



Aleksandras Stulginskis University
**Faculty of Forest Sciences
and Ecology**



Study program of first level

Applied Ecology

Code of programme	612C18002
Language	<i>Lithuanian, English</i>
Study area and study fields (branch)	Biomedical sciences area, Field of Biology, Branch of Ecology
Stage of studies	<i>First</i>
Awarded degree	<i>Bachelor of Ecology</i>
Study form (length in years)	<i>Full - time (4 years), part-time (6 years)</i>
Study programme volume in credits	240
The start date of the study program	1994
Date and results of the study program last accreditation	28 06 2008 <i>Accredited without conditions</i>
Last date of Study program approval by the University Senate and the Protocol No.	30 th of June, 2010

Study program Committee:

(approved by the decision of Faculty of Forestry and Ecology Council, 13th of June, 2013 (protocol no. 6 (38))

No.	Name and surname	Working place and position
1.	Edmundas Bartkevičius	Faculty of Forestry and Ecology, dean
2.	Vitas Marozas	Faculty of Forestry and Ecology, Institute of Environment and Ecology, head
3.	Aida Stiklienė (chairman of the Committee)	Faculty of Forestry and Ecology, vice dean
4.	Laima Česonienė	Faculty of Forestry and Ecology, Institute of Environment and Ecology, professor
5.	Anželika Raškauskienė	Faculty of Forestry and Ecology, Institute of Environment and Ecology, associated professor
6.	Valdas Paulauskas	Faculty of Forestry and Ecology, Institute of Environment and Ecology, professor
7.	Skirmantas Pocius	Kaunas Regional Environmental Protection Department, director
8.	Student representative	Student of Applied Ecology Study Program Jolita Rasimavičiūtė

The short rationale of the need for Study program

Environmental protection is very important for the modern world policy; it is certainly the greatest current challenge to mankind as it plays a crucial role in economic and societal development throughout the world. Lithuania, like other advanced countries in the world, raised serious requirements for environmental protection. Steadily increasing population of the planet, their needs grow, increasing the need for professionals working in the field of environmental protection. With each passing day the greater attention given to the world's environmental protection problems. By adjusting to this challenge, we will be able to ensure sustainable development within human societies. The understanding of direct and indirect effects of global change on biodiversity will be crucial for management and conservation of nature. Over the last decades, the analyses carried out by ecologists have revealed the great fragility of natural balances and the dramatic ecological consequences of unwise human activities. Intended aspirations require highly skilled, with a broad education professionals, capable to work creatively within the changing conditions. One of the environmental strategy priorities is a training of qualified environmental and other areas specialist with regard to the changing situation, environmental management and technology innovation in the world.

Entry requirements:

Minimal education - secondary education

Access to further study and carrier

The BSs of Applied Ecology students will be well equipped to seek a wide variety of jobs. Graduates of the BSc program will have a broad range of technical, communication, analytical, and interpersonal skills, together with a firm grounding in Environmental Science. These skill sets have been defined as requirements for employment in the environmental sector. The main skills can be summarized as follows: an understanding of the more significant industrial processes and other human activities that can affect the environment, along with the technology and management strategies to prevent, control and remedy those effects; skills to communicate effectively, think creatively, deal effectively with conflict and risk, solve problems systematically and to use the relevant tools (computers, sampling and analytical, monitoring, technical references, etc.). Students will gain qualifications and experience that allows them the career prospects in regional and international environment agencies as an environmental Specialist, municipal nature conservation offices as a park ranger, park naturalist, environmental education specialist, park activities coordinator; ministries and other public and non governmental authorities in fund raising and foundation work, environmental education, risk assessment; impact assessment, etc.

Bachelors in Ecology are welcome to continuing studies in the second level (Master). University students have the opportunity to study individual subjects abroad under the Erasmus program.

Goal of the study program:

The main goal of the program- to develop a theoretically ready, able to think critically and creatively, with broad range of knowledge and skills within the areas of ecology and protection of environment bachelors in ecology and those who are able to adapt the knowledge and skills in professional life within changing environmental conditions gaining perspicacity about the conservation of national resources in general, which, in turn, is one of the most crucial issues in the contemporary arena.

Links of partial study program targets; study results (deliverables) and study subjects:

Partial study program targets	Types of deliverables	Study results (deliverables)	Study subjects
<i>First partial target</i> – to educate graduates who have a humanistic	Knowledge and its application	To figure out the principles and regularities of society formation, economic development, the functioning of the state, the cultural differences between countries	The Development of Society

orientation, critical thinking, ability to communicate freely and responsibly choose values, are socially active within the global economy, science and culture		To understand the importance of continual training in the changing and developing information society	Philosophy; Psychology
		Recognize and appropriately use the special terminology	English for Specific Purpose
	Special skills	Clearly formulate ideas in communications, discussions, preparing oral and written reports for different and various audiences	English for Specific Purpose
	Social skills	Analyze and evaluate the economic, financial and political situation; social phenomena, processes and their consequences	The Development of Society
	Personal skills	Work independently and collectively, to foster the creative powers; pooling together in co-operation	Philosophy; Psychology; English for Specific Purpose
		Apply a holistic approach to maturation of ideas, evaluation opinions, making the decisions	Philosophy; The Development of Society
Second partial target form a theoretical system of knowledge of live and inanimate nature, ecosystem understanding and identification, ability to develop the skills of mathematical methods application and information technology adaptation; necessary for assessing the different nature components and applying protective measures	Knowledge and its application	Know and apply the mathematical, physical and chemical methods, information technology solving environmental problems.	General Chemistry; Environmental Chemistry and Toxicology; Special Physics; Soil Science; High Mathematics and Probability Theory; Informatics; GIS Fundaments
		Acquire knowledge about different elements of the nature structure, their characteristics, the ecosystem systemic groups of organisms, their biological and ecological characteristics; human-environment relationship.	Biogeography; Plant Biology; Microbiology; Invertebrate Zoology; Mycology and Plant Pathology; Dendrology; Vertebrate Biology; Management of Wildlife Population; Hydrobiology; Ecological Genetics; General Ecology; Applied Ecology; Human Ecology; Biological Diversity and its Conservation; Environment Quality Assessment; Landscape Ecology and Management
	Research implementation skills	To plan a scientific or technological research, interpret the results of statistical analysis	Principles of Research and Technical Creativity; High Mathematics and Probability Theory;

		Integrating the theoretical knowledge on the topic, identify the chosen research problem, to analyze the previous research work carried out within the topic, to adapt the methodology for research and for decision making within the projects, and to formulate conclusions and potential solutions	Environment Impact Assessment and Monitoring; Environment Quality Assessment; Environmental Projects; Principles of Research and Technical Creativity; Landscape Ecology and Management
	Special skills	Distinguish woody and herbaceous plants, microorganisms, fungi, insects, birds and animals, soil types, forest types and their ecological characteristics	Plant Biology; Microbiology; Invertebrate Zoology; Mycology and Plant Pathology; Dendrology; Soil Science; Vertebrate Biology; Management of Wildlife Population; Hydrobiology; Applied Ecology; Human Ecology; Biological Diversity and its Conservation; Practical Training of Plant Biology and Dendrology; Ecology Complex Field Practice 1; Ecology Complex Field Practice 2; Practice of Professional Activity
		Apply information technology in assessing and solving environmental problems	Informatics; GIS Fundamentals; Landscape Ecology and Management
		Assess the status of the air, soil, water and the impact of environmental factors on human health, to choose the preventive measures of pollution, biodiversity protection; apply an environmental impact assessment and monitoring systems	Environment Quality Assessment; Human Ecology; Biological Diversity and its Conservation; Environment Impact Assessment and Monitoring; Landscape Ecology and Management
	Social skills and personal skills	Understand specialized texts and technical terms, participate in discussions, develop and present reports	Principles of Research and Technical Creativity
		Solving the practical and theoretical-practical problems, for solution selection to find, apply and interlink different subject information, seeking for the rational use of natural, human, technical and technological factors in combination	Landscape Ecology and Management
		Use the scientific, legal and other special sources of information, be able to select, organize, evaluate and apply them in practice	Environment Impact Assessment and Monitoring ; Management of Wildlife Population;

			Environment Quality Assessment
		To be able to plan a strategy for action and be able to work independently or in team	Landscape Ecology and Management
Third partial target – to develop a knowledge system of the individual components of the environment and human economic activity management, skills to take the right decisions in environmental management	Knowledge and its application	To get acquainted with the impact of sustainable forestry, agrotechnologies in agroecosystems; water resources and environmental protection measures as well as the engineering solutions, human safety means in the professional environment	Sustainable Forestry; Use and Protection of Water Recourses; Agrotechnologies and Environmental Protection; Environmental Engineering and Waste Management; Human Safety
		To get acquainted with the basic ecological ethics rules, systems and tools of environmental economics, management and law	Environmental Management; Environmental Law; Environmental Economics; Environmental Ethics and Sustainable Development
	Special skills	Assess the technologies of, natural resources use in different ecosystems, engineering solutions in terms of environmental protection.	Sustainable Forestry; Use and Protection of Water Recourses; Agrotechnologies and Environmental Protection; Environmental Engineering and Waste Management; Human Safety; Recreation
		Apply social and economical environmental protection regulatory measures	Environmental Management; Environmental Law; Environmental Economics; Environmental Ethics and Sustainable Development; Practice in Environmental Education for Entrepreneurship
	Social skills and personal skills	To be able to clearly and convincingly present the information in writing or orally to various audiences	All study subjects
Value attitudes		Respect to material and spiritual cultural values, which are built on carefully planned, organized and qualified of work carried out.	All study subjects
		Confidence, willingness to take responsibility for their actions and decisions	

First Cycle (Bachelor's) *Applied ecology* Study Program Study Plan

No.	Subjects, practices	Volume		Semester	
		ECTS credits	hours	Full-time studies	Part – time studies
GENERAL UNIVERSITY STUDY SUBJECTs (18 CR.)					
1.	Lithuanian for Beginners	3	80	1	2
2.	Philosophy	3	80	1	2
3.	The development of Society	3	80	2	1
4.	Psychology	3	80	2	2
5.	English for Specific Purpose1	3	80	2	2
6.	English for Specific Purpose2	3	80	3	3
Total		18	480	x	x
SUBJECTS OF THE MAJOR FIELD/BRANCH AND RELATE SUBJECTS, PRACTICES, FINAL KNOWLEDGE CHECKS (165 CR.)					
Study subjects					
1.	General Chemistry	4	106	1	3
2.	Environmental Chemistry and Toxicology	6	160	5	7
3.	Special Physics	4	106	2	3
4.	Soil Science (1,0 cr. TP*)	6	160	2	2
5.	Landscape Ecology and Management	6	160	7	6
6.	Biogeography	3	80	6	11
7.	High Mathematics and Probability Theory	4	107	1	1
8.	Informatics	4	107	1	3
9.	GIS Fundaments	5	134	4	4
10.	Plant Biology	9	240	1	1
11.	Microbiology	3	80	1	4
12.	Invertebrate Zoology	5	133	3	6
13.	Mycology and Plant Pathology	4	107	4	4
14.	Dendrology	6	160	2	3
15.	Vertebrate Biology	5	133	5	5
16.	Management of Wildlife Population	3	80	5	8
17.	Hydrobiology	3	80	3	4
18.	Ecological Genetics	3	80	2	9
19.	General Ecology	6	160	3	5
20.	Applied Ecology	9	240	4	6
21.	Human Ecology	6	160	5	6
22.	Biological Diversity and its Conservation	6	160	5	9
23.	Environment Quality Assessment	9	240	6	9
24.	Environment Impact Assessment and Monitoring	6	160	7	10
25.	Principles of Research and Technical Creativity	5	133	6	5

26.	Environmental Projects	3	80	8	12
Total		133	3546	x	x
Practices					
1.	Practical Training of Plant biology and dendrology	5	134	2	2
2.	Ecology Complex Field Practice 1	5	133	4	6
3.	Ecology Complex Field Practice 2	4	107	6	8
4.	Practice of Professional Activity	6	160	7	10
Total:		20	534		
Final knowledge check					
1.	Final Thesis	12	320	8	12
Total:		165	854	x	x
DETERMINED BY UNIVERSITY, CHOSEN BY STUDENT STUDY SUBJECTS OF OTHER BRANCH (ENVIRONMENT MANAGAMENT) (45 CR.)					
Determined by university obligatory study subjects of other branch (15 cr.)					
1.	Human Safety	3	80	8	12
2.	Environmental Engineering and Waste Management	6	160	8	11
3.	Environmental Law	6	160	8	11
Optional study subjects of Natural recourse use and protection (18 cr.)					
1.	Use and Protection of Water Resources (0,5 cr. TP)	6	160	4-6	5, 8
2.	Agrotechnologies and Environment Protection	6	160	4-6	5, 8
3.	Sustainable Silviculture	6	160	4-6	5, 8
4.	Recreation	6	160	4-6	5, 8
Optional study subjects of Environmental management (12 cr.)					
1.	Environmental Ethics and Sustainable Development	4	107	7	4, 9, 10
2.	Environmental Economics	4	107	7	4, 9, 10
3.	Environmental Management	4	107	7	4, 9, 10
4.	Practice in Environmental Education for Entrepreneurship	4	107	7	4, 9, 10
Total:		45	1200	x	x
FREE ELECTIVE SUBJECTS (12 CR.)					
1.	Free Elective subject	3	80	3	5
2.	Free Elective Subject (Language Learning Group Study Subject)	3	80	4	4
3.	Free Elective Subject	3	80	5	7
4.	Free Elective Subject	3	80	6	8
Total:		12	320	x	x
Total volume of practices in study program together with training practices integrated into study subjects:		21 (21,5)		x	x
Total volume of final knowledge checks in the study programme		12	320	x	x
Total volume in study program:		240	6400	x	x

* TP – training practice

First Cycle (Bachelor's) *Applied Ecology* Study Programme Full-time Study extended Plan

Code	Study Subject	Credits	Term	Contact hours (acad. hours)	Including								Independent work, hrs.	Independent work, hrs. (numerator - the number of independent works, denominator - number of hours)										Form of knowled- ge checks	Coordinating teacher
					L	LW	S	E	TP	N	C	E		TP/T	LRP	T	PL/E	Ps	In	TT	E	O			
GENERAL UNIVERSITY STUDY SUBJECTS (18 CR.)																									
KEFPB012A	Philosophy	3	1	48	36	-	9	-	-	x	1	2	32	-	-	-	-	3/1 6	-	-	16	-	Written exam	Lect. R. Garškaitė	
KEFBB030A	Psychology	3	2	48	36	-	9	-	-	x	1	2	32	-	-	-	-	3/1 6	-	-	16	-	Written exam	Assoc. prof. dr.. R. Adomo- nienė	
KEKABA	English for Specific Purpose1	3	2	48	-	-	-	44*	-	x	2	2	32	-	-	-	-		1/1 6	-	16	-	Written exam	Lect. I. Augustaitienė	
KEKABA	English for Specific Purpose2	3	3	48	-	-	-	44*	-	x	2	2	32	-	-	-	-		1/1 6	-	16	-	Written exam	Lect. I. Augustaitienė	
KEFPB044A	The Development of Society	3	2	48	36		9			x	1	2	32	-	-	-	-	3/1 6	-	-	16	-	Written exam	R. Urbaitytė	
KEKAB024 A	Lithuanian for Beginners	3	1	48	-	-	-	44*	-	x	2	2	32	-	-	-	-		1/1 6	-	16	-	Written exam	Assoc. prof. N. Račkauskaitė	
Iš viso:		18	x	288	108	-	27	132	-	x	9	12	192	-	-	-	-	48	48	-	96	-	x	x	
SUBJECTS OF THE MAJOR FIELD/BRANCH AND RELATE SUBJECTS, PRACTICES, FINAL KNOWLEDGE CHECKS (165 CR.)																									
Study subjects																									
MEAEB034 A	General Chemistry	4	1	64	30	31	-	-	-	x	1	2	42	-	-	1/1 1	5/10	-	-	-	21	-	Written exam	Prof. dr. V. Paulauskas	
MEAEB001 A	Environmental Chemistry and Toxicology	6	5	84	44	36	-	-	-	x	2	2	76	-	-	-	13/34	1/1 0	-	-	32	-	Written exam	Lect. D. Šileikienė	
MFITB068A	Special Physics	4	2	64	34	27	-	-	-	x	1	2	42	-	-	-	5/11	-	1/1 0	-	21	-	Written exam	Assoc. prof. dr.. D. Girdauskienė	
AFADB019 A	Soil Science (1 cr. TP)	6	2	90	33	33	-	-	20	x	2	2	70	-	-	-	12/36	-	-	-	27	7	Egz. ž.	Prof. habil. dr. A. Motuzas	
MEMBB001 A	Landscape Ecology and Management	6	7	84	42	-	-	38*	-	x	2	2	76	1/44	-	-	-	-	-	-	32	-	Written exam	Lect. dr. R. Žalkauskas	
MEAEB002 A	Biogeography	3	6	48	25	-	-	20	-	x	1	2	32	-	-	1/6	3/6	-	-	-	16	-	Written exam	Lect. Ž. Preikša	
MFITB009A	High Mathematics and Probability Theory	4	1	64	34	-	-	27	-	x	1	2	43	-	-	1/1 0	4/8	-	-	-	21	4	Written exam	Prof. dr. P. Rupšys	
MFITB034A	Informatics	4	1	64	21	-	-	40*	-	x	1	2	43	-	-	1/1 0	5/12	-	-	-	21	-	Written exam (test).	Lect. N. Laurinavičienė	
MEMMB00 1A	GIS Fundaments	5	4	70	28	-	-	38*	-	x	2	2	64	-	-	-	5/15	-	1/2 2	-	27	-	Written exam	Prof. dr. A. Augustaitis	
AFBBB003 A	Plant Biology	9	1	126	61	60	-	-	-	x	3	2	114	-	-	1/2 0	14/31	-	-	-	48	-	Written exam	Assoc. prof. dr.. S. Giliožeris	
AFBBB007 A	Microbiology	3	1	48	25	20	-		-	x	1	2	32	-	-	1/1 0	3/6	-	-	-	16	-	Written exam	Assoc. prof. dr.. A. Krasauskas	
AFBBB023	Invertebrate	5	3	70	33	-	-	33	-	x	2	2	63	-	-	1/1	7/21	-	-	-	27	-	Written	Prof. habil. dr.	

A	Zoology															5								exam	A. Žiogas
AFBBB025 A	Mycology and Plant Pathology	4	4	56	27	26	-	-	-	x	1	2	51	-	-	1/1 2	9/18	-	-	-	21	-	Written exam	Lect. A. Šaluchaitė	
MEMBB002 A	Dendrology	6	2	84	41	-	-	39*	-	x	2	2	76	-	-	1/1 6	5/15	-	1/1 3	-	32	-	Oral exam	Assoc. prof. dr.. L. Straigytė	
MEMBB003	Vertebrate Biology	5	5	70	34	-	-	32	-	x	2	2	63	-	-		7/18	-	1/1 0	-	27	8	Written exam	Assoc. prof. dr.. G. Brazaitis	
MEMBB004 A	Management of Wildlife Population	3	5	48	25	20	-	-	-	x	1	2	32	-	-		5/16	-		-	16	-	Written exam	Assoc. prof. dr.. K. Pėtelis	
MEAEB004 A	Hydrobiology	3	3	48	23	6	-	16	-	x	1	2	32	-	-	1/1 0	6/16	-	-	-	16	-	Written exam	Assoc. prof. dr.. A. Raškauskienė	
MEMBB005 A	Ecological Genetics	3	2	48	25	4	-	16	-	x	1	2	32	-	-		2/6	-	1/1 0	-	16	-	Written exam	Prof. dr. D. Danusevičius	
MEAEB003 A	General Ecology	6	3	84	42	-	-	38	-	x	2	2	76	-	-	1/2 0	8/24	-	-	-	32	-	Written exam	Lect. dr. I. Varnagirytė- Kabašinskienė	
MEAEB036 A	Applied Ecology	9	4	126	61	-	-	60	-	x	3	2	114	-	-	1/2 0	16/46	-	-	-	48	-	Written exam	Assoc. prof. dr.. A. Raškauskienė	
MEAEB005 A	Human Ecology	6	5	84	42	-	-	38	-	x	2	2	76	-	-	1/1 7	9/27	-	-	-	32	-	Written exam	Assoc. prof. dr.. V. Dulskienė	
MEAEB006 A	Biological Diversity and its Conservation	6	5	84	42	-	-	38	-	x	2	2	76	-	-	1/2 0	8/24	-	-	-	32	-	Written exam	Lect. Ž. Preikša	
MEAEB007 A	Environment Quality Assessment	9	6	126	61	60	-	-	-	x	3	2	114	-	-	2/2 0	20/46	-	-	-	48	-	Written exam	Lect. dr. A. Stiklienė	
MEAEB008 A	Environmental Impact Assessment and Monitoring	6	7	84	42	-	-	38	-	x	2	2	76	-	-	1/2 0	8/24	-	-	-	32	-	Written exam	Assoc. prof. dr.. A. Gavenauskas	
MEMMB00 2A	Principles of Research and Technical Creativity	5	6	70	50	-	-	16*	-	x	2	2	63	-	1/2 0	-	8/16	-	-	-	27	-	Written exam	Assoc. prof. dr.. A. Petrauskas	
MEAEB022	Environmental Projects	3	8	48	25	-	-	20	-	x	1	2	32	-	-	1/1 0	3/6	-	-	-	16	-	Written exam	Asist. R. Gegužis	
Total:		133	x	193 6	950	323	-	547	20	x	44	52	1610	44	20	241	540	10	65	10	704	19	x	x	
Practices (training practices not integrated into study subjects and professional activity)																									
MEMBB015 A	Practical Training of Plant Biology and Dendrology	5	2	100	-	-	-	-	100	x	-	-	33	-	-	-	-	-	-	-	-	33	Evaluati on	Assoc. prof. dr.. L. Straigytė	
MEAEB013 A	Ecology Complex Field Practice 1	5	4	100	-	-	-	-	100	x	-	-	33	-	-	-	-	-	-	-	-	33	Evaluati on	Assoc. prof. dr.. V. Marozas	
MEAEB014 A	Ecology Complex Field Practice 2	4	6	80	-	-	-	-	80	x	-	-	27	-	-	-	-	-	-	-	-	27		Assoc. prof. dr.. V. Marozas	
MEAEB015 A	Practice of Professional Activity	6	7	12	-	-	-	-	-	x	2	10	148	-	-	-	-	-	-	-	-	148	Evaluati on	Lect. A. Stiklienė	
Total:		20	x	292	-	-	-	-	280	x	2	10	241	-	-	-	-	-	-	-	-	241	x	x	

[illegible]

x	Free Elective subject	3	6	48	x	x	x	x	x	x	1	2	32	x	x	x	x	x	x	x	x	x	Written exam	x
Total:		12	x	192	x	x	x	x	x	x	5	8	128	x	x	x	x	x	x	x	x	x	x	x
Total volume of practices in study program together with training practices integrated into study subjects:		21 (21,5)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Total volume of final knowledge checks in the study programme		12	x	24	x	x	x	x	x	x	24	x	296	x	x	x	x	x	x	x	x	296	x	x
Total volume of study program:		240	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

*- exercises carried out in subgroups

Legend: L - lectures; LW – laboratory work; S – seminars; E - exercise; TP – training practice; C - consultations; E – examinations; TP/T – term paper/thesis; LRP – library-research paper; T - test; PL (E) preparation for laboratory work (exercise, seminars); In – individual task; TT – team/group task; E – preparation for an examinations; O – preparation for training practice and other forms of independent work.