

# STUDY PLAN

## Master in Mechatronics and Sensor Systems Technology (MST)

CPs	1st semester	2nd semester	3rd semester	4th semester
1	<b>61MST501</b> <b>Fundamentals of Sensors</b> 6 CP - Physical Chemistry (*) (3 CP) OR - Sensor Data Fusion (*) (3 CP) - Fundamentals of Physical Sensors (3 CP)	<b>61MST506</b> <b>Automotive Sensor Applications</b> 6 CP - Bus Systems (3 CP) - Communication and Visualization (3 CP)	<b>61MST601</b> <b>Environmental Sensor Technology</b> 6 CP - Environmental Process Technology (3 CP) - Environmental Lab (3 CP)	61MST606 Master's Thesis 27 CP
2				
3				
4				
5				
6				
7	<b>61MST502</b> <b>Sensor Data Processing</b> 6 CP - Analog and Digital Electronic Lab (3 CP) - Advanced Programming (3 CP)	<b>61MST507</b> <b>Advanced Simulation</b> 6 CP - Application of FEM Technology (3 CP) - Numerical Methods for Differential Equations (3 CP)	<b>61MST602</b> <b>Advanced System Engineering</b> 6 CP - Sensors Perception and Control System (3 CP) - Control Lab (3 CP)	
8				
9				
10				
11				
12	<b>61MST503</b> <b>Technology and Materials</b> 6 CP - Smart Materials (3 CP) - Technology of Sensors (3 CP)	<b>61MST508</b> <b>Embedded System</b> 6 CP - Microcontroller and Interfaces (3 CP) - Real Time Operating System (3 CP)	<b>61MST603</b> <b>Management</b> 6 CP - Research Methodology (3 CP) - Leadership and Management (3 CP)	
13				
14				
15				
16				
17	<b>61MST504</b> <b>Digital Systems Analysis</b> 6 CP - Digital Signal Processing (3 CP) - Digital Control Systems (3 CP)	<b>61MST509</b> <b>Automation</b> 6 CP - Automation System (3 CP) - Automation System Lab (3 CP)	<b>61MST604</b> <b>Scientific Project / Industry Project</b> 6 CP	
18				
19				
20				
21				
22	<b>61MST505</b> <b>Advanced Dynamic Control</b> 6 CP - Advanced Control Systems (3 CP) - Modern Intelligent Control (3 CP)	<b>61MST510</b> <b>Elective 1</b> 6 CP - Compliant Mechanism Analysis (3 CP) + Advanced Robotics (3 CP) - MEMS Technology and Applications (6 CP) - 60GER007 Primary German Language A1 (6 CP)	<b>61MST605</b> <b>Elective 2</b> 6 CP - Image Processing (3 CP) - System Identification (3 CP) - Data-Driven Modeling and Optimization for Sensor Systems (3 CP) - Sensor Interface Circuits (6 CP)	
23				
24				
25				
26				
27	<b>61MST607</b> <b>Final Examination</b> 3 CP			
28				
29				
30				
<b>Total CP</b>	<b>30/30</b>	<b>30/30</b>	<b>30/30</b>	<b>30/30</b>

Legend: CP = Credit Points; L = Unit of Instruction Lecture; La = Unit of Instruction Laboratory

Fundamentals	Specialization	General	Thesis
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### Notes:

(\*) Students choose either Physical Chemistry or Sensor Data Fusion in the 1st semester.

(\*\*) Primary German Language A1 is offered by the VGU Language Center and is a prerequisite for the Double Degree Program.

(\*\*\*) Students must select courses totaling 6 CP in Elective 1 and 6 CP in Elective 2.

Study Plan - Master in Mechatronics and Sensor Systems Technology (MST), 120 ECTS credit points.

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Approval authority	Dean, Faculty of Engineering, VGU
Version	v1.4
Effective date	20 Mar 2026
Review cycle	Annual (or earlier if curriculum/study plan changes)

Status	Public study plan
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