



RĪGAS TEHNISKĀ UNIVERSITĀTE

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Study programme "Engineering Technology, Mechanics and Mechanical Engineering"

Main attributes

Title	Engineering Technology, Mechanics and Mechanical Engineering
Identification code	MBM0
Education classification code	43521
Level and type	Academic Bachelor (First Cycle) Studies
Higher education study field	Mechanics and Metal Processing, Heat Power Engineering, Heat Technology, and Mechanical Engineering
Head of the study field	Marina Čerpinska
Department responsible	Faculty Of Civil And Mechanical Engineering
Head of the study programme	Vitālijs Beresnevičs
Professional classification code	
The type of study programme	Full time
Language	Latvian, English
Accreditation	16.11.2022 - 17.11.2028; Accreditation certificate No 2022/30-A
Volume (credit points)	120.0
Duration of studies (years)	Full time studies - 3,0
Degree or/and qualification to be obtained	Bachelor degree of engineering science in mechanical 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 is being implemented in Riga Technical University Faculty of Mechanical Engineering, Transport and Aeronautics Department of Theoretical Mechanics and Strength of Materials, in close cooperation with the eight largest technical universities in Europe. The study programme is implemented in Latvian and English, and its duration is three years. During the studies, in the first two years the student acquires fundamental knowledge in the fields of mechanics and mechanical engineering from such study courses as "Mathematics", "Physics", "General Chemistry", "Fundamentals of Computer Science", "Material Science", "Theoretical Mechanics", "Resistance of Materials". The study programme is focused on the acquisition of in-depth knowledge and skills in the use of computer programmes and simulations (are acquired in the third year of the study courses "Numerical Analysis in Engineering Mechanics", "Machine Dynamics and Strength", "Methodology and Technique of Design"), which allows graduates to work in both local and international companies that are focused on the production and project management of customer-tailored mechanical equipment, systems or components, as well as to continue their studies in a two-year master's study programme.
Aim	To prepare engineers with a wide range of knowledge in the field of mechanics and mechanical engineering, who can compete well for their place in the labour market and can work in their profession in both local and international companies and projects, as well as to prepare students for further studies in the academic master's programme.
Tasks	The tasks of the study programme are: - to provide students theoretical knowledge, skills and abilities in engineering, mechanics and mechanical engineering; - to acquaint with the computer programmes used in the industry with the help of laboratory works; - to develop students' technical creative thinking and problem-solving skills so that the acquired knowledge can be used in the development of new techniques and technologies in various mechanical engineering sub-sectors: machine dynamics analysis, machine design, machine testing and diagnostics, robotics, mechatronics.
Learning outcomes	Graduates of the study programme: - understand technical processes in mechanics and mechanical engineering; - are able to evaluate descriptions of technological processes, perform their analysis, assess the quality of operation of mechanical systems, their influencing factors and risks, determine preventive measures appropriate to the risks; - are able to evaluate the operation processes of mechanical equipment, is able to determine measures for their improvement; - are able to plan the necessary resources to ensure the successful operation and improvement of engineering systems; - comprehend modern materials; - are able to design, install and operate mechanical systems after additional training on the specific system. - are able to build an engineering career by effectively cooperating with specialists of other profiles; - are able to continue studies for a master's degree.
Final/state examination procedure, assessment	Bachelor Thesis.

Description of the future employment	Graduates of the study programme work in companies that focus on the design and production of new and customer-tailored products - mechanical equipment and their components, as well as in companies where maintenance of mechanical equipment must be provided and in projects where calculations and simulations are performed in computer programmes.
Special enrollment requirements	English language proficiency equivalent to at least CEFR B2 level.
Opportunity to continue studies	It is possible to continue studies in a two-year academic master study programme “Engineering Technology, Mechanics and Mechanical Engineering” or in similar study programmes abroad.

Courses

No	Code	Name	Credit points
A		Compulsory Study Courses	85.0
1	DMF101	Mathematics	9.0
2	MFB101	Physics	6.0
3	MMP169	Mechanics	2.0
4	EEE226	Electrical Engineering and Electronics	2.0
5	KVK109	General Chemistry	2.0
6	MAT104	Structures and Properties of Engineering Materials	2.0
7	BTG131	Descriptive Geometry and Engineering Graphics	2.0
8	MMP101	Fundamentals of Computer Science	3.0
9	IUV101	Fundamentals of Law	2.0
10	ICA301	Civil Defence	1.0
11	DIM208	Supplementary Mathematics (for mechanical engineering)	2.0
12	DMS212	Probability Theory and Mathematical Statistics	2.0
13	MTM117	Introduction to the Field of Study	1.0
14	MTM201	Theoretical Mechanics (for mechanical engineers)	5.0
15	MMP219	Resistance of Materials (for mechanical engineering)	5.0
16	MMM201	Material Science	2.0
17	MSE201	Heat Study	2.0
18	MTH306	Construction of Machines and Mechanisms	3.0
19	MTH206	Engineering Measurements and Experiments	2.0
20	MMI101	Fluid Mechanics	2.0
21	MTM119	Computer Graphics (Advanced course for Mechanical Engineers)	3.0
22	MTM341	Numerical Analysis in Engineering Mechanics	2.0
23	MTM205	Engineering Mechanics Problems	3.0
24	MSE305	Hydro- and Gas Dynamics	3.0
25	MSE304	Technical Thermodynamics and Heat Exchange	3.0
26	MTH302	Methodology and Technique of Design	3.0
27	MTH301	Machine Dynamics and Strength	3.0
28	MRA353	Electro, Pneumo and Hydro automatics	3.0
29	SDD701	Innovative Product Development and Entrepreneurship	4.0
30	VAS038	Environment and Climate Roadmap	1.0
B		Compulsory Elective Study Courses	22.0
B1		Field-Specific Study Courses	15.0
1	MMP302	Mechanics of Deformable Firm Bodies	3.0
2	MTH304	Computer-Aided Analysis of Mechanical Systems of Machines (Basic Course)	3.0
3	RRI311	Electronics in Medicine	2.0
4	MMK370	Physical Foundations of Electronics	3.0
5	MTH303	Automatization of Calculation of Construction Durability (Basic Course)	3.0
6	MEE332	Medical Physics	3.0
7	MTM326	Mechanical Vibration and Acoustics	3.0
8	MMK435	Microtechnology Equipment	2.0
9	MMK371	Micro- and Nanotechnologies	3.0
10	MMP215	Nonlinear Dynamics. Introduction	2.0
11	MRA322	Electronic Equipment of Production Automation	3.0
12	MRA312	Basics of Production Automation	3.0
13	MSE323	Thermotechnical Measurements and Fundamentals of Automation	2.0
14	MAB215	General Metrology	3.0
15	MAB205	Basics of Production Engineering	2.0
16	MMP343	Mechanics of Composite and Elastic Materials	2.0
17	MTM208	Robot Kinematics	3.0
18	MEE320	Reliability of medical equipment	2.0
19	MRA320	Methods and Technology of Process Control	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	3.0
E		Final Examination	10.0
1	MTM001	Bachelor Thesis	10.0
2	MSE001	Bachelor Thesis	10.0