

CURRICULUM

Bachelor's degree program in Automation, Information and Control Engineering as of 2021/2022 academic year

(in Bulgarian)													
ECTS Subject code T AICE No													
- T – type of course: B for BEng, M for MEng;													
- I - IV semester – fundamental subjects - professional field 5.2. Electrical Engineering, Electronics and Automation;													
- AICE – “Automation, Information and Control Engineering”;													
- 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	
SEMESTER I													
1	MAT11	Mathematics I	45	30	0	75	165	240	1				8
2	PHY02	Physics	30	30	15	75	165	240	1				8
3	CHE02	Chemistry	15	0	30	45	105	150	1				5
4	ENG06	Fundamentals of Engineering Design	15	0	45	60	120	180		1		1	6
5	LNG01	Foreign language I	0	30	0	30	30	60		1			2
6	SPR01	Sport	0	0	0	0	30	30		1			1
Total			105	90	90	285	615	900	3	3	0	1	30
SEMESTER II													
7	MAT21	Mathematics II	45	30	0	75	135	210	1				7
8	EEA01	Electrical Materials	30	0	30	60	90	150	1				5
9	CCE26	Programming I	30	0	30	60	90	150		1		1	5
10	MEC22	Mechanics	30	30	0	60	90	150	1				5
11	EEA02	Technical Safety	30	0	15	45	105	150		1			5
12	PRC01	Practicum	0	0	0	0	60	60		1			2
13	SPR02	Sport	0	0	0	0	30	30		1			1
Total			165	60	75	300	600	900	3	4	0	1	30
SEMESTER III													
14	EEA03	Theoretical Electrical Engineering I	30	30	15	75	165	240	1			1	8
15	EEA04	Electrical Measurements	30	0	30	60	120	180	1				6
16	MEC23	Mechanical systems	30	0	15	45	105	150		1			5
17	EEA05	Semiconductor elements	30	0	30	60	90	150	1				5
18	EEA06	Electronic Circuitry Theory	30	0	30	60	90	150		1			5
19	SPR03	Sport	0	0	0	0	30	30		1			1
Total			150	30	120	300	600	900	3	3	0	1	30
SEMESTER IV													
20	EEA07	Theoretical Electrical Engineering II	30	30	15	75	135	210	1			1	7
21	CCE27	Programming and Tools for Mathematical Modelling	15	0	30	45	75	120		1		1	4
22	EEA08	Automatic Control Theory	30	0	30	60	90	150	1				5
23	EEA09	Digital Circuitry	30	0	30	60	90	150	1				5
24	CCE28	Basics of Telecommunications	30	0	15	45	75	120		1			4
25	EEA10	Digital Circuitry – project	0	0	0	0	60	60			1		2
26	PRC02	Practicum	0	0	0	0	60	60		1			2
27	SPR04	Sport	0	0	0	0	30	30		1			1
Total			135	30	120	285	615	900	3	4	1	2	30

№	Code	SUBJECT	Semester Load						Assesment				ECTS credits
			L	Tut.	Lab.	AT	SS	Total	E	CA	SP	SA	
SEMESTER V													
28	BpAICE01	Linear Control Systems	45	0	28	73	107	180	1			1	6
29	BpAICE02	Technical devices for automation	30	0	19	49	71	120	1				4
30	BpAICE03	Technical devices for automation - project	0	0	0	0	30	30			1		1
31	BpAICE04	Microprocessor systems	45	0	28	73	107	180	1				6
32	BpAICE05	Measurement of Non-electrical Quantities	30	0	19	49	71	120	1				4
33	BpAICE06	Economy and management	18	0	0	18	42	60		1			2
34	BpAICE07	Engineering Laboratory Practice	0	0	0	0	60	60		1			2
35	BpAICE08	Electromechanical Systems	30	0	19	49	101	150		1		1	5
Total			198	0	113	311	589	900	4	3	1	2	30
SEMESTER VI													
35	BpAICE09	Systems Identification	33	0	19	52	98	150	1				5
36	BpAICE10	Process Control	33	0	19	52	68	120	1				4
37	BpAICE11	Process Control - project	0	0	0	0	30	30			1		1
38	BpAICE12	Control of Electromechanical Systems	33	0	19	52	98	150	1			1	5
39	BpAICE13	Communication and information systems	33	0	19	52	98	150	1				5
40	BpAICE14	Artificial Intelligence and Robotics	33	0	19	52	98	150		1			5
41	BpAICE15	Quality Management and Control	33	0	19	52	98	150		1			5
Total			198	0	114	312	588	900	4	2	1	1	30
SEMESTER VII													
42	BpAICE16	Building automation	34	0	18	52	128	180	1			1	6
43	BpAICE17	Intelligent control systems	34	0	18	52	128	180	1				6
44	BpAICE18	Optional Subject 1	32	0	19	51	69	120	1				4
45	BpAICE19	Optional Subject 2	32	0	19	51	69	120		1			4
46	BpAICE20	Optional Subject 3	32	0	19	51	99	150		1		1	5
47	BpAICE21	Optional Subject 4	32	0	19	51	69	120	1				4
48	BpAICE22	Specialty project	0	0	0	0	30	30			1		1
Total			196	0	112	308	592	900	4	2	1	2	30
SEMESTER VIII													
49	BpAICE23	Multivariable control systems	23	0	10	33	87	120	1				4
50	BpAICE24	Modern management methods in industry	23	0	10	33	87	120	1				4
51	BpAICE25	Logic control	23	0	10	33	57	90		1			3
52	BpAICE26	Virtual technologies in measurement systems	23	0	10	33	57	90		1			3
53	BpAICE27	Bioinformatics	23	0	10	33	57	90		1			3
54	BpAICE28	Servo control and robot drive	23	0	10	33	57	90		1			3
54	BpAICE29	Diploma project	0	0	0	0	300	300	Defense of diploma thesis			10	
Total			138	0	60	198	702	900	2	4	0	0	30

*Remark: The subjects from the lists of the optional subjects

BpAICE(18.1 до 21.1) form Module „Control Systems”

BpAICE(18.2 до 21.2) form Module „System Engineering”

**Remark: The assessments (Continuous Assessment) for "Sport" and "Practicum" is "Accepted/Not accepted".

LIST OF THE OPTIONAL SUBJECTS

List 1 Optional subject 1		ECTS = 4
1	Nonlinear control systems	BpAICE18.1
2	Dynamic systems and control	BpAICE18.2
List 2 Optional subject 2		ECTS = 4
1	Programming of robots and robotic systems	BpAICE19.1
2	Information sensor systems for robots	BpAICE19.2
List 3 Optional subject 3		ECTS = 5
1	Automation of manufacturing mechanisms	BpAICE20.1
2	Information and control systems in the industry	BpAICE20.2
List 4 Optional subject 4		ECTS = 4
1	Control of electric drives	BpAICE21.1
2	Computer vision and image recognition	BpAICE21.2

LIST OF THE FACULTATIVE SUBJECTS

№	Code	SUBJECT	Semester Load						Assesment				ECTS credits	
			L	Tut.	Lab.	AT	SS	Total	E	CA	SP	SA		
SEMESTER II														
1	FaLNG02	Foreign Language II	0	30	0	30	30	60		1				2
SEMESTER V														
1	FaSPR05	Sport	0	0	0	0	30	30		1				1
2	FaBpAICE2	Optional facultative subject from list 5	15	0	45	60	60	120		1				4
SEMESTER VI														
1	FaSPR06	Sport	0	0	0	0	30	30		1				1
2	FaBpAICE03	Optional facultative subject from list 6	15	0	45	60	60	120		1				4
SEMESTER VII														
1	FaSPR07	Sport	0	0	0	0	30	30		1				1
SEMESTER VIII														
1	FaSPR08	Sport	0	0	0	0	30	30		1				1

LIST OF THE OPTIONAL SUBJECTS

List 5		ECTS = 4
1	Introduction to Matlab	FaBpAICE2.1
2	Foundations of programmable controllers	FaBpAICE2.2
List 6		ECTS = 3
1	Project management	FaBpAICE3.1
2	System Design	FaBpAICE3.2