New Bachelor

In “FORESTRY”

Bachelor’s Program “Forestry”

The Bachelor program in "Forestry" combines the scientific, practical and creative aspects of forest sciences in the function of good governance of forest and pasture ecosystems as well as their use in accordance with the objectives defined in the management plan.

The curriculum provides students with the technical skills and knowledge necessary for the sustainable management of forest and pasture natural resources.

Students will receive knowledge about the updated assessment of the condition of forests and pastures, as well as about new methods of management and sustainable use of natural resources. They will also be able to master the principles of spatial planning for the multifunctional use of forest and pasture resources.

The program includes both theoretical courses and practical projects, allowing students to work with forest stands and pastures to implement applied projects. Graduates are prepared to develop their careers in the management and use of the forest and rangeland environment. The interdisciplinary nature of the program promotes innovation, solving technical and organizational problems, giving importance to the use of new work techniques that are completely friendly to the environment.

Program Objectives

This program aims to:

- Develop technical expertise in assessing natural forest and pasture ecosystems and nature protection: To equip students with in-depth knowledge of forest stand assessment methods, implementation technology, and modern harvesting techniques for wood and non-wood forest products.

- Encourage creativity and innovation in determining the main and auxiliary functions of forest and pasture ecosystems: To provide skills to determine the functions of forest and pasture ecosystems as effectively as possible in full compliance with the strategic objectives of regional and national development.

• Promote sustainable practices in forest and pasture management: To encourage the selection and use of management methods by the requirements of forest and pasture ecosystems, as well as the environment as a whole. Also, to support students' assessment of the services and products from natural forest and grassland ecosystems.

• Creating problem-solving and project management skills: To prepare students to manage production and development projects, from conception to implementation, ensuring effective planning, budgeting, and coordination with stakeholders.

• Cultivating interdisciplinary cooperation: To develop students' interdisciplinary skills, combining the technical aspects of development with the economic and social ones. Thus, students have the opportunity to collaborate in areas such as landscape management, marketing, environmental protection, etc

Core Competencies

Graduates will gain expertise in:

- Accurate assessment of forest stands from a silvicultural, and economic point of view.
- Sustainable management of forests and pastures.
- Choosing a better form of forest stand governance.
- Successful implementation of various projects in forests and pastures.
- Valuing services and products from forest and pasture ecosystems

Employment and career opportunities

- National Forest Agency
- National Agency for Protected Areas
- Municipal Forest Service
- Private companies and NGOs
- Various rural development agencies

Curriculum Structure

The three-year program combines natural sciences, technical sciences, and economic-social sciences:

• First Year: Basic modules in botanical physics and ecology, politics and law, basic knowledge in stationary conditions, statistics and artificial intelligence, erosion control and soil sciences, basics of economics, etc. (60 ECTS).

• Second Year: Advanced training in engineering subjects 1, forest management, wildlife and forest protection, forest ecology, silviculture, forest phytopathology and entomology, forest production, Basics of interior design, Markets and marketing of wood products, etc. (60 ECTS).

• Third Year: Two specializations in “Forest Ecosystem Management” and “Nature and Biodiversity Protection” (60 ECTS).

Interdisciplinary Approach

By international standards (Muster Curricula), the program balances:

• Natural Sciences (45 ECTS): Forest Botany, Dendrology, Applied Physics, Statistics, etc.

• Technological and Engineering Sciences (44 ECTS):Forest Engineering 1, Forest Engineering 2, Silviculture, Forest Breeding, Wood Technology, GIS and Remote Sensing Applications, etc.

• Social Sciences – Economic and Legal (45 ECTS): Business Administration, Basics of Economics, Basics of Politics and Law, Market and Marketing, etc

Why Choose This Program?

This degree combines technical, professional, and creative skills, preparing students for sustainable forest and rangeland management. Through practical experience, students improve their skills in assessing and governing natural resources by the principles of sustainability, thus opening up various career paths as evaluators, managers, designers, and implementers of projects. This program is best for those who seek to work for the protection and development of forest ecosystems, their biodiversity, and the environment as a whole. The scientifically correct implementation of projects through innovative technologies will help improve the quality of life.

LIST OF OBLIGATORY MODULES

As part of the degree program, compulsory modules amounting to a total of 138 ECTS credits must be completed.

First Semester				
Obligatory Modules	**ECTS**	**Courses**	**Type**	**ECTS**
M1 Basics of botany and ecology	**6**	*Basics of botany and ecology*	*VO*	*4*
		General Botany	*UE*	*2*
M2 Site conditions basics	6	*Chemistry*	*VO*	2
		Geology	*VO*	2
		Forest climatology	*VO*	2
		Basics of the law	*VO*	*3*

M3 Basics of politics and law	6	*Climate protection law for foresters*	*VO*	*1*
		Basics of politics	*VO*	*2*
M4 Forest statistics and data-driven AI	6	*Forestry statistics*	*VO*	*3*
		Data-driven artificial intelligence	*VU*	*3*
M5 Basics of Economics	6	*Basics of business administration*	*VU*	*3*
		Basics of economics	*VU*	*3*

Second Semester				
Obligatory Modules	**ECTS**	**Courses**	**Type**	**ECTS**
M6 Forest botany	**6**	*Dendrology*	*VO*	*2*
		Forest Botany	*VU*	*4*
M7 Wood industry	6	*Wood as a material - technology and products*	*VO*	*2*
		Mechanics and wood physics	*VU*	*2*
		Wood/Timber markets	*VS*	*2*
M14 Torrent and erosion control and Geomatics practical course	**6**	*Physics in forestry*	*VU*	*2*
		Geomatics practical course (surveying, remote sensing, and geoinformatics)	*(UX)*	*2*
		Torrent and erosion control	*VX*	2
M9 Forest soil science and forest nutrition	**6**	*Forest soil science and forest nutrition*	*VU*	*5*
		Geological exercises	*UE*	*1*
M12 Fundamentals of Geomatics (Surveying, Remote Sensing and Geoinformatics)	**6**	*Fundamentals of geomatics (surveying, remote sensing, and geoinformatics)*	*VU*	*6*

Third Semester				
Obligatory Modules	**ECTS**	**Courses**	**Type**	**ECTS**
M10 Forest Management I	**6**	*Forest mensuration*	*VU*	*3*
		Silviculture I	*VO*	*3*
M8 Forest business administration and accounting	6	*Forest business administration*	*VS*	*4*
		Accounting	*VU*	*2*
M15 Forest Ecology	**6**	*Fundamentals of Ecology*	*VO*	*3*
		Forest Ecology	*VU*	*3*
M17 Wildlife ecology and forest protection	**6**	*Wildlife ecology in forestry and hunting*	*VO*	*3*
		Forest protection	*VX*	*3*

M18 Forest management planning	**6**	*Biometry in the training forest*	*UE*	*3*
		Forest management	*VU*	*3*

Forth Semester				
Obligatory Modules	**ECTS**	**Courses**	**Type**	**ECTS**
Forest Engineering I	**6**	*Forest accessibility*	*VU*	*2*
		Forest mechanization and ergonomics	*VU*	*4*
Forest Management II	**6**	*Silviculture II*	*VU*	*4*
		Silviculture and harvesting techniques	*EX*	*2*
Forest Entomology and Forest Pathology	**6**	*Forest Entomology*	*VU*	*3*
		Forest pathology	*VU*	*3*
Site and yield theory	**6**	*LFÜ Site theory and forest yield theory*	*US*	*3*
		Forest yield theory	*VS*	*2*
Forest policy and forest law	**6**	*Introduction to forest policy*	*VS*	*4*
		Administrative law for foresters - selected areas	*VO*	*2*

Fifth Semester SPECIALIZATION 1				
Forest ecosystem management				
ELECTIVE MODULES –	**ECTS**	**ELECTIVE COURSES -**	**Type**	**ECTS**
Compulsory specialization modules		**Compulsory specialization courses**		
**** Grazing areas management*** *: Interdisciplinary module/ course*	***6***	*Pasture management*	*VS*	*3*
		Silvopastoralism (rangeland management)	*VS*	*3*
Management of forest enterprises	**6**	*Business development, organization and leadership*	*SE*	*6*
Forest Engineering II	**6**	*Forest road construction and maintenance*	*VU*	*2*
		Timber Harvesting operations	*VU*	*2*
		Safety and health in forestry work	*VU*	*2*
Elective specialization modules		**Elective specialization courses**		
Interdisciplinary project study with excursions	***6***	*Interdisciplinary project study with excursions*	*PJ*	*6*
Management and monitoring of forest ecosystem services	**6**	*Management and monitoring of carbon, non-timber forest products, and other ES in the context of SFM*	*VS*	*6*

Market strategies and bioeconomy	***6***	*Fundamentals of Marketing*	*SE*	*4*
		Fundamentals of the Bio-Economy	*VX*	*2*
Mathematics	***6***	*Mathematics*	*VU*	*6*
	30			***30***

Fifth Semester		**SPECIALIZATION 2**		
Nature Conservation and Biodiversity				
ELECTIVE MODULES –	**ECTS**	**ELECTIVE COURSES -**	**Type**	**ECTS**
Compulsory specialization modules		**Compulsory specialization courses**		
Identification of native mammals and birds	**6**	*Identification exercises for mammals*	*UX*	*3*
		Identification exercises for birds	*UX*	*3*
Water systems - planning and ecological aspects *(Interdisciplinary module)*	**6**	*Water bodies planning and river engineering*	*VU*	*3*
		Applied Fluvial Ecology	*UX*	*3*
Spatial planning and agriculture/ (interdisciplinary)	**6**	*General spatial planning for foresters*	*VS*	*3*
		Fundamentals of agriculture	*VX*	*3*
Elective specialization modules		**Elective specialization courses**		
Protected areas and aspects of sustainable land use and nature conservation	***6***	*Sustainable land use in developing countries*	*VO*	*2*
		Protected areas governance	*VO*	*2*
		Nature conservation in the cultural landscape	*SE*	*2*
Genetic and organismic biodiversity in forest ecosystems	***6***	*Organismic biodiversity of animals in forest ecosystems*	*VO*	*2*
		Genetic principles of plants, animals, and fungi in forest ecosystems	*VU*	*4*
Interdisciplinary project study with excursions	***6***	*Interdisciplinary project study with excursions*	*PJ*	*6*
Forest ecosystems: ecosystem services and role in climate change	***6***	*Fundamentals of forest management*	*VX*	*4*
		Mitigation and adaptation in forest ecosystems	*VO*	*2*
	30			***30***

Sixth Semester				
Compulsory specialization Modules	**ECTS**	**Compulsory specialization courses**	**Type**	**ECTS**
Elective module	**6**			
Elective module	**6**			

Compulsory practical module	*6*	Compulsory Internship	*SE*	*6*
Bachelor's thesis module	*12*	Bachelor's seminar	*SE*	*12*
	30			
Free elective				
Foreign language	***6***	Foreign language *B2+ *(technical scientific)*	*SE*	*6*
Protective forest analysis	**6**	*Protective functions/impacts of the forest*	*VX*	*3*
		Spatial analysis of protective forest	*VX*	*3*
Mathematics	***6***	*Mathematics*	*VU*	*6*
Natural tourism development	**6**	*Ecotourism tourism resources and infrastructures*	*VO*	*3*
		Environmental impacts and management of Waste	*SE*	*3*
Public relations and small forest management	**6**	*Strategic PR in the forest-based sector*	*VS*	*2*
		Communication: Psychology of persuasion	*VS*	*2*
		Small forest management - consulting, operational planning, and timber marketing	*VUX*	*2*
Interdisciplinary project study with excursions	***6***	*Interdisciplinary project study with excursions*	*PJ*	*6*
Forest ecosystems: ecosystem services and role in climate change	***6***	*Fundamentals of forest management*	*VX*	*4*
		Mitigation and adaptation in forest ecosystems	*VO*	*2*
Genetic and organismic biodiversity in forest ecosystems	***6***	*Organismic biodiversity of animals in forest ecosystems*	*VO*	*2*
		Genetic principles of plants, animals, and fungi in forest ecosystems	*VU*	*4*

Elective courses (for students who will not choose specializations)				
Modules	**ECTS**	**Courses**	**Type**	**ECTS**
Foreign language	***6***	Foreign language *B2+ *(technical scientific)*	*SE*	*6*

Identification of native mammals and birds	6	*Identification exercises for mammals*	*UX*	3
		Identification exercises for birds	*UX*	3
Genetic and organismic biodiversity in forest ecosystems	6	*Organismic biodiversity of animals in forest ecosystems*	*VO*	2
		Genetic principles of plants, animals and fungi in forest ecosystems	*VU*	4
Geomorphology – landscape and processes	6	*Introduction to Geomorphology*	VU	3
		Alpine Geomorphology and Natural Hazards	*VX*	3
Protected areas and aspects of sustainable land use and nature conservation	6	*Sustainable land use in developing countries*	*VO*	2
		Protected areas governance	*VO*	2
		Nature conservation in the cultural landscape	*SE*	2
Hydraulics and hydromechanics	6	Hydraulics and hydromechanics	VU	6
Hydraulic engineering	6	Hydraulic engineering	VU	6
Engineering geology, geotechnics and forest road construction and maintenance	6	*Engineering Geology*	VU	2
		Geotechnics	VU	2
		Forest road construction and maintenance	VU	2
Interdisciplinary project study with excursions	6	Interdisciplinary project study with excursions	PJ	6
Management and monitoring of forest ecosystem services	6	*Management and monitoring of carbon, non-timber forest products, and other ES in the context of SFM*	*VS*	6
Market strategies and bioeconomy	6	*Fundamentals of Marketing*	VU	4
		Fundamentals of the Circular Bioeconomy	*VX*	2
Mathematics	6	**Mathematics**	VU	6
Mechanics and materials science	6	*Mechanics*	VU	4
		Materials science	VO	2
Public relations and small forest management	6	*Strategic PR in the forest-based sector*	VS	2
		Communication: Psychology of persuasion	VS	2

		Small forest management - consulting, operational planning, and timber marketing	*VX*	2
Water systems - planning and ecological aspects *(Interdisciplinary module)*	6	*Water bodies planning and river engineering*	SE	3
		Applied Fluvial Ecology	VU	3
Spatial planning and agriculture/ (interdisciplinary)	6	*General spatial planning for foresters*	Vs	3
		Fundamentals of agriculture	*VX*	3
Protective forest analysis	6	*Protective functions/impacts of the forest*	*VX*	3
		Spatial analysis of protective forest	*VX*	3
Forest ecosystems: ecosystem services and role in climate change	6	*Fundamentals of forest management*	*VX*	4
		Mitigation and adaptation in forest ecosystems	VO	2
Grazing areas management *: Interdisciplinary module/ course*	6	*Pasture management*	*VS*	3
		Silvopastoralism (rangeland management)	*VS*	3
Management of forest enterprises	6	*Business development, organization and leadership*	SE	6
Forest Engineering II	6	*Forest road construction and maintenance*	*VU*	2
		Timber Harvesting /Forest operations and working systems	*VU*	2
		Safety and health in forestry work	*VU*	2

(VO)Lecture/(VU)Lectureandexercise/(VS)Lectureandseminar/(VX)Lectureandfieldtrip/(SE)Seminar/(UE)Exercise/(US) Exerciseandseminar/(X)Fieldtrip/(UX)Exerciseandfieldtrip/(PJ)Project/(LFÜ)-Fieldexercises

How is the interdisciplinary of the program according to Muster Curricula implemented?

28 % ECTS in Natural Science

27 % ECTS in Technical Science

28 % ECTS in Social Science

17% ETCS Special program

12 % of English classes