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Study programme "Civil Engineering"

Main attributes

Title	Civil Engineering
Identification code	BBB0
Education classification code	43582
Level and type	Academic Bachelor (First Cycle) Studies
Higher education study field	Architecture and Civil Engineering
Head of the study field	Uģis Bratuškins
Deputy head of the study field	Juris Smirnovs
Department responsible	Faculty Of Civil And Mechanical Engineering
Head of the study programme	Mārtiņš Vilnītis
Professional classification code	
The type of study programme	Full time
Language	English
Accreditation	16.11.2022 - 17.11.2028; Accreditation certificate No 2022/31-A
Volume (credit points)	180.0
Duration of studies (years)	Full time studies - 3,0
Degree or/and qualification to be obtained	Bachelor degree of engineering science in construction and civil engineering
Qualification level to be obtained	The 6th level of European Qualifications Framework (EQF) and Latvian Qualifications Framework (LQF)
Programme prerequisites	Secondary education

Description

Abstract	The study programme has been developed in line with RTU Strategy and requirements of the study field "Architecture and Civil Engineering". Students develop the envisioned skills and competences under guidance of academic and research personnel with European qualifications, who in their daily work render expert services at the national and international level, as well as highly qualified academic staff with many years of professional experience. The study programme facilitates the development of the overall education export potential; it is aimed at promoting interest in education in the field of civil engineering. Innovative teaching and learning methods are employed in study programme implementation – special focus is made on the development of practical skills and active use of modern technologies. The language of instruction is English.
Aim	The aim of the study programme is to educate and train highly qualified multi-discipline specialists with academic education, characterized by systemic thinking and awareness, who are able to keep up to date with technological development and successfully participate in launching new technologies, as well as to provide students with the body of knowledge, skills and competences in accordance with the requirements of the 6th level of the European Qualifications Framework.
Tasks	The tasks of the study programme: - to ensure competitive higher academic education corresponding to the international standards, to prepare students for practical work, to develop research skills of the students and promote their practical application; - to develop student ability to adapt technologies and systems developed abroad for the local conditions; - to develop student knowledge and advance their professional skills and competencies within the study programme, so that they can demonstrate relevant academic results and reach learning outcomes in each study year and integrate them in research; - to develop student ability to implement innovative projects aimed at ensuring sustainable construction and reduction of environmental pollution; - to provide students with comprehensive knowledge in civil engineering, to develop student professional skills and develop their competence in accordance with the labour market demands; - to develop student ability to recognize problems, set and reach aims for their solution, suggesting practical solutions to specific problems within study courses and graduation papers; - to promote cooperation among students and academic staff in the process of development of research papers, adopting best practices in the practical implementation of the obtained results at industry enterprises, as well as to ensure publication of the research results; - in the course of studies, to develop student intelligence, to encourage their personal fulfilment, to promote the application of their intellectual abilities in the study process and further in their professional activities; - to motivate students and alumni to continue studies at post-graduate study programmes, to promote life-long learning, as well as academic and research excellence.

Learning outcomes	<p>Graduates of the study programme:</p> <ul style="list-style-type: none"> - able to apply the acquired theoretical and practical knowledge in their work in the construction industry; - able to perform their work, in compliance with the requirements of the binding, industry-specific, system-, process-, and product-related norms and regulations and standards; - able to understand in detail and demonstrate the knowledge of diverse specific facts, principles, processes and concepts in standard and non-standard situations in definite academic or professional fields; - able to demonstrate knowledge of technologies and methods for performing study and work tasks; - able to plan and organize work using various methods, technologies, tools, equipment and materials in performing the tasks; - able to find, evaluate and creatively use the information for completion of the study and professional tasks and problem solving; - able to cooperate, plan and complete study or work tasks in their professional field individually, in a team or managing the work of a team.
Final/state examination procedure, assessment	<p>The final assessment is done evaluating the Bachelor Paper that contains analytical research with the elements of scientific research work in the sub-fields and sub-disciplines of civil engineering on the theme individually assigned to the student. Research results are based on the analysis of research and technical literature.</p> <p>The final grade for the Bachelor Paper is calculated considering:</p> <ol style="list-style-type: none"> 1. Individual assessment of the Bachelor Paper by the members of the Bachelor Paper Defense Committee regarding paper contents, topicality, and presentation; 2. Reviewer's assessment of the Bachelor Paper; 3. Assessment of the Bachelor Paper development process during the semester. <p>The final grade for the Bachelor Paper is calculated according to the following formula: $A = 0.6 \times (\text{sum } A_i/i) + 0.25 \times A_r + 0.15 \times A_p$ where A – final assessment of the Bachelor Paper in grades; A_i – individual assessment of the Bachelor Paper by the members of the Bachelor Paper Defense Committee in grades; i – number of members of the Bachelor Paper Defense Committee; A_r – assessment of the Bachelor Paper by the reviewer in grades; A_p – assessment of the Bachelor Paper development process during the semester.</p>
Description of the future employment	<p>Graduates of the study programme may use the cross-disciplinary knowledge in civil engineering they have acquired working in construction and related industries, they will be able to integrate into the construction enterprises, work at state institutions on the development and introduction of construction regulations, at the level of municipalities, they will be able to participate in the development of the construction industry. Graduates of the study programme will be also able to conduct research in civil engineering, as well as develop and implement construction projects.</p>
Special enrollment requirements	<p>English language proficiency equivalent to at least CEFR B2 level.</p>
Opportunity to continue studies	<p>The graduates of the study programme have the opportunity to continue studies at the master study programmes.</p>

Courses

No	Code	Name	Credit points
A		Compulsory Study Courses	128.0
A.1		General Education Study Courses	23.0
1	DE0134	Mathematics	14.0
2	IV0001	Basics of Labour Protection	1.0
3	IV0076	Civil Defence	2.0
4	SD0003	Innovative Product Development and Entrepreneurship	6.0
A.2		Field-Specific Theoretical Basic and IT Study Courses	48.0
1	DA0186	Physics	9.0
2	BM0348	Introduction to Civil Engineering Drawing and Design	6.0
3	BM0343	Building Materials, Properties and Application	9.0
4	BM0347	Structural Analysis	12.0
5	BM0339	The Finite Element Method (Introduction)	3.0
6	BM0253	Building Structures	9.0
A.3		Field-Specific Professional Study Courses	57.0
1	BM0355	Practical Geodesy	9.0
2	BM0344	Basic Course of Architectural Design	9.0
3	BM0351	Construction Methods and Technology	9.0
4	BM0270	Basic Course of Geotechnics	6.0
5	BM0337	Heating, Ventilation and air Conditioning	3.0
6	BM0352	Heat Transfer in Building Constructions	6.0
7	BM0338	Maintenance of Buildings	3.0
8	BM0340	Roads and Bridges	6.0
9	BM0266	Water Supply and Sewerage	3.0
10	BM0345	Fluid Mechanics	6.0
B		Compulsory Elective Study Courses	31.0
B.1		Field-Specific Study Courses	23.0
1	BM0353	Technology of Building Repair Works	3.0
2	BM0342	Designing with 3D CAD and BIM	6.0
3	BM0350	Reinforcement of Structures	3.0
4	BM0354	Estimation of Buildings	3.0
5	BM0341	Diagnostics of Buildings	6.0
6	IV0282	Marketing in Building Construction	3.0
7	IV0283	Management in Building Products Manufacturing	3.0
B.2		Humanities and Social Sciences Study Courses	3.0
1	DE0309	General Sociology	3.0
2	DE0258	Sociology of Management	3.0
B.6		Languages	5.0
1	DE0140	Latvian for Foreign Students	2.0
2	BM0346	Technical English for Civil Engineering	3.0
C		Free Elective Study Courses	6.0
E		Final Examination	15.0
1	BM0349	Bachelor Thesis	15.0