

FACULTY OF

Mechanical Engineering and Design

- Courses from the Bachelor's degree programme **MECHANICAL ENGINEERING**
- Courses from the Bachelor's degree programme **MECHATRONICS**
- Courses from the Bachelor's degree programme **AVIATION ENGINEERING**
- Courses from the Bachelor's degree programme **FASHION ENGINEERING**
- Courses from the Bachelor's degree programme **INDUSTRIAL DESIGN 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 INNOVATION TECHNOLOGIES**
- Courses from the Master's degree programme **VEHICLE ENGINEERING**

***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
MECHANICAL ENGINEERING**

1st semester (autumn)

Course code	Course title	ECTS Credits
P175B166	Information Technologies for Engineers	6
P190B101	Physics 1	6

2nd semester (spring)

Course code	Course title	ECTS Credits
P190B231	Theoretical Mechanics	6
T450B103	Materials Science and Engineering	6
T210B198	Engineering Drawing	6

3rd semester (autumn)

Course code	Course title	ECTS Credits
T210B199	Computer-Aided Design	6
P190B504	Mechanics of Materials	6
T130B178	Technological Machines and Tools	6

4th semester (spring)

T200B109	Applied Thermodynamics and Hidromechanics	6
T170B168	Fundamentals of Electrotechnic and Electronic	6
T210B147	Structural Integrity	6
T210B200	Machine Dynamics	6

5th semester (autumn)

Course code	Course title	ECTS Credits
T210B116	Machine Elements	9
T130B012	Manufacturing Engineering	6
T110B405	Measurements	6
P240B100	Thermal Hydromechanics	6

7th semester (autumn)

Course code	Course title	ECTS Credits
T130B114	Computer Numerical Control Programming	6
T210B436	Fluid Power Systems	3
T210B191	Product Aesthetics	6
T210B424	Quality Assurance	6

Courses from the Bachelor's degree programme MECHATRONICS

1st semester (autumn)

Course code	Course title	ECTS Credits
P175B166	Information Technologies for Engineers	6
P190B101	Physics 1	6

2nd semester (spring)

Course code	Course title	ECTS Credits
P190B231	Theoretical Mechanics	6
T130B186	Fundamentals of Digital Manufacturing and Mechatronics	6
T210B198	Engineering Drawing	6

3rd semester (autumn)

Course code	Course title	ECTS Credits
T210B199	Computer-Aided Design	6
P190B504	Mechanics of Materials	6
T450B112	Technologies of Structural Materials	6
P160B003	Theory of Probability and Statistics	6

4th semester (spring)

T170B168	Fundamentals of Electrotechnic and Electronic	6
T210B147	Structural Integrity	6
T200B109	Applied Thermodynamics and Fluid Mechanics	6
T120B008	Signals Theory	3
T125B005	Computer-aided Devices Control Systems	3

5th semester (autumn)

Course code	Course title	ECTS Credits
T210B403	Machine Elements	6
T130B012	Manufacturing Engineering	6
T110B405	Measurements	6

6th semester (spring)

T120B007	Microprocessor Technique	6
T125B001	Automatic Control Fundamentals	6
S190B121	Project Management	6

7th semester (autumn)

Course code	Course title	ECTS Credits
T210B024	Mechatronic System Design	3
T210B133	Technologies of Mechatronic Systems	9
T210B424	Quality Assurance	6
T130B183	Digitalization in Design and Manufacturing*	6

*Important note!

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

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

Course code	Course title	ECTS Credits	Semester
W200B104	Fundamentals of Fashion Design*	6	spring
T470B125	Materials Science*	9	spring
T150B174	Clothing Special Technologies	6	autumn
T470B140	Functional Textiles	6	autumn
T470B148	Design and Technologies of Complex Textiles	6	autumn
T150B175	Functional Clothing	6	spring
T470B149	Development of New Product of Fashion	6	spring

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

Course code	Course title	ECTS	Semester
T310B109	Aviation Materials	6	autumn
T310B113	Aerodynamics of Aircrafts and Dynamics of Flight	9	autumn
T310B115	Avionics	6	autumn
T310B107	Fundamentals of Aerodynamics	6	spring
T310B106	Types, Constructions and Systems of Aircrafts	6	autumn
T310B100	Human Factors in Aviation	3	spring

**Courses from the Bachelor's degree programme
INDUSTRIAL DESIGN ENGINEERING**

Course code	Course title	ECTS	Semester
W240B107	Bionics and Biomimicry in Design	6	autumn
W240B100	Sketching fundamentals	6	autumn
W240B001	Methods of Prototyping	6	spring

**Courses from the Master's degree programme
Fashion Innovation Technologies ***

Course code	Course title	ECTS Credits	Semester
T150M121	Smart Textiles and Wearable Technologies	6	autumn
T000M134	Design of Scientific Fashion Research	6	autumn
T150M136	Digital Fashion Technologies	6	autumn
T150M121	Sustainable Fashion Technology	6	autumn
T000M161	Research Project	6	autumn/spring
T150M147	Fashion Product Exploitation Modelling	6	spring
W230M010	Innovations in Fashion Design	6	spring
T150M121	Sustainable Fashion Technology	6	spring

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**Courses from the Master's degree programme
INDUSTRIAL ENGINEERING AND MANAGEMENT**

1st semester (autumn)

Course code	Course title	ECTS Credits
T130M008	Industrial Production	6
S181M004	Managerial Finance	6
T130M009	Manufacturing Planning and Control	6
T130M100	Methods of Research and Quality Control	6
T210M136	Product Development	6

2nd semester (spring)

Course code	Course title	ECTS Credits
T210M134	Industrial Maintenance	6
S191M013	Industrial Marketing	6
T130M016	Quality Management	6
T210M023	Computer-Aided Analysis of Structures *	6

3rd semester (autumn)

Course code	Course title	ECTS Credits
T130M125	International Industry and Business	6
T130M833	Computer Integrated Manufacturing	6
S190M102	Engineering Projects Management	6
S189M015	Productivity Management *	6

*Important note!

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**Courses from the Master's degree programme
MECHANICAL ENGINEERING**

Course code	Course title	ECTS Credits	Semester
T210M151	Digitization in Engineering	6	autumn
T130M833	Computer Integrated Manufacturing	6	autumn
S190M102	Mechanical Vibrations	6	autumn
T210M032	Integrated CAD/CAE/CAM Systems	6	autumn
T210M136	Product Development	6	autumn
T210M134	Industrial Maintenance	6	spring
T210M110	Dynamics of Mechatronic Systems	6	spring
T210M023	Computer-Aided Analysis of Structures*	6	spring

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**Courses from the Master's degree programme
MECHATRONICS**

Course ode	Course title	ECTS credits	Semester
1st semester (autumn)			
T130M833	Computer Integrated Manufacturing	6	autumn
T210M015	Experimental Mechanics	6	autumn
T210M153	Adaptive Mechanics and Mechatronic Systems	6	autumn
T210M109	Microelectromechanical Systems Design *	6	autumn
2nd semester (spring)			
T125M262	Computer-Aided Control of Technological Equipment	6	spring
T210M032	Integrated CAD/CAE/CAM Systems	6	spring
T210M023	Computer-Aided Analysis of Structures *	6	spring
T210M110	Dynamics of Mechatronic Systems*	6	spring
3rd semester (autumn)			
T125M125	Robotics	6	autumn
T125M123	Programmable Logical Controllers	6	autumn
T152M010	Design and Production of Composite Structures	6	autumn
S190M182	Models of Multiphysics Systems	6	autumn

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

Course ode	Course title	ECTS credits	Semester
T280M634	Design of Vehicles	6	autumn
S190M102	Engineering Projects Management	6	autumn
T280M004	Quality in Transport	6	autumn
T280M633	Safety of Vehicles and Road	6	autumn
T280M107	Unmanned Ground Vehicles Systems	6	autumn
T280M002	Vehicle Dynamics, Interaction and Energy Efficiency	6	autumn