



RĪGAS TEHNISKĀ UNIVERSITĀTE

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Study programme "Industrial Engineering and Management"

Main attributes

Title	Industrial Engineering and Management
Identification code	MMZ0
Education classification code	45345
Level and type	Academic Master Study
Higher education study field	Management and Administration, Real Estate Management
Head of the study field	Inga Lapiņa
Department responsible	Faculty of Engineering Economics and Management
Head of the study programme	Tatjana Tambovceva
Professional classification code	
The type of study programme	Full time
Language	Latvian, English
Accreditation	26.05.2021 - 27.05.2027; Accreditation certificate No 2022/35
Volume (credit points)	80.0
Duration of studies (years)	Full time studies - 2,0
Degree or/and qualification to be obtained	Master degree of social science in industrial engineering and management
Qualification level to be obtained	The 7th level of European Qualifications Framework (EQF) and Latvian Qualifications Framework (LQF)
Programme prerequisites	Bachelor degree or fifth level professional qualification in engineering science and technologies, or comparable education

Description

Abstract	<p>The study program was established in 1998 within the framework of the international Nordic-Baltic network of technical universities BALTECH (now NORDTEK) with the aim of providing graduates in engineering and natural sciences with an opportunity to deepen their professional knowledge, and, at the same time, develop managerial competencies, providing a complex understanding of engineering systems and their management.</p> <p>The program content provides an interdisciplinary approach and student-centered education, providing students with in-depth knowledge in industrial engineering and management. Within the framework of the study program, the students acquire knowledge of industrial systems and management processes in companies during the previous study period in the different fields of engineering sciences. Within the study program, there are opportunities to expand their knowledge in the participating universities of NORDTEK (Tallinn University of Technology (Estonia), Riga Technical University (Latvia), Kaunas University of Technology (Lithuania), Vilnius Gediminas Technical University (Lithuania), Linköping University (Sweden), Lund University (Sweden) and the Royal Institute of Technology (Sweden), thus ensuring a high level of study quality and allowing students to participate in inter-university mobility.</p>
Aim	<p>The aims of the program are to create and develop students' competence in industrial engineering and management; to develop professional, creative and research skills by preparing socially responsible interdisciplinary professionals capable of providing integrated and effective systems management in a variety of industries, as well as value-added research.</p>
Tasks	<p>The tasks of the study program are to:</p> <ul style="list-style-type: none">– provide competitive education in industrial engineering and management, providing students with comprehensive knowledge and developing competencies relevant to the labor market, while fostering interest in further education and training to enhance academic and professional knowledge;– stimulate students' interest in the processes taking place in society to promote their development of into a positive, up-to-date, responsible and capable personalities who are able to critically assess situations and make independent, informed decisions;– promote research and practical applications of the results obtained within organizations;– facilitate cooperation between academic staff, students, and study program administrators for the continuous improvement of the study process and the conduct of scientific research;– promote international mobility of students and academic staff, promote participation in projects, ensure a study process in line with international standards, attracting domestic and foreign faculty and professionals.

Learning outcomes	<p>A graduate of study program can:</p> <ul style="list-style-type: none"> – use independently acquired theories and methods, integrate knowledge of various fields, contribute to the creation of new knowledge by developing innovative approaches in the management of industrial systems, and development of research or professional methods; – understand and participate in the design and development of complex engineering systems; – manage industrial systems, analyze and evaluate system efficiency and cost-effectiveness, implement engineering systems management and development techniques to facilitate continuous improvement of their operational efficiency; – plan and execute industrial management projects, initiate and manage system improvement processes, identify staff competencies and credentials, contributing to the development of new development solutions; – contribute to the development strategy of the organization by identifying and evaluating key performance indicators; – determine the potential environmental and social impacts of the operation of complex engineering systems, and monitor systems for compliance with regulatory requirements and applicable standards; – independently promote the development of their competencies and specialization, take responsibility for the results of the work of personnel groups and analyze them; – analyse and interpret research results, prepare and present reports and publications, discuss industrial system developments, integrated and efficient management of production units.
Final/state examination procedure, assessment	<p>Upon the completion of the Master's studies, the student must develop and defend a Master's thesis of 20 CP. The Master's thesis is an independent research work which is developed in close cooperation with industry.</p> <p>The Master's thesis and its presentation demonstrate the student's ability to:</p> <ul style="list-style-type: none"> – compile and evaluate scientific, professional literature and sources of information in industrial engineering and management; – obtain, compile, analyze and evaluate data, using research methods and to analyze real-world industrial systems and production processes while reflecting understanding of interdisciplinary interactions; – draw reasoned conclusions and formulate proposals; – present the research work and to defend and argue their professional opinion.
Description of the future employment	<p>Graduates of the study program may work as a Systems Management Engineer, Manufacturing Company Manager, as a manager of a production company specializing in the development or maintenance of sophisticated engineering systems, as an engineering system management specialist in companies and organizations of any size, or as a self-employed or individual merchant.</p>
Special enrollment requirements	<p>A Bachelor's degree in engineering and technology or fifth-level professional qualification or equivalent.</p>
Opportunity to continue studies	<p>Graduates have the opportunity to continue their studies in doctoral study programs.</p>

Courses

No	Code	Name	Credit points
A		Compulsory Study Courses	44.0
1	IKI708	Quality Technologies and Management	4.0
2	IIU705	Strategy and Change Management	4.0
3	IEU515	Financial Analysis and Planning	4.0
4	IVZ836	Innovation and Technology Transfer	4.0
5	BTC700	Research Methods in Industrial Engineering and Management	4.0
6	BTC701	Engineering Project Management	4.0
7	IKI703	Process Analysis and Management	4.0
8	DOP700	Enterprise Information Technology Architecture, Applications and Integration	4.0
9	BTC703	Industrial Sustainability and Circular Economy	4.0
10	DMI761	Manufacturing Planning and Control	4.0
11	DSP705	Artificial Intelligence in Business	4.0
B		Compulsory Elective Study Courses	12.0
B1		Field-Specific Study Courses	12.0
1	IÄS701	International Business	2.0
2	IUI911	Business Modeling	4.0
3	DMI504	Applications of Manufacturing Simulation	4.0
4	IVZ783	Social Responsibility and Business Ethics	4.0
5	BTC702	Internship	4.0
6	ETH702	Communication and Presentation Skills	2.0
C		Free Elective Study Courses	4.0
E		Final Examination	20.0
1	BTC002	Master Thesis	20.0