RĪGAS TEHNISKĀ UNIVERSITĀTE

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Study programme "Environmental Engineering"

Main attributes

Title	Environmental Engineering
Identification code	EDI0
Education classification code	51529
Level and type	Doctoral (Third Cycle) Studies
Higher education study field	Environmental Protection
Head of the study field	Dagnija Blumberga
Department responsible	Faculty of Natural Sciences and Technology
Head of the study programme	Jūlija Gušča
Professional classification code	-
The type of study programme	Full time
Language	Latvian, English
Accreditation	30.03.2022 - 31.03.2028; Accreditation certificate No 2022/15
Volume (credit points)	288.0
Duration of studies (years)	Full time studies - 4,0
Degree or/and qualification to be obtained	Doctor of Science (Ph.D.) in Engineering and Technology
Qualification level to be obtained	The 8th level of European Qualifications Framework (EQF) and Latvian Qualifications Framework (LQF)
Programme prerequisites	Academic master degree or seventh (fifth*) level professional qualification and professional master degree in engineering science and technology, social sciences, commercial sciences and law, life natural sciences, physical sciences, mathematics and statistics, computing, manufacturing and processing, architecture and civil engineering, agriculture, forestry, or comparable education. Applicants whose master education was not obtained in the field of engineering science or natural sciences have an additional requirement of passing an entrance examination.

Description

Abstract	The study programme ensures the implementation of the doctoral study programme in the environmental engineering sub-sector and the training of scientists in environmental engineering and energy. The study programme focuses on a comprehensive and systematic approach to analysing environmental systems, thereby allowing the doctoral candidate to understand, assess and address the effects of human impacts. The study programme includes science subjects and doctoral studies, scientific work to be carried out on an individual basis, enabling the doctoral candidate to obtain a doctoral degree and to prepare an internationally competitive higher-skilled environmental engineering specialist for academic and scientific work in universities, research centres, and organisational work in public and private institutions developed with environmental engineering. skills and working techniques related to engineering, including environmental engineering, to the extent that they are able to critically address environmental challenges, including research and innovation, are able to provide new understanding and solutions to complex and dynamic systems.
Aim	The aim of the doctoral research programme “Environmental engineering” is to acquire a PhD in the field of environmental engineering and energy science and to prepare internationally competitive higher qualifications for academic and scientific work in universities, research centres, as well as organisational work in public and private institutions.
Tasks	The tasks of the doctoral study programme shall include: • to carry out independent research work to obtain a doctoral degree on the selected topic in the field of environmental engineering and energy, and to reflect the results of scientific studies in scientific publications and present them to scientists and decision-makers; • within the framework of the study programme, in post-graduate studies and in the system for obtaining a doctorate, in lectures, practical and laboratory activities, and in independent studies, using basic and applied scientific achievements, to acquire in-depth theoretical knowledge in the environmental research methodology; • acquiring skills through modern research methods, performing high-quality scientific research and providing advice on climate and environmental technologies and energy supply systems; • acquire the skills to manage and develop sustainable development processes at the level of the industrial and energy sector or scientific institutions; • promoting the introduction of scientific research in manufacturing and public and private enterprise management; • improving teaching skills.

Learning outcomes	As a result of the acquisition of the study programme, the graduate (expected results): • will obtain a PhD degree in Environmental engineering and energy; • be able to carry out independent, critical analysis and synthesis, identifying causation, providing evaluation, addressing major research challenges and developing innovative solutions in the fields of environmental engineering and energy as well as related interdisciplinary areas; • contribute to the extension of knowledge borders or give new understanding to existing knowledge and their use in practice; • be able to successfully present, plan, structure, manage and conclude large-scale scientific studies, including in the international context, the environmental engineering and energy sectors and related industries; • be able to carry out an essential original study and present the achievements of these projects to the scientific community (high-level internationally quotable scientific publications, participation in scientific conferences); • capable of developing, validating and introducing new research methods to mitigate impacts on the environment and climate change; • demonstrate considerable authority and take responsibility for the ethical aspects of their research activities; • be able to manage and implement the academic process (development, management, evaluation); • be able to independently increase their scientific qualifications and manage research or development tasks in companies, institutions and organisations where extensive research knowledge and skills are needed.
Final/state examination procedure, assessment	To receive the academic degree of doctor of engineering, students must accomplish the syllabus and work out and defend the doctor’s thesis. The workload of the doctor's thesis is 225 credit points. The evaluation of the doctor’s thesis is determined by the Rules of the Cabinet of Ministers No. 1001 “Zinātniskā doktora grāda piešķiršanas (promocijas) kārtība un kritēriji”. The doctoral thesis must be publicly defended at the Promotion Council P-19” Environmental engineering and energy” that has been founded at the RTU’s Faculty of Electrical and Environmental Engineering.
Description of the future employment	The study programme prepares internationally competitive higher-skilled environmental engineering specialists for academic and scientific work in universities, research centres and organisational work in public and private institutions which have developed environmental engineering skills and working techniques to the extent that they are able to tackle environmental problems critically, including environmental issues in research and innovation, the ability to provide new understanding and solutions for complex and dynamic systems.
Special enrollment requirements	No
Opportunity to continue studies	

Courses

No	Code	Name	Credit points
A		**Compulsory Study Courses**	**23.0**
1	DA5303	Doctoral Garage: Analysis and Publication of Scientific Research Results	10.0
2	DA5302	Environmental Assesment	13.0
C		**Free Elective Study Courses**	**40.0**
E		**Final Examination**	**225.0**
1	DA5301	Research Work	225.0