

**CURRICULUM**  
**Bachelor's degree program in Mechatronic systems**  
**as of 2021/2022 academic year**

ECTS Subject code T MEHSe No													
- T – type of course: B for BEng, M for MEng;													
- I - IV semester – fundamental subjects - professional field 5.1 Mechanical Engineering,													
- MEHSe – “Mechatronic systems” in English;													
- No – number of the subject;													
Lectures (L), Tutorials (Tut.), Labs (Lab.), Auditorium Total (AT), Self-Study (SS), Exam (E),													
Continuous Assessment (CA), Semester Project (SP), Semester Assignment (course work) (SA).													
№	Code	SUBJECT	Semester Load						Assesment				ECTS credits
			L	Tut.	Lab.	AT	SS	Total	E	CA	SP	SA	
<b>SEMESTER I</b>													
1	MATe12	Mathematics Part I	30	30	0	60	150	210	1				7
2	PHYe01	Physics	45	15	30	90	120	210	1				7
3	CHEe01	Chemistry	30	0	15	45	105	150		1			5
4	CCEe23	Information and Communication Technologies	30	0	45	75	165	240	1				8
5	LNGe01	Foreign Language I	0	30	0	30	30	60		1			2
6	SPRe01	Sports	0	0	0	0	30	30					1
<b>Total</b>			<b>135</b>	<b>75</b>	<b>90</b>	<b>300</b>	<b>600</b>	<b>900</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>30</b>
<b>SEMESTER II</b>													
7	MATe22	Mathematics Part II	30	30	0	60	120	180	1				6
8	ENGe01	Material Science	45	0	45	90	120	210	1			1	7
9	MECe01	Mechanics I	30	15	15	60	150	210	1			1	7
10	EEAe21	Electronics and Electrical Engineering	30	0	30	60	90	150		1			5
11	LNGe02	Foreign language II	0	30	0	30	30	60		1			2
12	PRCe01	Practicum	0	0	0	0	60	60		1			2
13	SPRe02	Sports	0	0	0	0	30	30		1			1
<b>Total</b>			<b>135</b>	<b>75</b>	<b>90</b>	<b>300</b>	<b>600</b>	<b>900</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>30</b>
<b>SEMESTER III</b>													
14	MATe31	Mathematics Part III	30	30	0	60	120	180	1				6
15	MECe02	Mechanics II	30	0	30	60	150	210	1			1	7
16	MECe03	Strength of Materials	45	0	30	75	135	210	1			1	7
17	ENGe02	Engineering Graphics	30	0	45	75	105	180		1		1	6
18	CCEe24	Internet Technologies	15	15	0	30	60	90		1			3
19	SPRe03	Sports	0	0	0	0	30	30		1			1
<b>Total</b>			<b>150</b>	<b>45</b>	<b>105</b>	<b>300</b>	<b>600</b>	<b>900</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>30</b>
<b>SEMESTER IV</b>													
20	MECe04	Machine Elements	45	15	30	90	120	210	1				7
21	MECe05	Hydraulic and Pneumatic Fluid Power	30	0	30	60	90	150	1				5
22	ENRe01	Theory of Signals and Measuring Transducers	30	0	15	45	45	90	1				3
23	MECe09	Theory of Mechanisms and Machines	30	0	15	45	75	120	1			1	4
24	EEAe23	Analog and Digital Circuitry	30	15	15	60	90	150		1		1	5
25	MECe07	Machine Elements - Course Project	0	0	0	0	90	90			1		3
26	PRCe02	Practicum	0	0	0	0	60	60		1			2
27	SPRe04	Sports	0	0	0	0	30	30		1			1
<b>Total</b>			<b>165</b>	<b>30</b>	<b>105</b>	<b>300</b>	<b>600</b>	<b>900</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>30</b>

№	Code	SUBJECT	Semester Load						Assesment				ECTS credits
			L	Tut.	Lab.	AT	SS	Total	E	CA	SP	SA	
<b>SEMESTER V</b>													
28	BMEHSe01	Basics of the Mechatronic Systems Design Process	30	15	15	60	90	150	1			1	5
29	BMEHSe02	Engineering Metrology	30	0	30	60	120	180	1			1	6
30	BMEHSe03	Microprocessor Technics	30	15	15	60	90	150	1				5
31	BMEHSe04	Quality Control	30	0	30	60	120	180		1			6
32	BMEHSe05	Optical Technics	30	0	30	60	90	150	1				5
33	BMEHSe06	Optical Technics- Course Project	0	0	0	0	90	90			1		3
<b>Total</b>			<b>150</b>	<b>30</b>	<b>120</b>	<b>300</b>	<b>600</b>	<b>900</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>30</b>
<b>SEMESTER VI</b>													
34	BMEHSe07	Automation of Discrete Mechanical Engineering	30	0	30	60	90	150	1				5
35	BMEHSe08	Intelligent Measurement Systems	30	0	30	60	90	150	1				5
36	BMEHSe09	Sensors and Actuators	45	0	15	60	90	150		1			5
37	BMEHSe10	Synthesis, Kinematics and Dynamics of Robots	30	15	15	60	90	150	1				5
38	BMEHSe11	Precision Mechatronic Systems	30	15	15	60	90	150	1				5
39	BMEHSe12	Course project subjects BMEHSe08, BMEHSe09 or BMEHSe10	0	0	0	0	90	90			1		3
40	PRCe03	Practicum	0	0	0	0	60	60		1			2
<b>Total</b>			<b>165</b>	<b>30</b>	<b>105</b>	<b>300</b>	<b>600</b>	<b>900</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>30</b>
<b>SEMESTER VII</b>													
41	BMEHSe13	Micro Electromechanical Systems (MEMS)	30	0	15	45	105	150		1		1	5
42	BMEHSe14	Modeling and Simulation of Mechatronic Systems	30	15	15	60	90	150	1				5
43	BMEHSe15	Industrial Robots	45	0	30	75	105	180	1				6
44	BMEHSe16	Electronic Regulating and Controlling Devices and Systems	30	0	30	60	90	150	1				5
45	BMEHSe17	Intelligent Manufacturing Systems	30	0	30	60	120	180	1				6
46	BMEHSe18	Industrial Robots-Course project	0	0	0	0	90	90			1		3
<b>Total</b>			<b>165</b>	<b>15</b>	<b>120</b>	<b>300</b>	<b>600</b>	<b>900</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>30</b>
<b>SEMESTER VIII</b>													
47	BMEHSe19	Optoelectronic and Laser Technics	20	0	20	40	80	120	1			1	4
48	BMEHSe20	Databases	20	0	15	35	55	90	1				3
49	BMEHSe21	Economics	20	15	0	35	55	90	1				3
50	BMEHSe22	Optional Subject (List 1)	30	0	15	45	75	120	1				4
51	BMEHSe23	Optional Subject 2 (List 2)	30	0	15	45	75	120		1			4
52	PRCe04	Practicum	0	0	0	0	60	60		1			2
53	BMEHSe24	Diploma Project	0	0	0	0	0	300	Defense of diploma thesis			10	
<b>Total</b>			<b>120</b>	<b>15</b>	<b>65</b>	<b>200</b>	<b>400</b>	<b>900</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>30</b>

### LIST OF THE OPTIONAL SUBJECTS

<b>List 1 BMEHSe22</b>		<b>ECTS = 4</b>
1	Implementation and Maintenance of Industrial Robots	<b>BMEHSe22.1</b>
2	Engineering and Business Solutions in Mechatronic	<b>BMEHSe22.2</b>
<b>List 2 BMEHSe23</b>		<b>ECTS = 4</b>
1	Reliability and Diagnostics of Mechatronic Systems	<b>BMEHSe23.1</b>
2	Office Equipment	<b>BMEHSe23.2</b>

**LIST OF THE FACULTATIVE SUBJECTS**

№	Code	SUBJECT	Semester Load						Assesment				ECTS credits
			L	Tut.	Lab.	AT	SS	Total	E	CA	SP	SA	
<b>SEMESTER V</b>													
1	<b>FaSPR05</b>	Sport	0	0	0	<i>0</i>	30	<b>30</b>		1			<b>1</b>
2	<b>FaBMEHSe01</b>	Theoretical Electrotechnic	30	30	0	<b>60</b>	90	<b>150</b>		1			<b>5</b>
<b>SEMESTER VI</b>													
1	<b>FaSPR06</b>	Sport	0	0	0	<i>0</i>	30	<b>30</b>		1			<b>1</b>
2	<b>FaBMEHSe02</b>	Design of Electronic Devices	30	0	30	<b>60</b>	90	<b>150</b>		1			<b>5</b>
<b>SEMESTER VII</b>													
1	<b>FaSPR07</b>	Sport	0	0	0	<i>0</i>	30	<b>30</b>		1			<b>1</b>
2	<b>FaBMEHSe03</b>	Bussines Ethics	30	15	0	<b>45</b>	75	<b>120</b>		1			<b>4</b>
<b>SEMESTER VIII</b>													
1	<b>FaSPR08</b>	Sport	0	0	0	<i>0</i>	30	<b>30</b>		1			<b>1</b>