

**FACULTY OF
MECHANICAL
ENGINEERING
AND
DESIGN**

- Bachelor's degree programme of **MECHANICAL ENGINEERING**
- Bachelor's degree programme of **MECHATRONICS**
- Bachelor's degree programme of **VEHICLE ENGINEERING**
- Bachelor's degree programme of **AVIATION ENGINEERING**
- Courses from the Bachelor's degree programme **FASHION ENGINEERING/ TEXTILE ENGINEERING**
- Master's degree programme of **INDUSTRIAL ENGINEERING AND MANAGEMENT**
- Master's degree programme of **MECHANICAL ENGINEERING**
- Master's degree programme of **MECHATRONICS**
- Courses from the Master's degree programme **FASHION ENGINEERING/ TEXTILE ENGINEERING**
- **DISCRETE COURSES**

**Bachelor's degree programme
MECHANICAL ENGINEERING**

1st semester

Course code	Course title	ECTS Credits
P130B001	Mathematics 1	6
B710B195	Personal Health Education	3
P401B401	Chemistry	6
T210B198	Engineering Drawing	6

2nd semester

P130B002	Mathematics 2	6
P190B101	Physics 1	6
P175B145	Introduction to Programming for Engineers	6
T210B199	Computer-Aided Design (CAD)	6
T450B103	Materials Science and Engineering	6

3rd semester

P190B504	Mechanics of Materials	6
P190B231	Theoretical Mechanics	6
P160B003	Theory of Probability and Statistics	6
T130B178	Technological Machines and Tools	6

4th semester

T190B270	Electrical and Electronic Circuits	6
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T210B171	Numerical Methods in Engineering	6
T200B109	Applied Thermodynamics and Hidromechanics	6
T210B147	Structural Integrity	6
T210B200	Machine Dynamics	6

5th semester

T210B436	Fluid Power Systems	3
T210B116	Machine Elements	9
T110B405	Measurements	6
	Electives of Entrepreneurship Education 2017*	6
	Foreign Language Electives (Level C1)	6

Electives of Entrepreneurship Education 2017*

Course code	Course title	ECTS Credits	Semester
S000B177	Technology Entrepreneurship*	6	autumn
S190B377	Fundamentals of Enterprises Management*	6	autumn
S191B017	Marketing	6	autumn
S192B114	Fundamentals of Enterprises Accounting and Financial	6	autumn

***Important note!**

Some courses will be offered only if a sufficient number of students register for the course.

Bachelor's degree programme MECHATRONICS

1st semester

Course code	Course title	ECTS Credits
P130B001	Mathematics 1	6
T130B177	Introduction to Speciality	6
T210B303	Engineering Graphics	6
H120B111	Media Philosophy	6
P401B401	Chemistry	6

2nd semester

P130B100	Mathematics 3	3
P190B101	Physics 1	6
P175B145	Introduction to Programming for Engineers	6
T210B001	Fundamentals of Mechatronics	3
T210B301	Computer Drawing	3
T450B102	Materials Engineering	3

3rd semester

P190B504	Mechanics of Materials	6
T500B002	Human Safety	3
P190B231	Theoretical Mechanics	6
P200B104	Physics 3	3
P401B401	Chemistry	6
T000B113	Practice	3
P160B003	Theory of Probability and Statistics	6

4th semester

T190B270	Electrical and Electronic Circuits	6
T210B171	Numerical Methods in Engineering	6
H120B031	Philosophy	6
T210B501	Strength of Structural Elements	3
T200B109	Applied Thermodynamics and Fluid Mechanics	6
T130B003	Computer-Aided Design 1	6

5th semester

T190B373	Applied Electrical Engineering	3
T130B169	Production Process Engineering	6
T210B403	Machine Elements 1	6
	Foreign Language Electives (Level C1)	6
	Electives of Entrepreneurship Education 2017*	6

6th semester

T120B007	Microprocessor Technique	6
T130B012	Manufacturing Engineering 1	6
T125B001	Automatic Control Fundamentals	6
T170B140	Semester Project	6

7th semester

T130B027	Robotic Manufacturing Systems	6
T210B133	Technologies of Mechatronic Systems	9
T125B112	Semester Project	6
T210B028	Intelligent Mechatronics Systems	6
T210B024	Mechatronic System Design	6

Electives of Entrepreneurship Education 2017*

Course code	Course title	ECTS Credits	Semester
S000B177	Technology Entrepreneurship*	6	autumn
S190B377	Fundamentals of Enterprises Management*	6	autumn
S191B017	Marketing	6	autumn
S192B114	Fundamentals of Enterprises Accounting and Financial	6	autumn

***Important note!**

Some courses will be offered only if a sufficient number of students register for the course.

**Courses from the Bachelor's degree programme
FASHION ENGINEERING/ TEXTILE ENGINEERING**

Course code	Course title	ECTS Credits	Semester
T470B131	Design and Technology of Knits*	6	autumn
T470B109	Computer-aided Design for Textile*	6	autumn

**Courses from the Bachelor's degree programme
VEHICLE ENGINEERING**

Course code	Course title	ECTS Credits	Semester
T280B101	Sustainable Transport: Technologies, Environment and Interaction *	6	autumn
T280B104	Road Vehicles and Methodology of their Design *	6	autumn
T280B105	Alternative Fuels and Hybrid Powertrains in Vehicles *	6	autumn

***Important note!**

Particular elective course will be offered only if a sufficient number of students register for the course.

Courses from the Bachelor's degree programme AVIATION ENGINEERING

Course code	Course title	ECTS Credits	Semester
T210B152	Aircraft Design *	6	autumn
T130B134	Modern Technologies of Aircraft Manufacturing *	6	autumn
T310B107	Fundamentals of Aerodynamics	6	spring

Master's degree programme FASHION ENGINEERING/ TEXTILE ENGINEERING*

Course code	Course title	ECTS Credits	Semester
T150M136	Digital Technologies of Clothing Production*	6	autumn
T150M121	Eco-Clothing Engineering*	6	autumn
T470M128	Mechanics and Design of Textile Materials*	6	autumn
T470M126	Sustainable Textiles Engineering*	6	autumn
T150M128	Simulation of Clothing Exploitation Processes*	6	spring
T470M133	Engineering of Functional and Interactive Textile*	6	spring

***Important note!**

Particular elective course will be offered only if a sufficient number of students register for the course.

Master's degree programme INDUSTRIAL ENGINEERING AND MANAGEMENT

1st semester

Course code	Course title	ECTS Credits
T130M007	Product Development	6
T130M009	Manufacturing Planning and Control	6
T130M008	Industrial Production	6
T130M016	Quality Management	6
S181M004	Managerial Finance	6

2nd semester

T210M134	Industrial Maintenance	6
T130M020	Engineering Operations Strategy	6
S191M013	Industrial Marketing	6
T000M014	Research Project 1	6
	Electives 1*	6

3rd semester

T130M125	International Industry and Business	6
S189M015	Productivity Management	6
T000M126	Research Project 2	6
T130M016	Quality Management	6
	Electives 2*	6

Electives 1*

Course code	Course title	ECTS Credits	Semester
T130M833	Computer Integrated Manufacturing*	6	spring/ 2 nd
T130M023	Innovative Production Technologies*	6	spring/ 2 nd

Electives 2

S144M916	Business Law*	6	autumn / 3 rd
S189M013	Modern Management of Organization*	6	autumn / 3 rd

*Important note!

Particular elective course will be offered only if a sufficient number of students register for the course.

**Master's degree programme
MECHANICAL ENGINEERING**

1st semester

Course code	Course title	ECTS Credits
T210M025	Computer-Aided Design Systems 1	6
T210M435	Mechanical Vibrations	6
T210M009	Finite Element Method	6
T210M101	Adaptive Mechatronic Systems	6
T210M149	Models of Multiphysics Systems. Introduction	6

2nd semester

T210M015	Experimental Mechanics	6
T210M108	Analysis and Modelling of Mechanical Systems	6
T210M110	Dynamics of Mechatronic Systems	6
T000M014	Research project 1	6
T130M007	Product Development	6

3rd semester

T210M033	Constructional Strength and Reliability	6
T000M015	Research Project 2	6
T210M022	Quality and Reliability of Technical Objects	6
T210M023	Computer-Aided Analysis of Structures	6
T210M109	Microelectromechanical Systems Design	6

**Master's degree programme
MECHATRONICS**

1st semester

Course code	Course title	ECTS Credits
T210M032	Integrated CAD/CAE/CAM Systems	6
T210M009	Finite Element Method	6
T210M101	Adaptive Mechatronic Systems	6
S190M102	Engineering Projects Management	6
T130M016	Quality Management	6

2nd semester

T125M262	Computer-Aided Control of Technological Equipment	6
T130M833	Computer Integrated Manufacturing	6
T000M125	Research Project 1	6

3rd semester

T125M123	Programmable Logical Controllers	6
T125M125	Robotics	6
T000M126	Research Project 2	6

DISCRETE COURSES*

Course code	Course title	ECTS Credits	Semester
Bachelor's level courses			
T130B144	Advertising Photography, Design and Composition	6	autumn
T130B116	Fundamentals of Publishing	6	autumn
W240B111	Design Workshop	6	autumn
W240B101	Fundamentals of Design	6	autumn
W240B192	Three-dimensional Visualisation and Animation	6	autumn
T460B518	Wood Finishing Technology	6	spring
T150B184	Basics of 3D design	9	spring
T130B009	Media Publishing Technologies	6	spring
W200B103	User experience design	6	spring
W240B102	Bionics & Design	3	spring
W240B010	Product Design	6	spring
W240B100	Sketch	6	spring
W210B705	Graphic Design	6	spring
W200B104	Image Design and Communication	3	autumn/ spring
Master's level courses			
T310M010	Computational Aerodynamics	6	autumn
T310M104	Unmanned aircraft systems process modeling	6	autumn
T280M107	Unmanned Ground Vehicles Systems	6	autumn
T280M634	Design of Vehicles	6	autumn
T280M633	Vehicle and Road Safety	6	autumn
T130M030	Automation of Production Processes	6	spring
T210M023	Computer-Aided Analysis of Structures	6	spring
T140M155	Thermodynamics	6	spring
T310M103	Air Traffic Control Systems	6	spring
T290M003	Vehicle and Road Safety	6	spring

***Important note!**

Particular discrete course will be offered only if a sufficient number of students register for the course.