

Master's degree in Industrial Engineering

This master's degree, which **qualifies graduates to practise the regulated profession of industrial engineer**, aims to provide multidisciplinary scientific and technical training based on an overview of industrial engineering combined with specialisation in a particular branch of industry.

At the UPC, the **master's degree in Industrial Engineering** and the bachelor's degree in Industrial Technology Engineering form an integrated programme.

More information on [the web page of this master's degree](#).

Specialisations

- Mechanics
- Construction and Structures
- Electrical Engineering
- Thermal Energetics
- Industrial Scheduling
- Fibrous Biomaterials
- Technical Textiles and Multifunctional Structures

GENERAL DETAILS

Duration and start date

Two academic years, 120 ECTS credits. Starting September and February

Timetable and delivery

Mornings and afternoons. Face-to-face

Fees and grants

Approximate fees for the master's degree, excluding degree certificate fee, €5,300 (€7,950 for non-EU residents).

[More information about fees and payment options](#)

[More information about grants and loans](#)

Language of instruction

Morning classes are taught in Catalan and afternoon classes are taught in Spanish.

Location

[Terrassa School of Industrial, Aerospace and Audiovisual Engineering \(ESEIAAT\)](#)

Official degree

[Recorded in the Ministry of Education's degree register](#)

ADMISSION

General requirements

[Academic requirements for admission to master's degrees](#)

Places

100 september + 100 february

Pre-enrolment

Pre-enrolment period open.

[How to pre-enrol](#)

Enrolment

[How to enrol](#)

Legalisation of foreign documents

All documents issued in non-EU countries must be [legalised and bear the corresponding apostille](#).

DOUBLE-DEGREE AGREEMENTS

Double-degree pathways at a single school

- Master's degree in Industrial Engineering (ESEIAAT) (any specialisation) / Master's degree in Industrial Scheduling Engineering (blended learning)
- Master's degree in Industrial Engineering (any specialisation) / Master's degree in Automatic Systems Engineering and Industrial Electronics

Further information on [this website](#)

With other Catalan universities

- Bachelor's degree in Industrial Technology Engineering + Master's degree in Industrial Engineering + Bachelor's degree in Business Administration and Management (UOC)
- Bachelor's degree in Industrial Technology Engineering + Master's degree in Industrial Engineering + Bachelor's degree in Economics (UOC)

Double-degree pathways with foreign universities

- Master's degree in Industrial Engineering + one of the following master's degrees from the Cranfield University
 - Master in Advanced Mechanical Engineering
 - Master in Investment Management

PROFESSIONAL OPPORTUNITIES

Professional opportunities

Graduates of this master's degree will acquire a multidisciplinary overview of technology that will enable them to contribute to any kind of industrial endeavour. They will be qualified for employment in engineering firms and in technical, R&D, production and sales departments. Their broad skills will also allow them to work for companies offering consultancy services in the fields of technology, management, industrial plant design and project management. The master's degree enhances the employability of its graduates by making them versatile, flexible and able to develop and lead projects across all sectors of industry. The training they receive in organisation and management techniques prepares them to take on leadership roles in industrial and service company management, project management, public administration, institutions and multidisciplinary teams.

Competencies

Generic competencies

Generic competencies are the skills that graduates acquire regardless of the specific course or field of study. The generic competencies established by the UPC are capacity for innovation and entrepreneurship, sustainability and social commitment, knowledge of a foreign language (preferably English), teamwork and proper use of information resources.

Specific competencies

On completion of this course, students will be able to:

- Understand, analyse and design electrical energy generation, transport and distribution systems.
- Understand, draft, calculate and design integrated manufacturing systems.
- Design and test machines.
- Analyse and design chemical processes.
- Design and analyse thermal machines and heat engines, hydraulic machines and industrial heat and cold facilities.
- Understand, analyse, use and manage sources of energy.
- Design electronic systems and industrial instrumentation.
- Design and draft automated production systems and advanced control processes.

- Organise and run businesses.
- Work out strategies and plans for a range of organisational structures.
- Understand business and employment law.
- Understand financial and cost accounting.
- Understand information systems for management, industrial organisation, production, logistics and quality management.
- Organise production systems, logistics and quality management systems.
- Organise work and human resource management in keeping with the principles of occupational health and safety.
- Practise integrated project management.
- Manage research, development and technological innovation.
- Design, build and use industrial plants.
- Understand building construction, facilities, infrastructure and urban development for industrial engineering.
- Calculate and design structures.
- Draft and design electrical and fluid facilities, lighting, air conditioning and ventilation, energy saving and efficiency systems, acoustics, communications, home automation and smart buildings, and safety facilities.
- Understand transport and industrial maintenance methods and techniques.
- Check and control facilities, processes and products.
- Draw up certificates, audits, verifications, tests and reports.
- Write, present and defend to university examiners an original, individually authored piece of work consisting of a professional industrial engineering project that displays all of the competencies acquired during the master's degree course.

ORGANISATION

UPC school

[Terrassa School of Industrial, Aerospace and Audiovisual Engineering \(ESEIAAT\)](#)

Academic coordinator

[Daniel Garcia Almiñana](#)

Academic calendar

[General academic calendar for bachelor's, master's and doctoral degrees courses](#)

Academic regulations

[Academic regulations for master's degree courses at the UPC](#)

CURRICULUM

Subjects	ECTS credits	Type
FIRST SEMESTER		
Advanced Automation and Control of Industrial Processes	2.5	Compulsory
Basic Instrumentation	2.5	Compulsory
Design and Behavior of Special Structures	3	Optional
Design and Construction on Industrial Plants and Related Facilities	5	Compulsory
Engineering of Thermal and Fluids Systems	7.5	Compulsory
Machine Design and Manufacturing Technologies	7.5	Compulsory
Operations Management	5	Compulsory
Project Management Key Agreements & Deals	3	Optional

Subjects		ECTS credits	Type
Specialisation in Specialisation in Construction and Structures	Advanced Automation and Control of Industrial Processes	2.5	Compulsory
	Basic Instrumentation	2.5	Compulsory
	Design and Behavior of Special Structures	3	Optional
	Design and Construction on Industrial Plants and Related Facilities	5	Compulsory
	Engineering of Thermal and Fluids Systems	7.5	Compulsory
	Machine Design and Manufacturing Technologies	7.5	Compulsory
	Operations Management	5	Compulsory
	Project Management Key Agreements & Deals	3	Optional
Specialisation in Specialisation in Electrical Engineering	Advanced Automation and Control of Industrial Processes	2.5	Compulsory
	Basic Instrumentation	2.5	Compulsory
	Design and Behavior of Special Structures	3	Optional
	Design and Construction on Industrial Plants and Related Facilities	5	Compulsory
	Engineering of Thermal and Fluids Systems	7.5	Compulsory
	Machine Design and Manufacturing Technologies	7.5	Compulsory
	Operations Management	5	Compulsory
	Project Management Key Agreements & Deals	3	Optional
Specialisation in Specialisation in Fibrous Biomaterials	Advanced Automation and Control of Industrial Processes	2.5	Compulsory
	Basic Instrumentation	2.5	Compulsory
	Design and Behavior of Special Structures	3	Optional
	Design and Construction on Industrial Plants and Related Facilities	5	Compulsory
	Engineering of Thermal and Fluids Systems	7.5	Compulsory
	Machine Design and Manufacturing Technologies	7.5	Compulsory
	Operations Management	5	Compulsory
	Project Management Key Agreements & Deals	3	Optional
Specialisation in Specialisation in Industrial Scheduling	Advanced Automation and Control of Industrial Processes	2.5	Compulsory
	Basic Instrumentation	2.5	Compulsory
	Design and Behavior of Special Structures	3	Optional
	Design and Construction on Industrial Plants and Related Facilities	5	Compulsory
	Engineering of Thermal and Fluids Systems	7.5	Compulsory
	Machine Design and Manufacturing Technologies	7.5	Compulsory
	Operations Management	5	Compulsory
	Project Management Key Agreements & Deals	3	Optional

Subjects		ECTS credits	Type
Specialisation in Specialisation in Mechanics	Advanced Automation and Control of Industrial Processes	2.5	Compulsory
	Basic Instrumentation	2.5	Compulsory
	Design and Behavior of Special Structures	3	Optional
	Design and Construction on Industrial Plants and Related Facilities	5	Compulsory
	Engineering of Thermal and Fluids Systems	7.5	Compulsory
	Machine Design and Manufacturing Technologies	7.5	Compulsory
	Operations Management	5	Compulsory
	Project Management Key Agreements & Deals	3	Optional
Specialisation in Specialisation in Technical Textiles and Multifunctional Structures	Advanced Automation and Control of Industrial Processes	2.5	Compulsory
	Basic Instrumentation	2.5	Compulsory
	Design and Behavior of Special Structures	3	Optional
	Design and Construction on Industrial Plants and Related Facilities	5	Compulsory
	Engineering of Thermal and Fluids Systems	7.5	Compulsory
	Machine Design and Manufacturing Technologies	7.5	Compulsory
	Operations Management	5	Compulsory
	Project Management Key Agreements & Deals	3	Optional
Specialisation in Specialisation in Thermal Energetics	Advanced Automation and Control of Industrial Processes	2.5	Compulsory
	Basic Instrumentation	2.5	Compulsory
	Design and Behavior of Special Structures	3	Optional
	Design and Construction on Industrial Plants and Related Facilities	5	Compulsory
	Engineering of Thermal and Fluids Systems	7.5	Compulsory
	Machine Design and Manufacturing Technologies	7.5	Compulsory
	Operations Management	5	Compulsory
	Project Management Key Agreements & Deals	3	Optional
SECOND SEMESTER			
Advanced Company Workshops for Industrial Engineering		3	Optional
Agile Methodologies and Processes for the Creation of Innovative Solutions		3	Optional
Analysis and Design of Chemical Processes		5	Compulsory
Applications of Photonics Technologies		3	Optional
Architecture of Industrial Plants and Building Services		5	Compulsory
Company Workshops for Industrial Engineering		6	Optional
Data Mining and Machine Learning for Engineers		3	Optional
Energy Technology		5	Compulsory
Facilities Management		3	Optional
Implementation and Testing of Metaheuristics for Optimization Problems		3	Optional
Industrial Fluid Power		3	Optional
Infrared Thermography for Building Diagnostics		3	Optional
Introduction to Metaheuristics for Optimization Problems		3	Optional

Subjects	ECTS credits	Type
IoT Engineering	3	Optional
Management and Operation of Terminal Buildings	3	Optional
Nonlinear Time Series Analysis	3	Optional
Photonics Sensors and Laser Technology	3	Optional
Power Generation, Transmission and Distribution	5	Compulsory
Power Transmission Systems (Fluid Power) II	3	Optional
Programming Interfaces and Applications	3	Optional
Project Management	5	Compulsory
Proportional Oil Hydraulics	3	Optional
Smart Grids & Data Analytics	3	Optional
Smart Sensors and Actuators for Internet of Things (IoT)	3	Optional
Smart Textiles	3	Optional
Theory and Design of Structures	2.5	Compulsory
Tools for Professional Practice	3	Optional
Transportation and Materials Handling Engineering	2.5	Compulsory
Workshop on Fluid Power Transmission Systems	3	Optional
Workshops for Innovation in Automotive Industries	6	Optional

Subjects		ECTS credits	Type
Specialisation in Specialisation in Industrial Scheduling	Management Control and Cost	5	Compulsory
	Advanced Company Workshops for Industrial Engineering	3	Optional
	Agile Methodologies and Processes for the Creation of Innovative Solutions	3	Optional
	Analysis and Design of Chemical Processes	5	Compulsory
	Applications of Photonics Technologies	3	Optional
	Architecture of Industrial Plants and Building Services	5	Compulsory
	Company Workshops for Industrial Engineering	6	Optional
	Data Mining and Machine Learning for Engineers	3	Optional
	Energy Technology	5	Compulsory
	Facilities Management	3	Optional
	Implementation and Testing of Metaheuristics for Optimization Problems	3	Optional
	Industrial Fluid Power	3	Optional
	Infrared Thermography for Building Diagnostics	3	Optional
	Introduction to Metaheuristics for Optimization Problems	3	Optional
	IoT Engineering	3	Optional
	Management and Operation of Terminal Buildings	3	Optional
	Nonlinear Time Series Analysis	3	Optional
	Photonics Sensors and Laser Technology	3	Optional
	Power Generation, Transmission and Distribution	5	Compulsory
	Power Transmission Systems (Fluid Power) II	3	Optional
	Programming Interfaces and Applications	3	Optional
	Project Management	5	Compulsory
	Proportional Oil Hydraulics	3	Optional
	Smart Grids & Data Analytics	3	Optional
	Smart Sensors and Actuators for Internet of Things (IoT)	3	Optional
	Smart Textiles	3	Optional
	Theory and Design of Structures	2.5	Compulsory
	Tools for Professional Practice	3	Optional
	Transportation and Materials Handling Engineering	2.5	Compulsory
	Workshop on Fluid Power Transmission Systems	3	Optional
Workshops for Innovation in Automotive Industries	6	Optional	

Subjects		ECTS credits	Type
Specialisation in Specialisation in Construction and Structures	Advanced Company Workshops for Industrial Engineering	3	Optional
	Agile Methodologies and Processes for the Creation of Innovative Solutions	3	Optional
	Analysis and Design of Chemical Processes	5	Compulsory
	Applications of Photonics Technologies	3	Optional
	Architecture of Industrial Plants and Building Services	5	Compulsory
	Company Workshops for Industrial Engineering	6	Optional
	Data Mining and Machine Learning for Engineers	3	Optional
	Energy Technology	5	Compulsory
	Facilities Management	3	Optional
	Implementation and Testing of Metaheuristics for Optimization Problems	3	Optional
	Industrial Fluid Power	3	Optional
	Infrared Thermography for Building Diagnostics	3	Optional
	Introduction to Metaheuristics for Optimization Problems	3	Optional
	IoT Engineering	3	Optional
	Management and Operation of Terminal Buildings	3	Optional
	Nonlinear Time Series Analysis	3	Optional
	Photonics Sensors and Laser Technology	3	Optional
	Power Generation, Transmission and Distribution	5	Compulsory
	Power Transmission Systems (Fluid Power) II	3	Optional
	Programming Interfaces and Applications	3	Optional
	Project Management	5	Compulsory
	Proportional Oil Hydraulics	3	Optional
	Smart Grids & Data Analytics	3	Optional
	Smart Sensors and Actuators for Internet of Things (IoT)	3	Optional
	Smart Textiles	3	Optional
	Theory and Design of Structures	2.5	Compulsory
	Tools for Professional Practice	3	Optional
	Transportation and Materials Handling Engineering	2.5	Compulsory
	Workshop on Fluid Power Transmission Systems	3	Optional
	Workshops for Innovation in Automotive Industries	6	Optional

Subjects		ECTS credits	Type
Specialisation in Specialisation in Electrical Engineering	Advanced Company Workshops for Industrial Engineering	3	Optional
	Agile Methodologies and Processes for the Creation of Innovative Solutions	3	Optional
	Analysis and Design of Chemical Processes	5	Compulsory
	Applications of Photonics Technologies	3	Optional
	Architecture of Industrial Plants and Building Services	5	Compulsory
	Company Workshops for Industrial Engineering	6	Optional
	Data Mining and Machine Learning for Engineers	3	Optional
	Energy Technology	5	Compulsory
	Facilities Management	3	Optional
	Implementation and Testing of Metaheuristics for Optimization Problems	3	Optional
	Industrial Fluid Power	3	Optional
	Infrared Thermography for Building Diagnostics	3	Optional
	Introduction to Metaheuristics for Optimization Problems	3	Optional
	IoT Engineering	3	Optional
	Management and Operation of Terminal Buildings	3	Optional
	Nonlinear Time Series Analysis	3	Optional
	Photonics Sensors and Laser Technology	3	Optional
	Power Generation, Transmission and Distribution	5	Compulsory
	Power Transmission Systems (Fluid Power) II	3	Optional
	Programming Interfaces and Applications	3	Optional
	Project Management	5	Compulsory
	Proportional Oil Hydraulics	3	Optional
	Smart Grids & Data Analytics	3	Optional
	Smart Sensors and Actuators for Internet of Things (IoT)	3	Optional
	Smart Textiles	3	Optional
	Theory and Design of Structures	2.5	Compulsory
	Tools for Professional Practice	3	Optional
	Transportation and Materials Handling Engineering	2.5	Compulsory
	Workshop on Fluid Power Transmission Systems	3	Optional
	Workshops for Innovation in Automotive Industries	6	Optional

Subjects		ECTS credits	Type
Specialisation in Specialisation in Fibrous Biomaterials	Advanced Company Workshops for Industrial Engineering	3	Optional
	Agile Methodologies and Processes for the Creation of Innovative Solutions	3	Optional
	Analysis and Design of Chemical Processes	5	Compulsory
	Applications of Photonics Technologies	3	Optional
	Architecture of Industrial Plants and Building Services	5	Compulsory
	Company Workshops for Industrial Engineering	6	Optional
	Data Mining and Machine Learning for Engineers	3	Optional
	Energy Technology	5	Compulsory
	Facilities Management	3	Optional
	Implementation and Testing of Metaheuristics for Optimization Problems	3	Optional
	Industrial Fluid Power	3	Optional
	Infrared Thermography for Building Diagnostics	3	Optional
	Introduction to Metaheuristics for Optimization Problems	3	Optional
	IoT Engineering	3	Optional
	Management and Operation of Terminal Buildings	3	Optional
	Nonlinear Time Series Analysis	3	Optional
	Photonics Sensors and Laser Technology	3	Optional
	Power Generation, Transmission and Distribution	5	Compulsory
	Power Transmission Systems (Fluid Power) II	3	Optional
	Programming Interfaces and Applications	3	Optional
	Project Management	5	Compulsory
	Proportional Oil Hydraulics	3	Optional
	Smart Grids & Data Analytics	3	Optional
	Smart Sensors and Actuators for Internet of Things (IoT)	3	Optional
	Smart Textiles	3	Optional
	Theory and Design of Structures	2.5	Compulsory
	Tools for Professional Practice	3	Optional
	Transportation and Materials Handling Engineering	2.5	Compulsory
	Workshop on Fluid Power Transmission Systems	3	Optional
	Workshops for Innovation in Automotive Industries	6	Optional

Subjects		ECTS credits	Type
Specialisation in Specialisation in Mechanics	Advanced Company Workshops for Industrial Engineering	3	Optional
	Agile Methodologies and Processes for the Creation of Innovative Solutions	3	Optional
	Analysis and Design of Chemical Processes	5	Compulsory
	Applications of Photonics Technologies	3	Optional
	Architecture of Industrial Plants and Building Services	5	Compulsory
	Company Workshops for Industrial Engineering	6	Optional
	Data Mining and Machine Learning for Engineers	3	Optional
	Energy Technology	5	Compulsory
	Facilities Management	3	Optional
	Implementation and Testing of Metaheuristics for Optimization Problems	3	Optional
	Industrial Fluid Power	3	Optional
	Infrared Thermography for Building Diagnostics	3	Optional
	Introduction to Metaheuristics for Optimization Problems	3	Optional
	IoT Engineering	3	Optional
	Management and Operation of Terminal Buildings	3	Optional
	Nonlinear Time Series Analysis	3	Optional
	Photonics Sensors and Laser Technology	3	Optional
	Power Generation, Transmission and Distribution	5	Compulsory
	Power Transmission Systems (Fluid Power) II	3	Optional
	Programming Interfaces and Applications	3	Optional
	Project Management	5	Compulsory
	Proportional Oil Hydraulics	3	Optional
	Smart Grids & Data Analytics	3	Optional
	Smart Sensors and Actuators for Internet of Things (IoT)	3	Optional
	Smart Textiles	3	Optional
	Theory and Design of Structures	2.5	Compulsory
	Tools for Professional Practice	3	Optional
	Transportation and Materials Handling Engineering	2.5	Compulsory
	Workshop on Fluid Power Transmission Systems	3	Optional
	Workshops for Innovation in Automotive Industries	6	Optional

Subjects		ECTS credits	Type
Specialisation in Specialisation in Technical Textiles and Multifunctional Structures	Advanced Company Workshops for Industrial Engineering	3	Optional
	Agile Methodologies and Processes for the Creation of Innovative Solutions	3	Optional
	Analysis and Design of Chemical Processes	5	Compulsory
	Applications of Photonics Technologies	3	Optional
	Architecture of Industrial Plants and Building Services	5	Compulsory
	Company Workshops for Industrial Engineering	6	Optional
	Data Mining and Machine Learning for Engineers	3	Optional
	Energy Technology	5	Compulsory
	Facilities Management	3	Optional
	Implementation and Testing of Metaheuristics for Optimization Problems	3	Optional
	Industrial Fluid Power	3	Optional
	Infrared Thermography for Building Diagnostics	3	Optional
	Introduction to Metaheuristics for Optimization Problems	3	Optional
	IoT Engineering	3	Optional
	Management and Operation of Terminal Buildings	3	Optional
	Nonlinear Time Series Analysis	3	Optional
	Photonics Sensors and Laser Technology	3	Optional
	Power Generation, Transmission and Distribution	5	Compulsory
	Power Transmission Systems (Fluid Power) II	3	Optional
	Programming Interfaces and Applications	3	Optional
	Project Management	5	Compulsory
	Proportional Oil Hydraulics	3	Optional
	Smart Grids & Data Analytics	3	Optional
	Smart Sensors and Actuators for Internet of Things (IoT)	3	Optional
	Smart Textiles	3	Optional
	Theory and Design of Structures	2.5	Compulsory
	Tools for Professional Practice	3	Optional
	Transportation and Materials Handling Engineering	2.5	Compulsory
	Workshop on Fluid Power Transmission Systems	3	Optional
	Workshops for Innovation in Automotive Industries	6	Optional

Subjects		ECTS credits	Type
Specialisation in Specialisation in Thermal Energetics	Advanced Company Workshops for Industrial Engineering	3	Optional
	Agile Methodologies and Processes for the Creation of Innovative Solutions	3	Optional
	Analysis and Design of Chemical Processes	5	Compulsory
	Applications of Photonics Technologies	3	Optional
	Architecture of Industrial Plants and Building Services	5	Compulsory
	Company Workshops for Industrial Engineering	6	Optional
	Data Mining and Machine Learning for Engineers	3	Optional
	Energy Technology	5	Compulsory
	Facilities Management	3	Optional
	Implementation and Testing of Metaheuristics for Optimization Problems	3	Optional
	Industrial Fluid Power	3	Optional
	Infrared Thermography for Building Diagnostics	3	Optional
	Introduction to Metaheuristics for Optimization Problems	3	Optional
	IoT Engineering	3	Optional
	Management and Operation of Terminal Buildings	3	Optional
	Nonlinear Time Series Analysis	3	Optional
	Photonics Sensors and Laser Technology	3	Optional
	Power Generation, Transmission and Distribution	5	Compulsory
	Power Transmission Systems (Fluid Power) II	3	Optional
	Programming Interfaces and Applications	3	Optional
	Project Management	5	Compulsory
	Proportional Oil Hydraulics	3	Optional
	Smart Grids & Data Analytics	3	Optional
	Smart Sensors and Actuators for Internet of Things (IoT)	3	Optional
	Smart Textiles	3	Optional
	Theory and Design of Structures	2.5	Compulsory
	Tools for Professional Practice	3	Optional
	Transportation and Materials Handling Engineering	2.5	Compulsory
	Workshop on Fluid Power Transmission Systems	3	Optional
	Workshops for Innovation in Automotive Industries	6	Optional
THIRD SEMESTER			
Acoustics		3	Optional
Applied Robotics		3	Optional
Biomedical Instrumentation		3	Optional
Business Management		5	Compulsory
Chemical Technology		3	Optional
Demolitions and Soil Preparation		3	Optional

Subjects	ECTS credits	Type
Design of Experiments	3	Optional
Designing Innovative Products and Business	3	Optional
Dynamic Analysis of Structures	3	Optional
Electrical Technology	3	Optional
Electronic Technology	3	Optional
Fundamentals of Nuclear Engineering	3	Optional
Fundamentals of Structural Calculation	3	Optional
Game Theory	3	Optional
Geotechnical Engineering	3	Optional
Introduction to Active Flow Control	3	Optional
Mobile Robots	3	Optional
Quality Management	3	Optional
Railway Systems	3	Optional
Research Seminars	3	Optional
Science and Technology Communication Through Media	3	Optional
Structures of New Generation Materials	3	Optional
Surface Engineering	3	Optional
Theory of Machines	3	Optional
Thermal Turbomachinery and Combustion	3	Optional

Subjects		ECTS credits	Type
Specialisation in Specialisation in Construction and Structures	Advanced Structures	5	Compulsory
	Concrete Structures	5	Compulsory
	Management of Construction Projects	5	Compulsory
	Smart Buildings	5	Compulsory
	Steel Structures	5	Compulsory
	Acoustics	3	Optional
	Applied Robotics	3	Optional
	Biomedical Instrumentation	3	Optional
	Business Management	5	Compulsory
	Chemical Technology	3	Optional
	Demolitions and Soil Preparation	3	Optional
	Design of Experiments	3	Optional
	Designing Innovative Products and Business	3	Optional
	Dynamic Analysis of Structures	3	Optional
	Electrical Technology	3	Optional
	Electronic Technology	3	Optional
	Fundamentals of Nuclear Engineering	3	Optional
	Fundamentals of Structural Calculation	3	Optional
	Game Theory	3	Optional
	Geotechnical Engineering	3	Optional
	Introduction to Active Flow Control	3	Optional
	Mobile Robots	3	Optional
	Quality Management	3	Optional
	Railway Systems	3	Optional
	Research Seminars	3	Optional
Science and Technology Communication Through Media	3	Optional	
Structures of New Generation Materials	3	Optional	
Surface Engineering	3	Optional	
Theory of Machines	3	Optional	
Thermal Turbomachinery and Combustion	3	Optional	

Subjects		ECTS credits	Type
Specialisation in Specialisation in Electrical Engineering	Advanced Instrumentation	2.5	Compulsory
	Control of Electrical Machines	5	Compulsory
	Control, Management and Monitoring of Processes	2.5	Compulsory
	Design of Electric Systems with Renewable Energy	5	Compulsory
	Design of Electrical Machines and Actuators	5	Compulsory
	Electrical Power Systems	5	Compulsory
	Acoustics	3	Optional
	Applied Robotics	3	Optional
	Biomedical Instrumentation	3	Optional
	Business Management	5	Compulsory
	Chemical Technology	3	Optional
	Demolitions and Soil Preparation	3	Optional
	Design of Experiments	3	Optional
	Designing Innovative Products and Business	3	Optional
	Dynamic Analysis of Structures	3	Optional
	Electrical Technology	3	Optional
	Electronic Technology	3	Optional
	Fundamentals of Nuclear Engineering	3	Optional
	Fundamentals of Structural Calculation	3	Optional
	Game Theory	3	Optional
	Geotechnical Engineering	3	Optional
	Introduction to Active Flow Control	3	Optional
	Mobile Robots	3	Optional
	Quality Management	3	Optional
	Railway Systems	3	Optional
	Research Seminars	3	Optional
	Science and Technology Communication Through Media	3	Optional
	Structures of New Generation Materials	3	Optional
	Surface Engineering	3	Optional
	Theory of Machines	3	Optional
Thermal Turbomachinery and Combustion	3	Optional	

Subjects		ECTS credits	Type
Specialisation in Specialisation in Fibrous Biomaterials	Fibrous Materials for Lignocellulosic Products Manufacturing	5	Compulsory
	Paper Manufacturing Technology and Derivatives	5	Compulsory
	Physical Characterization of Biomaterials and Paper Products	5	Compulsory
	Printing and Converting Technologies of Paper Products	5	Compulsory
	Simulation and Physicochemical Technology for the Manufacturing of Biomaterials, Pulp and Paper Products	5	Compulsory
	Acoustics	3	Optional
	Applied Robotics	3	Optional
	Biomedical Instrumentation	3	Optional
	Business Management	5	Compulsory
	Chemical Technology	3	Optional
	Demolitions and Soil Preparation	3	Optional
	Design of Experiments	3	Optional
	Designing Innovative Products and Business	3	Optional
	Dynamic Analysis of Structures	3	Optional
	Electrical Technology	3	Optional
	Electronic Technology	3	Optional
	Fundamentals of Nuclear Engineering	3	Optional
	Fundamentals of Structural Calculation	3	Optional
	Game Theory	3	Optional
	Geotechnical Engineering	3	Optional
	Introduction to Active Flow Control	3	Optional
	Mobile Robots	3	Optional
	Quality Management	3	Optional
	Railway Systems	3	Optional
	Research Seminars	3	Optional
	Science and Technology Communication Through Media	3	Optional
	Structures of New Generation Materials	3	Optional
	Surface Engineering	3	Optional
	Theory of Machines	3	Optional
	Thermal Turbomachinery and Combustion	3	Optional

Subjects		ECTS credits	Type
Specialisation in Specialisation in Industrial Scheduling	Applied Statistics in Industrial Engineering	5	Compulsory
	Business Process Reengineering	5	Compulsory
	Quantitative Methods in Industrial Scheduling	5	Compulsory
	Supply Chain Management	5	Compulsory
	Tools for Decision Analysis	5	Compulsory
	Acoustics	3	Optional
	Applied Robotics	3	Optional
	Biomedical Instrumentation	3	Optional
	Business Management	5	Compulsory
	Chemical Technology	3	Optional
	Demolitions and Soil Preparation	3	Optional
	Design of Experiments	3	Optional
	Designing Innovative Products and Business	3	Optional
	Dynamic Analysis of Structures	3	Optional
	Electrical Technology	3	Optional
	Electronic Technology	3	Optional
	Fundamentals of Nuclear Engineering	3	Optional
	Fundamentals of Structural Calculation	3	Optional
	Game Theory	3	Optional
	Geotechnical Engineering	3	Optional
	Introduction to Active Flow Control	3	Optional
	Mobile Robots	3	Optional
	Quality Management	3	Optional
	Railway Systems	3	Optional
	Research Seminars	3	Optional
Science and Technology Communication Through Media	3	Optional	
Structures of New Generation Materials	3	Optional	
Surface Engineering	3	Optional	
Theory of Machines	3	Optional	
Thermal Turbomachinery and Combustion	3	Optional	

Subjects		ECTS credits	Type
Specialisation in Specialisation in Mechanics	Advanced Machining Systems	5	Compulsory
	Fluid Systems Design	5	Compulsory
	Machine Design and Mechanical Vibrations	5	Compulsory
	Power Transmission Systems	10	Compulsory
	Acoustics	3	Optional
	Applied Robotics	3	Optional
	Biomedical Instrumentation	3	Optional
	Business Management	5	Compulsory
	Chemical Technology	3	Optional
	Demolitions and Soil Preparation	3	Optional
	Design of Experiments	3	Optional
	Designing Innovative Products and Business	3	Optional
	Dynamic Analysis of Structures	3	Optional
	Electrical Technology	3	Optional
	Electronic Technology	3	Optional
	Fundamentals of Nuclear Engineering	3	Optional
	Fundamentals of Structural Calculation	3	Optional
	Game Theory	3	Optional
	Geotechnical Engineering	3	Optional
	Introduction to Active Flow Control	3	Optional
	Mobile Robots	3	Optional
	Quality Management	3	Optional
	Railway Systems	3	Optional
	Research Seminars	3	Optional
	Science and Technology Communication Through Media	3	Optional
Structures of New Generation Materials	3	Optional	
Surface Engineering	3	Optional	
Theory of Machines	3	Optional	
Thermal Turbomachinery and Combustion	3	Optional	

Subjects		ECTS credits	Type
Specialisation in Specialisation in Technical Textiles and Multifunctional Structures	Advances in Textile Fibers	5	Compulsory
	Colorimetry, Dyes and Pigments	5	Compulsory
	Environmental Management and Sustainability in the Textile Industry	5	Compulsory
	Functional Innovations in Textile Finishes	5	Compulsory
	Yarns, Filaments and Nonwoven Textiles	5	Compulsory
	Acoustics	3	Optional
	Applied Robotics	3	Optional
	Biomedical Instrumentation	3	Optional
	Business Management	5	Compulsory
	Chemical Technology	3	Optional
	Demolitions and Soil Preparation	3	Optional
	Design of Experiments	3	Optional
	Designing Innovative Products and Business	3	Optional
	Dynamic Analysis of Structures	3	Optional
	Electrical Technology	3	Optional
	Electronic Technology	3	Optional
	Fundamentals of Nuclear Engineering	3	Optional
	Fundamentals of Structural Calculation	3	Optional
	Game Theory	3	Optional
	Geotechnical Engineering	3	Optional
	Introduction to Active Flow Control	3	Optional
	Mobile Robots	3	Optional
	Quality Management	3	Optional
	Railway Systems	3	Optional
	Research Seminars	3	Optional
Science and Technology Communication Through Media	3	Optional	
Structures of New Generation Materials	3	Optional	
Surface Engineering	3	Optional	
Theory of Machines	3	Optional	
Thermal Turbomachinery and Combustion	3	Optional	

Subjects		ECTS credits	Type
Specialisation in Specialisation in Thermal Energetics	Heat and Mass Transfer	5	Compulsory
	Heat Engines Technology	7.5	Compulsory
	Refrigeration and Air Conditioning	5	Compulsory
	Renewable Energy	7.5	Compulsory
	Acoustics	3	Optional
	Applied Robotics	3	Optional
	Biomedical Instrumentation	3	Optional
	Business Management	5	Compulsory
	Chemical Technology	3	Optional
	Demolitions and Soil Preparation	3	Optional
	Design of Experiments	3	Optional
	Designing Innovative Products and Business	3	Optional
	Dynamic Analysis of Structures	3	Optional
	Electrical Technology	3	Optional
	Electronic Technology	3	Optional
	Fundamentals of Nuclear Engineering	3	Optional
	Fundamentals of Structural Calculation	3	Optional
	Game Theory	3	Optional
	Geotechnical Engineering	3	Optional
	Introduction to Active Flow Control	3	Optional
	Mobile Robots	3	Optional
	Quality Management	3	Optional
	Railway Systems	3	Optional
	Research Seminars	3	Optional
Science and Technology Communication Through Media	3	Optional	
Structures of New Generation Materials	3	Optional	
Surface Engineering	3	Optional	
Theory of Machines	3	Optional	
Thermal Turbomachinery and Combustion	3	Optional	
FOURTH SEMESTER			
	Master's Thesis	12	Project
Specialisation in Specialisation in Construction and Structures	Master's Thesis	12	Project
Specialisation in Specialisation in Electrical Engineering	Master's Thesis	12	Project
Specialisation in Specialisation in Fibrous Biomaterials	Master's Thesis	12	Project

Subjects		ECTS credits	Type
Specialisation in Specialisation in Industrial Scheduling	Master's Thesis	12	Project
Specialisation in Specialisation in Mechanics	Master's Thesis	12	Project
Specialisation in Specialisation in Technical Textiles and Multifunctional Structures	Master's Thesis	12	Project
Specialisation in Specialisation in Thermal Energetics	Master's Thesis	12	Project