpose in practice the theoretical knowledge.

Transversal competencies

Self learning, applying knowledge adjusted to the demands of a dynamic society, responsibility in execution of tasks.

Master program (starting in 2019)

Ecological systems expertise and management

(Program offered in English)

Knowledge and functional competencies

Capacity to organize and plan; capacity to analyze, evaluate, describe, and modeling the ecological structures and processes; capacity to solve practical aspects regarding the ecological systems assessment and management; ability to evaluate and predict the human impact on the environment and identify solution to minimize it; capacity to elaborate projects, strategies and programs in the field of ecology and environment protection; internalization of scientific research strategies.

Transversal competencies

Self learning and diagnosis of training needs; capacity to work in teams and responsibility in execution of complex professional tasks in term of professional autonomy.

Research domains

- natural, semi-natural and anthropic ecosystems: evaluation, productive capacity, resilience and management
- assessment, monitoring and management of biodiversity, bio-resources and ecosystem services
- analysis of the functional role of biodiversity and of the causal relation between biodiversity, ecosystem functions and ecosystem services
- invasive species: monitoring, prevention and control
- natural and anthropic hazards: assessment, modeling, protective systems, and ecological reconstruction
- management of aquatic and semi-aquatic ecosystems in the context of climate change
- evaluation of the interactions between the ecosphere and socio-economic systems, as a base for sustainable development

LEARNING SCHEDULE

"Lucian Blaga" University of Sibiu

Faculty of Sciences

Domain: Environmental Science

Program of study: **Ecology and Environmental Protection**

Graduate's title: Bachelor Degree in Environmental Science, Program of study: Ecology and Environmental Protection

Studies duration: 3 years

Education form: full time

I. Requirements for the Bachelor Diploma:

- 180 credits for compulsory and optional disciplines;
- 10 credits for the Bachelor degree examination;
- passing the discipline Physical education (4 semesters)

II. Structure of academic year (in weeks)

	Teaching activities		Exam session			Summer practice
	Sem. I	Sem. II	Winter	Summer	Reexaminations	
1st year	14 weeks	14 weeks	3 weeks	3 weeks	2 weeks	-.
2nd year	14 weeks	14 weeks	3 weeks	3 weeks	2 weeks	2 weeks
3rd year	14 weeks	12 weeks	3 weeks	3 weeks	2 weeks	-

III. Number of hours per week

Year	Semester I	Semester II
I	23 hours	25 hours
II	25 hours	26 hours
III	20 hours	20 hours

IV. Choosing the optional disciplines

The optional disciplines are included in the 4th, 5th and 6th semester (2nd and 3rd year).

It is mandatory to choose two optional courses in the 5th semester and three optional courses in the 4th and 6th semesters.

It is possible to choose more optional disciplines and register them in the transcript as facultative disciplines.

V. Conditions for promoting an academic year. Conditions for registering in the next year of study. Conditions of re-registering

In order to promote the 1st year of study, the student must have a minimum of 30 credits. In order to register in the 3rd year of study the student must accumulate 60 credits from the 1st year and minimum 30 credits from the 2nd year for compulsory and optional disciplines.

Registering in the following year is done according to the regulations from the Study contract concluded between the student and the university/faculty.

According to O.U no.133/2000 and O.M. no.3617/2005, in order to run for a budgeted position, at the end of each academic year, the students must have passed all the exams.

The expelled students may be re-registered in the same year of study with charge.

VI. The Bachelor degree exam

1. The period for elaborating the bachelor degree thesis: semesters 4-6;
2. The period for the bachelor degree paper's completion: June
3. The period for taking the bachelor degree exam: June-July
 - a) the testing of fundamental and specialty knowledge 5 credits;
 - b) the elaboration and defence of bachelor degree thesis 5 credits.

VII. Competences following graduation

- Specialists in environmental protection agencies, public administration, consulting companies, laboratories of environment analysis, administrations of protected areas, research.
- Teachers in secondary schools and highschools

VIII. Further professional development: master and doctoral studies.

1st YEAR

No. crt.	Obligatory disciplines	Code discipline	Semester I					Semester II				
			C	S	L	Form of examination	Credits no.	C	S	L	Form of examination	Credits no.
1	<i>Plant biology</i>	390608F18I001	2	-	2	E1	5	-	-	-	-	-
2	<i>Systematic of phanerogams</i>	390608F18I002	-	-	-	-	-	2	-	2	E2	5
3	<i>Animal biology</i>	390608F18I003	2	-	2	E1	5	-	-	-	-	-
4	<i>Invertebrate biology</i>	390608F18I004	-	-	-	-	-	2	-	2	E2	5
5	<i>General physics</i>	390608F18I005	2	-	2	E1	5	-	-	-	-	-
6	<i>General ecology</i>	390608F18I006	-	-	-	-	-	3	1	1	E2	5
7	<i>General chemistry</i>	390608F18I007	1	1	1	E1	4	-	-	-	-	-
8	<i>Environmental chemistry</i>	390608F18I008	-	-	-	-	-	2	1	1	E2	4
9	<i>Geomorphology with elements of geology</i>	390608F18I009	2	-	2	E1	5	-	-	-	-	-
10	<i>Hydrology</i>	390608F18I010	-	-	-	-	-	2	1	1	E2	5
11	<i>Mathematics applied in ecology</i>	390608S18I011	1	1	-	C1	3	-	-	-	-	-
12	<i>Computer operation</i>	390608C18I012	-	-	-	-	-	-	-	2	C2	3
13	<i>Foreign language 1</i>	390608C18I013	1	1	-	C1	3	-	-	-	-	-
14	<i>Foreign language 2</i>	390608C18I014	-	-	-	-	-	1	1	-	C2	3
15	<i>Physical education 1</i>	390608C18I015	-	1	-	V1*	1	-	-	-	-	-
16	<i>Physical education 2</i>	390608C18I016	-	-	-	-	-	-	1	-	V2*	1
Total obligatory hours per week			11	3	9	5E2CIV	30+1	12	4	10	5E2CIV	30+1
			23					25				
Facultative courses												
17	<i>Human anatomy and hygiene</i>	390608F18F017	-	-	-	-	-	2	-	2	C1	3
18	<i>Human geography</i>	390608F18F018	-	-	-	-	-	1	1	-	C1	3
Total facultative hours per week								3	1	2	C1	3
								6				

* The discipline **Physical education** is evaluated with ADMITTED/REJECTED

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Dean,
Assoc. prof. PhD. Angela Bănăduc

Head of Department,
PhD. Voichița Gheoca

2nd YEAR

No. crt.	Obligatory disciplines	Code discipline	Semester III					Semester IV				
			C	S	L	Form of examination	Credits no.	C	S	L	Form of examination	Credits no.
19	<i>Plant ecophysiology</i>	390608S18I019	2	-	2	E3	4	-	-	-	-	-
20	<i>Animal ecophysiology</i>	390608S18I020	-	-	-	-	-	2	-	2	E4	3
21	<i>Vertebrate biology</i>	390608F18I021	3	-	2	E3	5	-	-	-	-	-
22	<i>Population ecology</i>	390608S18I022	2	1	1	E3	5	-	-	-	-	-
23	<i>Phytosociology and the vegetation of Romania</i>	390608S18I023	2	1	1	E3	5	-	-	-	-	-
24	<i>Meteorology and climatology</i>	390608F18I024	2	1	1	C3	4	-	-	-	-	-
25	<i>Hydrobiology</i>	390608S18I025	-	-	-	-	-	2	-	2	E4	3
26	<i>Ecosystems: structure and functions</i>	390608F18I026	-	-	-	-	-	2	1	1	E4	4
27	<i>General genetics</i>	390608F18I027	-	-	-	-	-	2	1	1	E4	3
28	<i>Microbiology</i>	390608F18I028	-	-	-	-	-	2	-	1	E4	3
29	<i>Biochemistry</i>	390608F18I029	2	-	1	C3	5	-	-	-	-	-
30	<i>Physical education 3</i>	390608C18I030	-	1	-	V3*	1	-	-	-	-	-
31	<i>Physical education 4</i>	390608C18I031	-	-	-	-	-	-	1	-	V4*	1
32	<i>Foreign language 3</i>	390608C18I032	-	1	-	C3	2	-	-	-	-	-
33	<i>Foreign language 4</i>	390608C18I033	-	-	-	-	-	-	1	-	C4	2
34	<i>Practical training 14 days x 6 hours = 84 hours</i>	390608S18I034	-	-	-	-	-	-	-	-	C4	3
	<i>Optional course 1</i>		-	-	-	-	-	1	-	1	C4	3
	<i>Optional course 2</i>		-	-	-	-	-	1	-	1	C4	3
	<i>Optional course 3</i>		-	-	-	-	-	1	1	-	C4	3
			13	4	8	4E2C1 V	30+ 1	13	4	9	5E4C	30+ 1
Total obligatory hours per week			25					26				
Optional courses												
Optional course 1												
35	<i>Geographic Information System and Remote sensing</i>	390608F18O035	-	-	-	-	-	1	-	1	C4	3
36	<i>Environmental geography</i>	390608F18O036	-	-	-	-	-	1	-	1	C4	3
Optional course 2												
37	<i>Insect ecology</i>	390608F18O037	-	-	-	-	-	1	-	1	C4	3
38	<i>Mountain fauna</i>	390608F18O038	-	-	-	-	-	1	-	1	C4	3
Optional course 3												
39	<i>Soil science</i>	390608F18O039	-	-	-	-	-	1	1	-	C4	3
40	<i>Bioproductivity</i>	390608F18O040	-	-	-	-	-	1	1	-	C4	3
Facultative courses												
41	<i>Ethics and environmental education</i>	390608F18F041	1	1	-	C3	3	-	-	-	-	-
42	<i>History of ecology</i>	390608F18F042	-	-	-	-	-	1	1	-	C4	3
			1	1	-	2C	3	1	1	-	1C	3
Total facultative hours per week			2					2				

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3rd YEAR

No. crt.	Obligatory disciplines	Code discipline	Semester V					Semester VI				
			C	S	L	Form of examination	Credits no.	C	S	L	Form of examination	Credits no.
43	<i>Human ecology</i>	390608S18I043	2	1	-	C5	4	-	-	-	-	-
44	<i>Ecological processes modeling</i>	390608S18I044	2	-	2	E5	4	-	-	-	-	-
45	<i>Degradation and protection of environment</i>	390608F18I045	2	1	1	E5	5	-	-	-	-	-
46	<i>Ecological genetics</i>	390608S18I046	2	1	1	C5	5	-	-	-	-	-
47	<i>Biodiversity management</i>	390608S18I047	-	-	-	-	-	2	1	1	E6	5
48	<i>Ecological monitoring</i>	390608S18I048	-	-	-	-	-	2	1	1	E6	4
49	<i>Biogeography</i>	390608C18I049	-	-	-	-	-	2	2	-	E6	4
50	<i>Practice for bachelor degree thesis elaboration, 14 days x 6 hours = 84 hours</i>	390608S18I050	-	-	-	-	-	-	-	-	C6	3
	<i>Optional course 4</i>		2	1	-	C5	6	-	-	-	-	-
	<i>Optional course 5</i>		1	1	-	C5	6	-	-	-	-	-
	<i>Optional course 6</i>		-	-	-	-	-	2	-	1	C6	4
	<i>Optional course 7</i>		-	-	-	-	-	1	1	-	C6	5
	<i>Optional course 8</i>		-	-	-	-	-	2	1	-	C6	5
Total compulsory hours per week			13	6	5	3E4C	30	11	6	3	3E4C	30
Bachelor degree examination												
	Evaluation of fundamental and specialty knowledge – part I		-	-	-	-	-	-	-	-	-	5
	Elaboration and defence of bachelor degree thesis – part II		-	-	-	-	-	-	-	-	-	5
Optional courses												
Optional course 4												
51	<i>Ethology</i>	390608S18O051	2	1	-	C5	6	-	-	-	-	-
52	<i>Evolutionism</i>	390608F18O052	2	1	-	C5	6	-	-	-	-	-
Optional course 5												
53	<i>Waste management</i>	390608S18O053	1	1	-	C5	6	-	-	-	-	-
54	<i>Ecotoxicology</i>	390608F18O054	1	1	-	C5	6	-	-	-	-	-
Optional course 6												
55	<i>Parasitology</i>	390608S18O055	-	-	-	-	-	2	-	1	C6	4
56	<i>Ornithology</i>	390608S18O056	-	-	-	-	-	2	-	1	C6	4
Optional course 7												
57	<i>Legislation, policy and environmental strategies</i>	390608F18O057	-	-	-	-	-	1	1	-	C6	5
58	<i>Global environmental changes</i>	390608C18O058	-	-	-	-	-	1	1	-	C6	5
Optional course 8												
59	<i>Environmental protection technologies</i>	390608S18O059	-	-	-	-	-	2	1	-	C6	5
60	<i>Water resources' management</i>	390608F18O060	-	-	-	-	-	2	1	-	C6	5

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<i>Facultative courses</i>												
61	<i>Impact studies drafting methodology</i>	390608F18F061	-	-	-	-	-	1	1	-	C6	3
Total facultative hours per week			-	-	-	-	-	1	1	-	1C	3
			-				2					

IX. Synthetic situation of the disciplines, number of hours and their weight in the educational plan

Total of disciplines in the educational plan = 61

Total of disciplines (obligatory and optional) for the credits achievement = 46

Total hours: 1976 hours + 84 hours for practical training + 84 hours for practice for the elaboration of the bachelor degree thesis = 2144 hours

The ratio between the course hours and the applicative activities (seminar and laboratory) hours:
 $1000/976 = 1.02$

A. Fundamental disciplines = 32; 52.4% - 1106 hours;

B. Specialization disciplines = 18; 29.5% - 740 hours;

C. Complementary disciplines = 11; 18% - 130 hours.

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