

Curricula of the specialty

“MACHINE AND INSTRUMENT BUILDING”

ECTS Subject code T ME SN

- T - type of course: **B** for BEng, **M** for MEng in Machine and Instrument Building (ME)
- SN - subsequent number of the subject

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

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

№	SUBJECT	Week Load					Assessment				ECTS subject code	ECTS credits
		L	Tut.	Lab.	SS	Total	E	CA	SP	SA		

SEMESTER I

1.	Higher mathematics – part I	1.5	1	1	4.5	8	1				BME01	4
2.	Higher mathematics – part II	2	1	1	4	8	1				BME02	5
3.	Physics	3	0	2	5	10	1				BME03	7
4.	Chemistry	1.5	0	1.5	4	7	1				BME04	4
5.	Applied geometry and engineering graphics – part I	1.5	0	1.5	5	8		1		1	BME05	4
6.	Informatics	1.5	0	3	4.5	9		1		1	BME06	6
7.	Physical education	0	(3)	0							BME07	
	TOTAL	11	2	10	27	50	4	2		2		30

SEMESTER II

8.	Higher mathematics – part III	3	1.5	1	6.5	12	1				BME08	7
9.	Mechanics – part I	1.5	1.5	0	4	7	1			1	BME09	4
10.	Mechanics of fluids	2	0	1.5	4.5	8	1				BME10	5
11.	Science and technology of materials – part I	2	0	1.5	4.5	8	1				BME11	5
12.	Applied geometry and engineering graphics – part II	1	0	1.5	4.5	7		1		1	BME12	3
13.	Foreign language	0	4	0	4	8		1			BME13	6
14.	Physical education	0	(3)	0							BME14	
	TOTAL	9.5	7	5.5	28	50	4	2		2		30

SEMESTER III

15.	Science and technology of materials – part II	2	0	1.5	4.5	8	1				BME15	5
16.	Mechanics – part II	1.5	1	1	4.5	8	1			1	BME16	4
17.	Strength of materials – part I	1.5	1.5	0	5	8	1			1	BME17	4
18.	Heat engineering	2	0	1.5	4.5	8		1			BME18	5
19.	Electrical engineering and electronics	3	0	2	5	10	1				BME19	7
20.	Metrology and measuring equipment	2	0	1.5	4.5	8		1			BME20	5
21.	Physical education	0	(3)	0							BME21	
	TOTAL	12	2.5	7.5	28	50	4	2		2		30

SEMESTER IV

22.	Strength of materials – part II	1.5	0	1.5	5	8		1		1	BME22	4
23.	Machine elements – part I	2	0	3	6	11	1				BME23	7
24.	Theory of mechanisms and machines	2	0	1.5	4.5	8	1			1	BME24	5
25.	Processing of materials, tools and machines	2	0	1.5	4.5	8	1				BME25	6
26.	Engineering measurements	2	0	1.5	4.5	8	1				BME26	5
27.	Hauling and hoisting equipment	1.5	0	1.5	4	7		1			BME27	3
28.	Physical education	0	(3)	0							BME28	
	TOTAL	11	0	10.5	28.5	50	4	2		2		30

№	SUBJECT	Week Load					Assessment				ECTS subject code	ECTS credits
		L	Tut.	Lab.	SS	Total	E	CA	SP	SA		

SEMESTER V

29.	Hydraulic and pneumatic drive	1.5	0	1.5	3	6		1			BME29	4
30.	Precise equipment elements	2	0	1.5	5.5	9	1				BME30	6
31.	Technology of machine building	3	0	1.5	5.5	10	1				BME31	6
32.	Methods of design	1.5	0	3	5.5	10	1				BME32	5
33.	Technical safety	1.5	0	1	2.5	5		1			BME33	3
34.	Machine elements – part II	1.5	0	1	3.5	6	1				BME34	4
35.	Machine elements – thesis	0	0	(2)	4	4			1		BME35	2
TOTAL		11	0	9.5	29.5	50	4	2	1			30

SEMESTER VI

36.	Technology of instrument building	3	0	1.5	4.5	9	1				BME36	5
37.	Testing of construction materials	3	0	1.5	4.5	9	1				BME37	5
38.	Regulatory and controlling equipment	2	0	1.5	4.5	8	1				BME38	5
39.	Optional subject 1 (list 1)	3	0	2	5	10	1				BME39	6
40.	Optional subject 2 (list 1)	3	0	2	5	10		1			BME40	6
41.	Engineering design – part I	0	(3)	0	4	4			1		BME41	3
TOTAL		14	0	8.5	27.5	50	4	1	1			30

SEMESTER VII

42.	Economics	2	1.5	0	3.5	7		1			BME42	4
43.	Automation and robotization of production	2	0	1.5	4.5	8	1				BME43	5
44.	Quality management and control	1.5	0	1.5	3	6		1			BME44	4
45.	Optics and optic devices	2	0	2	4	8	1				BME45	5
46.	Optional subject 3 (list 2)	3	0	1.5	4.5	9	1				BME46	5
47.	Optional subject 4 (list 2)	2	0	1.5	4.5	8	1				BME47	4
48.	Engineering design – part II	0	(3)	0	4	4			1		BME48	3
TOTAL		12.5	1.5	8	28	50	4	2	1			30

SEMESTER VIII

49.	Industrial management	3	2	0	5	10		1			BME49	4
50.	Optional subject 5 (list 3)	4	0	3	7	14	1				BME50	5
51.	Optional subject 6 (list 3)	3	0	2	6	11	1				BME51	4
52.	Optional subject 7 (list 3)	2	0	2	7	11	1				BME52	4
53.	Engineering design – part III	0	(3)	0	4	4			1		BME53	3
DIPLOMA PROJECT 15 WEEK		DIPLOMA EXAMINATION										10
TOTAL		12	2	7	29	50	3	1	1			30

Optional Subjects

		Name of subject	Module				
			CME	PE	SIB	WP	MP
List 1 (Sixth Semester)							
BME 39	L101	Investigation on stochastic processes	M1	M2			
	L102	Structure and operation of detonators and fuses			M3		
	L103	Structure and operation of small arms				M4	
	L104	Structure and operation of munitions					M5
BME 40	L105	Accuracy of measuring devices	M1	(M2)			
	L106	Engineering logistics	(M1)	M2			
	L107	Fire arms equipment			M3		M5
	L108	Structure and operation of munitions for small arms				M4	
List 2 (Seventh Semester)							
BME 46	L201	Fine mechanic engineering	M1	M2			
	L202	Ballistics			M3	M4	M5
BME 47	L203	Measuring instruments for physical and mechanic geometric quantities	M1				
	L204	Measuring instruments for linear and angle dimensions		M2			
	L205	Investigation on fast-running processes			M3		M5
	L206	Targets				M4	
List 3 (Eighth Semester)							
BME 50	L301	Technical measurements – part II	M1	M2			
	L302	Design of elements for detonators and fuses			M3		
	L303	Design of elements for fire weapon				M4	
	L304	Design of elements for munitions					M5
BME 51	L305	Special materials and technologies for instrument building	M1	M2			
	L306	Field testing			M3	M4	M5
BME 52	L307	On board instruments and control indicators	M1				
	L308	Navigation instruments and gyroscopic systems		M2			
	L309	Detonator and fuse production			M3		
	L310	Small arms production				M4	
	L311	Munitions production					M5

Optional modules:

- M1 – Control and measuring equipment (CME)
- M2 – Precise equipment (PE)
- M3 – Special instrument building (SIB)
- M4 – Weapon production (WP)
- M5 – Munitions production (MP)

BASIC PARAMETERS OF THE COURSE SCHEDULE

1. Length of studies – 4 years, 8 semesters
2. Lecture attendance per curriculum
Total: 2520.0 hours; Out of them: Lectures - 1335.0 hours
 Seminars - 215.0 hours
 Laboratory work - 970.0 hours
3. Total number of the subjects
 - 3.1. Compulsory - 38
 - 3.2. Optional - 7
4. Assessment
 - 4.1. Examinations - 31
 - 4.2. Current grades - 14
 - 4.3. Course projects - 4
 - 4.4 Course theses - 8

Date:

Dean of the Faculty
of Machine and
Instrument Building
/Assoc. Prof. Dr. Eng. V. Nikolov/

Approved at the Faculty Meeting of the Faculty of Machine and Instrument Building on 31st May 2001 under protocol No. 7

Approved at the Academic Meeting of the Technical University – Sofia on 18th July 2001 under protocol No. 8

Amended at the Faculty Meeting of the Faculty of Machine and Instrument Building on 14th November 2002 under protocol No. 2

Amended at the Academic Meeting of the Technical University – Sofia on 20th November 2002 under protocol No. 12