Module: Automatic Control

Year of study 1
Semester 1

COURSE	ECTS
Computer Controlled Systems	4
Control of Linear Systems	5
Mechatronics	6
Optimization Methods in System's Design and Control	5
Probability and Statistics	6
Programmable Automation	4

Semester 2

COURSE	ECTS
Artificial Neural Networks	5
Control of Nonlinear Systems	4
Digital Control Systems	6
Embedded Systems Design	4
Energy Systems	4
Student Training	4
Free elective course	3

Year of study 2
Semester 3

COURSE	ECTS
Identification of Systems	5
Power Electronics Systems	5
Project	6
Robust Control	5
Stochastic Modelling and Control	6
Free elective course	3

Semester 4

COURSE	ECTS
Automation Practicum	4
Control of Fluid Power Systems	5
Internet of Things and Cloud Computing	5
Model Predictive Control	3
Elective non-technical course	3
Diploma Thesis	10

Module: Autonomous Systems and Artificial Intelligence

Year of study 1
Semester 1

COURSE	ECTS
Artificial Intelligence	6
Computer Design of Mechatronic Systems	5
Industrial Computer Networks	5
Numerical Methods in Robotic Systems Analysis	5
Probability and Statistics	6
Free elective course	3

Semester 2

COURSE	ECTS
Artificial Neural Networks	5
Design of Algorithms	4
Evolutionary Computing	4
Machine Vision Algorithms	6
Robot Programming	4
Student Training	4
Free elective course	3

Year of study 2
Semester 3

COURSE	ECTS
Autonomous Systems Design	6
Cognitive Systems	5
Human-robot Interaction	6
Optimization Methods in System's Design and Control	4
Project	6
Free elective course	3

Semester 4

COURSE	ECTS
Automated Intralogistics Systems	5
Autonomous Vehicles	4
Humanoid Robots and Biomimetic Systems	4
Medical Robotics	4
Elective non-technical course	3
Diploma Thesis	10

Module: Cybernetics and Bioinspired Systems

Year of study 1
Semester 1

COURSE	ECTS
Artificial Intelligence	6
Bionics	5
Computer Networks	4
Mechatronics	6
Probability and Statistics	6
Free elective course	3

Semester 2

COURSE	ECTS
Artificial Neural Networks	5
Embedded Systems Design	4
Evolutionary Computing	4
Functionality of Biological Systems	5
Internet of Things and Cloud Computing	5
Student Training	4
Free elective Course	3

Year of study 2
Semester 3

COURSE	ECTS
Cognitive Systems	5
Integrated Production System Planning	5
Physical Basis of Sensors	6
Project	6
Soft Robotic Systems	5
Free elective course	3

Semester 4

COURSE	ECTS
Mixed Reality and Smart Spaces Design	6
Practicum in Computer Based Signal Processing	3
Selected Chapters in Additive Manufacturing	4
Vision Systems	4
Elective non-technical course	3
Diploma Thesis	10

Module: Manufacturing Automation

Year of study 1
Semester 1

COURSE	ECTS
Advanced 3D Modeling Techniques	5
Electrical Servodrives	5
Identification of Systems	5
Machine Learning	5
Measurement Techniques in Industry	5
Multivariable Control Systems	5

Semester 2

COURSE	ECTS
Artificial Neural Networks	5
Control of Nonlinear Systems	4
Control Systems of Industrial Machines	5
Fuzzy Control	4
Planning and Design of Machining Systems	5
Student Training	4
Free elective course	3

Year of study 2
Semester 3

COURSE	ECTS
Computer Aided Manufacturing - CAM	6
Monitoring of Manufacturing Systems and Processes	4
Numerical Control Systems	6
Power Electronics Systems	5
Project	6
Free elective course	3

Semester 4

COURSE	ECTS
Adaptive Control of Machining Systems	4
Control of Fluid Power Systems	5
Predictive Maintenance	4
Selected Chapters in Additive Manufacturing	4
Elective non-technical course	3
Diploma Thesis	10

Module: Mechatronics of Transportation Systems

Year of study 1
Semester 1

COURSE	ECTS
Electrical Servodrives	5
Internal Combustion Engines	5
Motor Vehicles	4
Optimization Methods in System's Design and Control	4
Probability and Statistics	6
Selected Topics of Automatic Control	6

Semester 2

COURSE	ECTS
Artificial Neural Networks	5
Digital Control Systems	6
Material Handling Devices and Machines	5
Practicum in Computer Based Signal Processing	3
Student Training	4
Vehicle Powertrain Mechatronics	4
Free elective course	3

Year of study 2
Semester 3

COURSE	ECTS
Mechanical Design in Mechatronics	5
Power Electronics Systems	5
Project	6
Stochastic Modelling and Control	6
Vehicle Dynamics Control	5
Free elective course	3

Semester 4

COURSE	ECTS
Aircraft Mechatronics	4
Autonomous Vehicles	4
Electromobility	5
Logistics and Transport	4
Elective non-technical course	3
Diploma Thesis	10

Module: Robotics

Year of study 1
Semester 1

COURSE	ECTS
Computer Design of Mechatronic Systems	5
Electrical Servodrives	5
Numerical Methods in Robotic Systems Analysis	5
Pneumatic and Hydraulic Servo Systems	5
Probability and Statistics	6
Programmable Automation	4

Semester 2

COURSE	ECTS
Embedded Systems Design	4
Vision Systems	4
Robot System Design	5
Robot Programming	4
Digital Control Systems	6
Free elective course	3
Student Training	4

Year of study 2
Semester 3

COURSE	ECTS
Artificial Intelligence	6
Industrial Computer Networks	5
Optimization Methods in System's Design and Control	4
Project	6
Selected Topics of Automatic Control	6
Free elective course	3

Semester 4

COURSE	ECTS
Artificial Neural Networks	5
Fuzzy Control	4
Mobile Robotics	4
Selected Chapters in Additive Manufacturing	4
Elective non-technical course	3
Diploma Thesis	10