Year of study 1

Semester 1

COURSE	ECTS
Computer and Engineering Graphics	4
Materials I	6
Mathematics I	8
Mechanics I	7
Physical Exercise I	1
Technology I	4

Semester 2

COURSE	ECTS
Computer Aided Design	4
Materials II	3
Mathematics II	6
Mechanics of Deformable Bodies	6
Mechnics II	6
Physical Exercise II	1
Technology II	4

Year of study 2

Semester 3

COURSE	ECTS
Design of Machine Elements I	7
Electrical Engineering	5
Numerical Mathematics	2
Physical Exercise III	1
Technical English / German I	2
Technology III	4
Thermodynamics I	7
Vector Analysis	2

Semester 4

COURSE	ECTS
Design of Machine Elements II	7
Fluid Mechanics I	7
Measurement Theory and Techniques	4
Mechanics III	5
Physical Exercise IV	1
Probability and Statistics	2
Sociology for Engineers	2
Technical English / German II	2

Specialization: Automotive and Transportation Engineering

Year of study 3
Semester 5

COURSE	ECTS
Electrical Drives	4
Fundamentals of Heat Transfer	4
Hydraulic Drives	4
Laboratory Work	2
Material Handling Machinery	6
Process Control	5
Technical English / German III	2
Free elective course	3

Semester 6

COURSE	ECTS
Fundamentals of Finite Element Method	3
Mechanical Power Transmission	3
Motor Vehicles 1	3
Railway Vehicles	4
Simulations of Engines and Vehicles 1	3
Technical English / German IV	3
Vehicle Propulsion	5
Free elective course	3
Undergraduate Thesis	3

Specialization: Energy and Environment

Year of study 3
Semester 5

COURSE	ECTS
Process Control	5
Fundamentals of Heat Transfer	7
Laboratory Work	2
Technical English / German III	2
Viscous Fluid Flow	4
Introduction to Energy Engineering	3
Environmental Engineering	4
Free elective course	3

Semester 6

COURSE	ECTS
Basics of HVAC systems	4
Process Dynamics	3
Renewable Energy Sources and Hydrogen - Practicum	3
Technical English / German IV	3
Theory of Turbomachinery	4
Thermal Power Plants	4
Elective course of module Energy and Environment	3
Free elective course	3
Undergraduate Thesis	3

Specialization: Engineering Design and Mechanical Analysis

Year of study 3
Semester 5

COURSE	ECTS
Computer Aided Design-CAD	5
Fundamentals of Heat Transfer	4
Laboratory Work	2
Process Control	5
Product Development I	4
Strength of Structures	5
Technical English / German III	2
Free elective course	3

Semester 6

COURSE	ECTS
Design of Machine Elements III	5
Experimental Mechanics	4
Finite Elements Method	4
Product Development II	4
Technical English / German IV	3
Theory of Vibrations	4
Free elective course	3
Undergraduate Thesis	3

Specialization: Engineering Modelling and Computer Simulations

Year of study 3
Semester 5

COURSE	ECTS
Computer Aided Design-CAD	5
Fluid Mechanics II	5
Fundamentals of Heat Transfer	4
Laboratory Work	2
Numerical Methods in Mechanical Engineering	4
Process Control	5
Technical English / German III	2
Free elective course	3

Semester 6

COURSE	ECTS
Computational Fluid Dynamics I	4
Experimental Methods in Solid and Fluid Mechanics	4
Finite Elements Method	4
Introduction to Engineering Modelling	2
Linear Analysis of Structures	3
Technical English / German IV	3
Theory of Vibrations	4
Free elective course	3
Undergraduate Thesis	3

Specialization: Industrial Engineering and Management

Year of study 3
Semester 5

COURSE	ECTS
Fundamentals of Heat Transfer	4
Industrial Engineering and Management	2
Laboratory Work	2
Machining Systems	4
Process Control	5
Production Economics	4
Quality Management in Engineering	4
Technical English / German III	2
Free elective course	3

Semester 6

COURSE	ECTS
Engineering Logistics	4
Maintenance Management	4
Process Planning	4
Production Management	4
Statistics for Engineers	5
Technical English / German IV	3
Free elective course	3
Undergraduate Thesis	3

Specialization: Marine Engineering

Year of study 3
Semester 5

COURSE	ECTS
Electrical Drives	4
Environmental Engineering	4
Fundamentals of Heat Transfer	4
Laboratory Work	2
Material Handling Machinery	6
Process Control	5
Technical English / German III	2
Free elective course	3

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COURSE	ECTS
Basics of Naval Architecture	6
Introduction to Marine Engineering	3
Maintenance Management	4
Mechanical Power Transmission	3
Ship Outfit	5
Technical English / German IV	3
Free elective course	3
Undergraduate Thesis	3

Specialization: Materials Engineering

Year of study 3
Semester 5

COURSE	ECTS
Fundamentals of Heat Transfer	4
Laboratory Work	2
Materials Characterisation	6
Polymers	6
Process Control	5
Technical English / German III	2
Thermodynamics of Materials	2
Free elective course	3

Semester 6

COURSE	ECTS
Coating and Corrosion Protection of Metals	4
Ferrous Material	5
Mechanical Properties of Materials	5
Recycling of Materials	3
Technical English / German IV	3
Tribology	4
Free elective course	3
Undergraduate Thesis	3

Specialization: Pipeline Systems Engineering

Year of study 3
Semester 5

COURSE	ECTS
Computer Aided Design-CAD	5
Fundamentals of Heat Transfer	4
Hydrodynamics of Pipeline Networks	5
Laboratory Work	2
Process Control	5
Production Economics	4
Technical English / German III	2
Free elective course	3

Semester 6

COURSE	ECTS
Apparatus and Pressure Vessels	4
Electric Machines and Drives	4
Experimental Fluid Mechanics	3
Legislation in Communal Hydraulic Engineering	2
Technical English / German IV	3
Theory of Vibrations	4
Urban Hydrotechnics	4
Free elective course	3
Undergraduate Thesis	3

Specialization: Production Engineering

Year of study 3
Semester 5

COURSE	ECTS
Fundamentals of Heat Transfer	4
Laboratory Work	2
Process Control	5
Quality Management in Engineering	4
Selected Chapters of Metal Casting and Polymer Processing	5
Selected Chapters of Metal Forming and Cutting	5
Technical English / German III	2
Free elective course	3

Semester 6

COURSE	ECTS
Introduction to Design of Experiments	4
Selected Chapters of Heat Treatment and Surface Protection	4
Technical English / German IV	3
Welding and Assembly	4
Elective course of module PI 1	3
Elective course of module PI 2	3
Elective course of module PI 3	3
Free elective course	3
Undergraduate Thesis	3

Specialization: Sustainable Thermal and Process Engineering

Year of study 3
Semester 5

COURSE	ECTS
Environmental Engineering	4
Fundamentals of Heat Transfer	7
Laboratory Work	2
Process Control	5
Sustainble Energy Utilization	3
Technical English / German III	2
Viscous Fluid Flow	4
Free elective course	3

Semester 6

COURSE	ECTS
Compressors	4
Computer Aided Design BIM	4
Renewable Energy Resources	4
Technical English / German IV	3
Thermal and Process Measurement	5
Thermodynamics of Mixtures	4
Free elective course	3
Undergraduate Thesis	3