

## CURRICULUM

ECTS Subject code – **TpAICENo, FTpEE No**

- **T** – type of course: **B** – for BEng, **M** –for MEng;
- **p** – Plovdiv Branch, place of education;
- **AICE** – Automation, Information and Control Engineering;
- **FBEE No** – F-fundamental;B-bachelor; EE- electrical specializations;
- **No** – subsequent number of the subject;

Lectures (L), tutorials (Tut), labs (Lab.) weekly;

exam (E), continuous assessment (CA); semester projects (SP)/ semester assignment(course work) (SA).

No	SUBJECT	Week Load						Assessment				ETCS code	ETCS credits
		L	Tut	Lab	AT	SS	Total	E	CA	SP	SA		

### SEMESTER I

1	Mathematics I	3	3	0	6	8	14	1				FBpEE01	8
2	Physics I	2	1	1	4	7	11	1				FBpEE02	7
3	Chemistry	1	0	1	2	5	7	1				FBpEE03	4
4	Programming and computers I part	2	0	2	4	6	10		1			FBpEE04	6
5	Engineering Design Fundamentals – Part I	1	0	2	3	5	8		1*		1	FBpEE05	5
6	Foreign Languages I	0	(2)	0	(2)	(4)	(6)		1*			FBpEE06	0
7	Physical Culture	0	(3)	0	(3)	0	(3)					FBpEE07	0
<b>TOTAL</b>		<b>9</b>	<b>4</b>	<b>6</b>	<b>19</b>	<b>31</b>	<b>50</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>1</b>		<b>30</b>

### SEMESTER II

8	Higher Mathematics - II	3	2	0	5	5	10	1				FBpEE08	6
9	Physics II	2	0	1	3	4	7	1				FBpEE09	5
10	Material Science	2	0	1	3	4	7	1				FBpEE10	4
11	Mechanics	2	2	0	4	4	8	1				FBpEE11	6
12	Programming and use of computers II	2	0	1	3	4	7		1		1	FBpEE12	5
13	Engineering Design Fundamentals – Part II	1	0	1	2	3	5		1*			FBpEE13	3
14	Technological practicum	0	1	(2)	1	1	2					FBpEE14	1
15	Foreign Languages II	0	(2)	0	(2)	(4)	(4)		1*			FBpEE15	0
16	Physical Culture	0	(3)	0	(3)	0	(3)					FBpEE16	0
<b>TOTAL</b>		<b>12</b>	<b>5</b>	<b>4</b>	<b>21</b>	<b>29</b>	<b>50</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>1</b>		<b>30</b>

*\*One mark for a subject studied in two semesters with continuous assessment*

### SEMESTER III

17	Higher Mathematics - III	2	2	0	4	6	10	1				FBpEE17	7
18	Theoretical Electrical Engineering – Part I	2	2	1	5	7	12	1			1	FBpEE18	7
19	Technical Safety	2	0	1	3	4	7	1				FBpEE19	4
20	Semiconductor Electronics	3	0	2	5	5	10	1				FBpEE20	7
21	Economics	2	1	0	3	3	6		1			FBpEE21	5
22	Foreign Languages III	0	(2)	0	(2)	(5)	(5)		1			FBpEE22	0
23	Physical Culture	0	(3)	0	(3)	0	(3)					FBpEE23	0
<b>TOTAL</b>		<b>11</b>	<b>5</b>	<b>4</b>	<b>20</b>	<b>30</b>	<b>50</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>1</b>		<b>30</b>

No	SUBJECT	Week Load						Assessment				ETCS code	ETCS credits
		L	Tut	Lab	AT	SS	Total	E	CA	SP	SA		

### SEMESTER IV

24	Control Theory I	2	0	2	4	5	9	1				BpAICE24	5
25	Theoretical Electrical Engineering – Part 2	2	1	1	4	4	8	1			1	BpAICE25	5
26	Pulse and digital circuit engineering	2	0	2	4	4	8		1			BpAICE26	5
27	Electric measurements	2	0	2	4	4	8	1				BpAICE27	5
28	Electromechanical devices	3	0	2	5	5	10	1				BpAICE28	5
29	Electromechanical devices -project	0	0	0	0	1	1			1		BpAICE29	1
30	Optional Subject in Module(List OS-1)	2	1	0	3	3	6		1			BpAICE30	4
31	Physical Culture	0	(3)	0	(3)	0	(3)					BpAICE31	0
<b>TOTAL</b>		<b>13</b>	<b>2</b>	<b>9</b>	<b>24</b>	<b>26</b>	<b>50</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>1</b>		<b>30</b>

### SEMESTER V

32	Control Theory II	2	0	2	4	6	10	1			1	BpAICE32	6
33	Technical devices for automation	2	0	2	4	5	9	1				BpAICE33	5
34	Technical devices for automation – project	0	0	0	0	2	2			1		BpAICE34	1
35	Microprocessor systems	2	0	2	4	4	8	1				BpAICE35	5
36	Measurement of Nonelectrical Quantities	2	0	2	4	4	8	1				BpAICE36	5
37	Data and signal processing	2	0	2	4	4	8		1			BpAICE37	5
38	Engineering laboratory practice	1	0	2	3	2	5		1			BpAICE38	3
<b>TOTAL</b>		<b>11</b>	<b>0</b>	<b>12</b>	<b>23</b>	<b>27</b>	<b>50</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>1</b>		<b>30</b>

### SEMESTER VI

39	Systems Identification	2	0	2	4	5	9	1				BpAICE39	6
40	Process Control	2	0	2	4	4	8	1				BpAICE40	5
41	Process Control - project	0	0	0	0	1	1			1		BpAICE41	1
42	Control of Electromechanical Systems	2	0	2	4	4	8	1			1	BpAICE42	5
43	Communication Systems in Integrated Industries	2	0	2	4	4	8	1				BpAICE43	4
44	Artificial Intelligence and Robotics	2	0	2	4	4	8		1			BpAICE44	4
45	Quality Management and Control	2	0	2	4	4	8		1			BpAICE45	5
<b>TOTAL</b>		<b>12</b>	<b>0</b>	<b>12</b>	<b>24</b>	<b>26</b>	<b>50</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>1</b>		<b>30</b>

No	SUBJECT	Week Load						Assessment				ETCS code	ETCS credits
		L	Tut	Lab	AT	SS	Total	E	CA	SP	SA		

### SEMESTER VII

46	Building Automation	2	0	2	4	5	9	1				BpAICE46	5
47	Intelligent Control Systems	2	0	2	4	5	9	1				BpAICE47	5
48	Optional Subject (List OS- 2)	2	0	1	3	3	6	1				BpAICE48	4
49	Optional Subject (List OS- 3)	2	0	1	3	3	6		1			BpAICE49	4
50	Optional Subject (List OS- 4)	2	0	1	3	3	6		1		1	BpAICE50	4
51	Optional Subject (List OS- 5)	3	1	2	6	6	12	1				BpAICE51	7
52	Optional Subject (List OS- 5)-project	0	0	0	0	2	2			1		BpAICE52	1
<b>TOTAL</b>		<b>13</b>	<b>1</b>	<b>9</b>	<b>23</b>	<b>27</b>	<b>50</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>1</b>		<b>30</b>

### SEMESTER VIII – 10 седмици

53	Optional Subject (List OS- 6)	2	0	2	4	4	8	1				BpAICE53	4
54	Optional Subject (List OS- 7)	2	0	2	4	4	8	1				BpAICE54	3
55	Optional Subject (List OS- 8)	2	0	2	4	4	8		1			BpAICE55	3
56	Optional Subject (List OS- 9)	2	0	2	4	4	8		1			BpAICE56	3
57	Optional Subject (List OS- 10)	2	0	2	4	4	8		1			BpAICE57	3
58	Optional Subject (List OS- 11)	2	0	2	4	4	8		1			BpAICE58	3
59	Project on the speciality	0	0	0	0	2	2			1		BpAICE59	1
<b>Diploma project - 7 weeks</b>		<b>Diploma project defence</b>											<b>10</b>
<b>TOTAL</b>		<b>12</b>	<b>0</b>	<b>12</b>	<b>24</b>	<b>26</b>	<b>50</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>0</b>		<b>30</b>

**LIST OF OPTIONAL SUBJECTS AND OPTIONAL SUBJECTS IN MODULES**

<b>List OS-1 (ECTS=4)</b>		
1	Industrial management	BpAICE30.1
2	Small firm management	BpAICE30.2
3	Marketing	BpAICE30.3
4	Management	BpAICE30.4
<b>List OS-2 (ECTS=4)</b>		
1	Nonlinear control systems	BpAICE48.1
<b>List OS-3 (ECTS=4)</b>		
1	Electric Drives Theory	BpAICE49.1
<b>List OS-4 (ECTS=4)</b>		
1	Process Control - II	BpAICE50.1
<b>List OS-5 (ECTS=7)</b>		
1	Control of Electric Drives	BpAICE51.1
<b>List OS-6 (ECTS=4)</b>		
1	Computer vision and image recognition	BpAICE53.1
2	Information and Sensor Systems for Robots	BpAICE53.2
<b>List OS-7 (ECTS=3)</b>		
1	Automation of Manufacturing Mechanisms	BpAICE54.1
2	Energy efficiency in industry	BpAICE54.2
<b>List OS-8 (ECTS=3)</b>		
1	Systems Design	BpAICE55.1
2	Information and control systems in the field of environmental protection	BpAICE55.2
<b>List OS-9 (ECTS=3)</b>		
1	Power and Control Electronics in Electric Drives	BpAICE56.1
2	Electrical Drives with Synchronous Motors	BpAICE56.2
<b>List OS-10 (ECTS=3)</b>		
1	Logical Control	BpAICE57.1
2	Control of combined discrete/continuous processes	BpAICE57.2
<b>List OS-11 (ECTS=3)</b>		
1	Programmable Logic Controller	BpAICE58.1
2	Information and control systems in the industry	BpAICE58.2