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Study programme "Environmental Science"

Main attributes

Title	Environmental Science
Identification code	EBX0
Education classification code	43850
Field of studies	Electrical Science
Level and type	Academic Bachelor Study
Higher education study field	Environmental Protection
Head of the study field	Dagnija Blumberga
Department responsible	Institute of Environment and Energy Systems
Head of the study programme	Dagnija Blumberga
Professional classification code	
The type of study programme	Full time
Language	Latvian
Accreditation	05.06.2013 - 04.06.2019; Accreditation certificate No 98
Volume (credit points)	120.0
Duration of studies (years)	Full time studies - 3,0
Degree or/and qualification to be obtained	Bachelor Degree of Environmental Science
Qualification level to be obtained	The 6th level of European Qualifications Framework (EQF) and Latvian Qualifications Framework (LQF)
Programme prerequisites	General Secondary Education or 4-year Vocational Secondary Education

Description

Abstract	<p>The academic bachelor study programme „Environmental Science” is focused on training and education of the students, providing them with an in-depth knowledge of the engineering and technical issues required for work at different enterprises and state administration entities. The environmental management specialists who are able to ensure environmentally friendly and sustainable management according to the EU standards are demanded on the labour market.</p> <p>The highly qualified academic personnel (EU experts in the field of environmental protection, environmental management and energy) as well as scientists and academicians from the leading Scandinavian and Baltic State technical universities are involved in the implementation of the study programme.</p> <p>The bachelor study programme is based on the following study courses' units:</p> <ul style="list-style-type: none"> •Fundamental (compulsory) courses (mathematics, physics, chemistry, materials science, mechanics, etc.) provide understanding about the essence, structure, elements and internal and external interconnections of engineering and technical processes; •Domain-specific study courses (Raw Materials and Resources, Theoretical Aspects of Climate Technologies, Basics of Ecological Research, Environmental Protection and Recycling Processes, etc.) establish the necessary competence required to work with the assessment methods of technological systems and optimization possibilities. These courses help understand if the development trends of national economy are implemented in compliance with the best environmental governance principles, latest scientific achievements and sustainable development principles. <p>A multi-sectoral approach to the implementation of the study programme is applied – theoretical knowledge gained during the studies is applied during the practical classes and course works for solving and analyzing the real problematic situations at the enterprises and state administration institutions.</p>
Aim	Overall objective of the Academic Bachelor Study Programme in Environmental Science is to train and educate multi-profile and highly qualified specialists with the integrated academic education and ability of systematic thinking in the area of environmental engineering and implementation of green technologies.
Tasks	<ol style="list-style-type: none"> 1. To ensure constant improvement of quality of environmental education and to train and educate highly qualified specialists for the private and public sector; 2. To develop scientific researches in the field of environmental systems and technologies; 3. To adapt technologies developed in the foreign countries for the local conditions implementing the pilot projects; 4. To develop scientific researches, which might be used for the improvement of environmental policy and for the development of new one; 5. To implement innovative projects focused on the resource consumption and environmental pollution reduction.

Learning outcomes	<ul style="list-style-type: none"> •complete understanding of a system, the whole-part relationships within it and interaction of its elements; •knowledge required to analyze and evaluate processes and technologies from engineering, economic, environmental and social aspects; •knowledge and proficiency in the development of new material and intellectual values for environmental science; •full understanding of environmental management systems, environmental standards (for ex. ISO 14000 or EMAS), auditing schemes, Eco-certification and Eco-labeling, etc. •proficiency in developing scientific researches and ability to provide consultancies in the area of green technologies, climate change processes, waste management, cleaner production, heating systems, energy efficiency, etc. •proficiency in using computing and modelling tools in the study processes and scientific activities.
Final/state examination procedure, assessment	<p>The final work assessment consists of:</p> <ol style="list-style-type: none"> 1. Individual assessment of the final work provided by the evaluation committee members (incl. assessment of a supervisor as a member of the committee) of the work's content, its relevance and oral presentation. 2. The final work assessment provided by a reviewer <p>The thesis final rating calculation algorithm is as follows: $A = 0.6 \times (\sum A_i/i) + 0.4 \times A_r$ where A - The final work final score; A_i – individual rating of the final work committee member; i - number of committee members; A_r - the final work reviewer score.</p> <p>Work is not evaluated positively in the following cases:</p> <ol style="list-style-type: none"> 1. The deadline for the work submission is delayed unreasonably 2. Students skip the defense date unreasonably 3 Unethical behavior or disrespectful behavior are demonstrated during the development or oral presentation of the thesis 4. If the reviewer's rating of the work is negative (less than 5), then the Head of the Institute shall appoint another reviewer from the same field
Description of the future employment	Environmental and energy specialists, project assistants in engineering companies, municipalities, ministries, environmental quality controlling institutions, scientific assistants in scientific institutes, etc.
Special enrollment requirements	
Opportunity to continue studies	Master programme "Environmental Science"

Courses

No	Code	Name	Credit points
A		Compulsory study courses	80.0
1	DMF101	Mathematics	9.0
2	MFA101	Physics	6.0
3	MMP169	Mechanics	2.0
4	EEE101	Electricity and Magnetism	2.0
5	ҚVҚ109	General Chemistry	2.0
6	ҚPI103	Basics of Materials Science	2.0
7	DIP101	Computer Studies (basic course)	3.0
8	ICA301	Civil Defence	1.0
9	DIM205	Supplementary Mathematics (for electrical engineering)	2.0
10	DMS212	Probability Theory and Mathematical Statistics	2.0
11	EAS717	Ecology and Environmental Protection	3.0
12	EAS712	Raw Materials and Resources	2.0
13	EAS720	Basics of ecological research	4.0
14	EAS705	Theoretical aspects of climate technologies	4.0
15	EAS718	Gas and fluid mechanics	4.0
16	EAS709	Environmental Protection and Recycling Processes	3.0
17	EAS713	Territory planning and system thinking	5.0
18	EAS301	Metrology	3.0
19	EVA701	Biotechnomy	2.0
20	ҚVT726	Basics of Water Chemistry and Microbiology	4.0
21	EVA702	Thermal energy systems. Basic course	6.0
22	SDD701	Innovative Product Development and Entrepreneurship	4.0
23	EVA703	Introduction to Study Field	2.0
24	EAS304	Combustion Processes	3.0
B		Compulsory elective study courses	26.0
B1		Field-specific study course	19.0
1	EAS716	Environmental Management Systems	3.0
2	ҚVT511	Environment Managment	3.0
3	ҚVT508	Soil Treatment Technologies	2.0
4	ҚVT507	Groundwater Treatment Technologies	2.0
5	BÜK504	Water Treatment Technology	5.0
6	EAS501	Demand Side Management	4.0
7	BTB409	Transport and Environment	2.0
8	EAS719	Numerical computational methods for engineers	4.0
9	ҚVҚ350	Environmental Chemistry and Environmental Conformity	6.0
10	EAS714	Basics of Systems Simulation	4.0
11	EAS721	Energy and environment	2.0
12	EAS711	Sustainable Development	4.0
13	EAS312	Environmental Engineering. Part 1	2.0
14	EAS313	Environmental Engineering. Part 2	2.0
15	EVA704	Enviromental Disposal Applied Geophysics	3.0
B2		Humanities and social sciences study courses	4.0
1	HSP377	General Sociology	2.0
2	HSP375	Sociology of Management	2.0
3	HSP376	Sociology of Personalities and Small Groups	2.0
4	HSP378	Politology	2.0
5	HSP379	Political System of Latvia	2.0
6	HSP380	United Europe and Latvia	2.0
B6		Languages	3.0
1	HVD101	The English Language	2.0
2	HVD230	The English Language	1.0
3	HVD108	The German Language	2.0
4	HVD226	The German Language	1.0
C		Free elective study courses	4.0
E		Final examination	10.0
1	EAS001	Bachelor Thesis	10.0