PROGRAMME OF STUDIES

1. Description

Number of semesters: **7**	*Number ECTS points necessary to obtain qualifications:* **210**
Prerequisites (particularly for second-level studies): *The basis for admission to study is the ENROLMENT INDEX. Its value is determined by selected results of the secondary school-leaving examination. The ENROLMENT INDEX is the sum of the points scored in the qualifying subjects (mathematics, physics, the Polish language, a modern foreign language), calculated in accordance with the applicant admission rules passed by the Senate. The enrolment index threshold value is set depending on the number of applicants.*	*Upon completion of studies graduate obtains professional degree of: inżynier* *1st/ 2nd * level qualifications*
Possibility of continuing studies: **2nd level**	*Graduate profile, employability:* *The 1st-level-studies main-field-of-study MTR graduate has skills in: using the acquired knowledge in her/his professional life, communicating with the workplace milieu, actively participating in team work, managing her/his subordinates, undertaking independent business activity and dealing with legal and economic problems. The Mechatronics graduate has knowledge of mechanics, electrotechnics and electronics, information science, metrology, automation and robotics, and control theory and engineering. This wide, specific to main field of study Mechatronics, education area, forms a nationally unique profile of the graduate as a comprehensively educated engineer prepared to take up challenges in practically any field of present-day science and technology. The graduate has the skill to exploit the acquired knowledge in the design, manufacture, implementation and operation of mechatronic devices. The graduate is prepared to work in:* *the electrical machinery industry, the automotive industry, the aircraft industry, the machine tool industry, the domestic appliances industry, the medical equipment industry, scientific-research institutions, R&D centres, design-construction centres, health-care institutions (medical and diagnostic equipment operation) and service and testing stations. The graduate is prepared to undertake 2nd level studies.*
Indicate connection with University's mission and its development strategy: the knowledge acquired in the course of the studies is not only to bear fruit in the graduate's future professional career, but also to shape an enterprising and creative person ready to face new challenges.	

2. Fields of science and scientific disciplines to which educational effects apply:

Technological sciences /
Mechanical engineering , Mechanics, Electronics, Electrical engineering

3. Concise analysis of consistency between assumed educational effects and labour market needs

The education effects apply to not only the broadly understood mechanics, electrotechnics and electronics, automation and robotics, but also, because of the demands of the modern engineering and technology used in industry today, to microprocessor engineering, control theory and engineering, information science and management and marketing techniques. Having achieved the assumed educational effects, the graduate will be able to find an attractive and interesting job in all the branches of industry and to set up her/his own business. The educational effects were reported and discussed at meetings of the Electrical Engineering Faculty Council whose members include representatives of industrial plants from Poland, especially from Lower Silesia and the neighbouring provinces.

4. List of education modules:

4.1. List of obligatory modules:

4.1.1 List of general education modules

4.1.1.1 *Liberal-managerial subjects* **module** *(min. ..2.... ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/g roup of courses	Way[3] of creditin g	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
1.	MCM031006W	Management Essentials	1					K1MTR_W04, K1MTR_W28	15	30	1	0,6	T	Z			KO	Ob.
2.	MCM036006W	Project Management	1					K1MTR_W28	15	30	1	0,6	T	Z			KO	Ob.
		Total	**2**	**0**	**0**	**0**	**0**		**30**	**60**	**2**	**1,2**						

4.1.1.2 *Foreign languages* **module** *(min. .... ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/g roup of courses	Way[3] of creditin g	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
		Total	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**						

4.1.1.3 *Sporting classes* **module** *(min. .... ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/g roup of courses	Way[3] of creditin g	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
		Total	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**						

4.1.1.4 *Information technologies* **module** *(min. 2 ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/g roup of courses	Way[3] of creditin g	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
1.	MCM031007W	Information Technology	1					K1MTR_W01, K1MTR_W02	15	30	1	0,6	T	Z			KO	Ob.
2.	MCM031007L	Information Technology			1			K1MTR_U19	15	30	1	0,7	T	Z		P	KO	Ob.
		Total	**1**	**0**	**1**	**0**	**0**		**30**	**60**	**2**	**1,3**						

Altogether for general education modules

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes1
lec	cl	lab	pr	sem				
3	0	1	0	0	60	120	4	2,5

4.1.2 List of basic sciences modules

4.1.2.1 *Mathematics* module

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
1.	MAP001140W	Algebra and Analytic Geometry	2					K1MTR_W01	30	60	2	1,5	T	E	O		PD	Ob.
2.	MAP001140C	Algebra and Analytic Geometry		1				K1MTR_U01, K1MTR_K01	15	60	2	1,0	T	Z	O	P	PD	Ob.
3.	MAP001142W	Mathematical Analysis 1.1 A	2					K1MTR_W01	30	150	5	3,0	T	E	O		PD	Ob.
4.	MAP001142C	Mathematical Analysis 1.1 A		2				K1MTR_U01	30	90	3	2,0	T	Z	O	P	PD	Ob.
5.	MAP001156W	Mathematical Analysis 2.1 A	2					K1MTR_W01	30	120	4	3	T	E	O		PD	Ob.
6.	MAP001156C	Mathematical Analysis 2.1 A		2				K1MTR_U01	30	90	3	2	T	Z	O	P	PD	Ob.
7.	MAP003062W	Ordinary Differential Equations	1					K1MTR_W01	15	60	2	1,2	T	Z			PD	Ob.
8.	MAP003062C	Ordinary Differential Equations		1				K1MTR_U01, K1MTR_K01	15	60	2	1,4	T	Z		P	PD	Ob.
9.	MCD033002W	Statistics for Engineers	1					K1MTR_W26	15	60	2	1,2	T	Z			PD	Ob.
10.	MCD033002C	Statistics for Engineers		1				K1MTR_U30	15	60	2	1,4	T	Z		P	PD	Ob.
	Total		**8**	**7**	**0**	**0**	**0**		**225**	**810**	**27**	**17,7**						

4.1.2.2 *Physics* module

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
1.	FZP001058W	Physics 1.2	2					K1MTR_W01, K1MTR_W02, K1MTR_W12, K1MTR_K01, K1MTR_K02, K1MTR_K07, K1MTR_K12	30	120	4	4	T	E	O		PD	Ob.
2.	FZP001058C	Physics 1.2		2				K1MTR_U01, K1MTR_U02, K1MTR_U12, K1MTR_U24, K1MTR_K01, K1MTR_K02, K1MTR_K07, K1MTR_K12	30	60	2	2	T	Z	O	P	PD	Ob.
3.	FZP003002W	Physics 2.8	1					K1MTR_W01, K1MTR_W02, K1MTR_W07, K1MTR_W13, K1MTR_W14, K1MTR_W25	15	60	2	2	T	E	O		PD	Ob.
4.	FZP003002L	Physics 2.8			1			K1MTR_U01, K1MTR_U24, K1MTR_U25, K1MTR_K02, K1MTR_K11	15	60	2	2	T	Z	O	P	PD	Ob.
	Total		**3**	**2**	**1**	**0**	**0**		**90**	**300**	**10**	**10**						

4.1.2.3 *Chemistry* module

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
1.	MCD031001W	Chemisty	2					K1MTR_W07	30	60	2	1,2	T	Z			PD	Ob.
		Total	**2**	**0**	**0**	**0**	**0**		**30**	**60**	**2**	**1,2**						

4.1.2.4 *Informatics* module

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
1.	MCM033005W	Software Engineering and UML	1					K1MTR_W19, K1MTR_W32	15	30	1	0,6	T	Z			PD	Ob.
		Total	**1**	**0**	**0**	**0**	**0**		**15**	**30**	**1**	**0,6**						

4.1.2.5 *Basic Courses* Module

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
1.	MCM032004W	Material Science I	2					K1MTR_W02, K1MTR_W07	30	60	2	1,2	T	Z			PD	Ob.
2.	MCM032004L	Material Science I			1			K1MTR_U07	15	30	1	0,7	T	Z		P	PD	Ob.
3.	MCR033102W	Material Science II	1					K1MTR_W07	15	60	2	1,2	T	E			PD	Ob.
4.	MCR033102L	Material Science II			1			K1MTR_U03	15	30	1	0,7	T	Z		P	PD	Ob.
		Total	**3**	**0**	**2**	**0**	**0**		**75**	**180**	**6**	**3,8**						

Altogether for basic sciences modules:

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes1
lec	cl	lab	pr	sem				
17	**9**	**3**	**0**	**0**	**435**	**1380**	**46**	**33,3**

4.1.3 List of main-field-of-study modules

4.1.3.1 *Obligatory main-field-of-study* modules

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	lec	cl	lab	pr	sem	Field-of-study educational effect symbol	ZZU	CNPS	total	BK classes[1]	Form[2] of course/group of courses	Way[3] of crediting	university-wide[4]	practical[5]	kind[6]	type[7]
1.	MCR031101W	Metrology principles	1					K1MTR_W03	15	30	1	0,6	T	Z			K	Ob.
2.	MCM031005W	Engineering Graphics	1					K1MTR_W06	15	30	1	0,6	T	Z			K	Ob.
3.	MCM031005L	Engineering Graphics			2			K1MTR_U05, K1MTR_U09, K1MTR_U29	30	60	2	1,4	T	Z		P	K	Ob.
4.	MCM031008W	Introduction to Mechatronics	2					K1MTR_W10, K1MTR_W15, K1MTR_W16, K1MTR_W19, K1MTR_W22, K1MTR_W23, K1MTR_W26	30	60	2	1,2	T	Z			K	Ob.
5.	MCR032102W	Fundamentals of Electrotechnics	2					K1MTR_W13	30	90	3	1,8	T	E			K	Ob.
6.	MCR032102C	Fundamentals of Electrotechnics		1				K1MTR_U13	15	30	1	0,7	T	Z		P	K	Ob.
7.	MCM032005W	Mechanics I (Statics)	2					K1MTR_W01, K1MTR_W02, K1MTR_W08	30	90	3	1,8	T	Z			K	Ob.
8.	MCM032005C	Mechanics I (Statics)		2				K1MTR_U08	30	60	2	1,4	T	Z		P	K	Ob.
9.	MCD032001W	Electronic Components and Circuits	2					K1MTR_W14, K1MTR_W29	30	60	2	1,2	T	Z			K	Ob.
10.	MCR033231W	Electrical installations and supply systems	1					K1MTR_W10	15	30	1	0,6	T	Z			K	Ob.
11.	MCR033231C	Electrical installations and supply systems		1				K1MTR_U01, K1MTR_U02, K1MTR_U03, K1MTR_U04, K1MTR_U05, K1MTR_K01	15	30	1	0,7	T	Z		P	K	Ob.
12.	MCM033006W	Mechanics II (Dynamics)	2					K1MTR_W09	30	60	2	1,2	T	E			K	Ob.
13.	MCM033006C	Mechanics II (Dynamics)		1				K1MTR_U01, K1MTR_U02	15	60	2	1,4	T	Z		P	K	Ob.
14.	MCM033007W	Strength of materials, Mechanics of engineering materials	2					K1MTR_W07	30	60	2	1,2	T	Z			K	Ob.
15.	MCM033007C	Strength of materials, Mechanics of engineering materials		2				K1MTR_U01, K1MTR_U02, K1MTR_U09	30	60	2	1,4	T	Z		P	K	Ob.
16.	MCM033008W	Fundamentals of manufacturing	2					K1MTR_W04	30	30	1	0,6	T	Z			K	Ob.
17.	MCD033001L	Electronic Components and Circuits			2			K1MTR_U32, K1MTR_K03	30	60	2	1,4	T	Z		P	K	Ob.
18.	MCR034105W	Electrical metrology	1					K1MTR_W03	15	60	2	1,2	T	Z			K	Ob.
19.	MCR034105L	Electrical metrology			1			K1MTR_U03	15	60	2	1,4	T	Z		P	K	Ob.
20.	MCR034211W	Fundamentals of control engineering	2					K1MTR_W17	30	90	3	1,8	T	E			K	Ob.
21.	MCM034005W	Analysis and Synthesis of Kinematic Systems	2					K1MTR_W09	30	60	2	1,2	T	E			K	Ob.
22.	MCM034005P	Analysis and Synthesis of Kinematic Systems					2	K1MTR_U09	30	60	2	1,4	T	Z		P	K	Ob.
23.	MCM032006W	Metrology of geometrical quantites	1					K1MTR_W03	15	30	1	0,6	T	Z			K	Ob.
24.	MCM032006L	Metrology of geometrical quantites			1			K1MTR_U29, K1MTR_K03, K1MTR_K04, K1MTR_K09	15	30	1	0,7	T	Z		P	K	Ob.
25.	MCM034006L	Fundamentals of manufacturing			3			K1MTR_U03, K1MTR_U11, K1MTR_U29, K1MTR_K01, K1MTR_K05, K1MTR_K08	45	90	3	2,1	T	Z		P	K	Ob.
26.	MCM034007W	Systems for Manufacturing and Assembly	2					K1MTR_W08, K1MTR_W11, K1MTR_W18	30	60	2	1,2	T	E			K	Ob.
27.	MCM034007L	Systems for Manufacturing and Assembly			1			K1MTR_U11, K1MTR_U18, K1MTR_K03, K1MTR_K04, K1MTR_K06	15	30	1	0,7	T	Z		P	K	Ob.

No.	Code	Module	lec	cl	lab	pr	sem	Codes	ZZU	CNPS	ECTS	BK					K	Ob.
28.	MCD034002W	Principles of microprocessor technology	1					K1MTR_W16	15	60	2	1,2	T	Z			K	Ob.
29.	MCD034002L	Principles of microprocessor technology			2			K1MTR_U16	30	60	2	1,4	T	Z		P	K	Ob.
30.	MCR035241W	Safety in electrical engineering	1					K1MTR_W27	15	30	1	0,6	T	Z			K	Ob.
31.	MCR035241L	Safety in electrical engineering			1			K1MTR_U31, K1MTR_K13	15	30	1	0,7	T	Z		P	K	Ob.
32.	MCR035301W	Electrical Drives	2					K1MTR_W10	30	90	3	1,8	T	E			K	Ob.
33.	MCR035301L	Electrical Drives			2			K1MTR_U02, K1MTR_U10	30	60	2	1,4	T	Z		P	K	Ob.
34.	MCR035211L	Fundamentals of control engineering			1			K1MTR_U17, K1MTR_K03	15	30	1	0,7	T	Z		P	K	Ob.
35.	MCR035212W	Elements of control engineering	1					K1MTR_W17	15	60	2	1,2	T	Z			K	Ob.
36.	MCR035212L	Elements of control engineering			1			K1MTR_U17, K1MTR_K01	15	30	1	0,7	T	Z		P	K	Ob.
37.	MCM035003W	Fundamentals of machine elements design	2					K1MTR_W07, K1MTR_W09, K1MTR_W10	30	60	2	1,2	T	Z			K	Ob.
38.	MCM035003P	Fundamentals of machine elements design				2		K1MTR_U05, K1MTR_U09, K1MTR_U23, K1MTR_K02, K1MTR_K04	30	90	3	2,1	T	Z		P	K	Ob.
39.	MCM035004W	Drive systems, hydraulic components and pneumatic components	2					K1MTR_W10, K1MTR_W24	30	60	2	1,2	T	E			K	Ob.
40.	MCM035004L	Drive systems, hydraulic components and pneumatic components			1			K1MTR_U10, K1MTR_U23, K1MTR_K04	15	30	1	0,7	T	Z		P	K	Ob.
41.	MCD035001W	Fundamentals of Electronic Design	1					K1MTR_W31	15	30	1	0,6	T	Z			K	Ob.
42.	MCD035002W	Applications of optoelectronics	1					K1MTR_W30	15	30	1	0,6	T	Z			K	Ob.
43.	MCD035002L	Applications of optoelectronics			2			K1MTR_U33	30	30	1	0,7	T	Z		P	K	Ob.
44.	MCM036004W	Basics of mechatronical design of systems	1					K1MTR_W24	15	60	2	1,2	T	Z			K	Ob.
45.	MCM036004P	Basics of mechatronical design of systems				2		K1MTR_U23, K1MTR_K02	30	60	2	1,4	T	Z		P	K	Ob.
46.	MCM036005W	Industrial robots	2					K1MTR_W09, 1MTR_W10, 1MTR_W15, K1MTR_W23	30	30	1	0,6	T	E			K	Ob.
47.	MCM036005L	Industrial robots			1			K1MTR_U09, K1MTR_U24, K1MTR_U29	15	60	2	1,4	T	Z		P	K	Ob.
48.	MCD036001W	Microsystems (MEMS)	2					K1MTR_W15	30	60	2	1,2	T	E			K	Ob.
49.	MCD036001L	Microsystems (MEMS)			1			K1MTR_U15, K1MTR_K03	15	60	2	1,4	T	Z		P	K	Ob.
50.	MCD036002P	Fundamentals of Electronic Design				2		K1MTR_U34, K1MTR_U32, K1MTR_K03, K1MTR_K04	30	30	1	0,7	T	Z		P	K	Ob.
		Total	**41**	**7**	**22**	**8**	**0**		**1170**	**2610**	**87**	**56,2**						

Altogether (for main-field-of-study modules):

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes1
lec	cl	lab	pr	sem				
41	**7**	**22**	**8**	**0**	**1170**	**2610**	**87**	**56,2**

4.1.4 List of Speciality Modules

4.1.4.1 *Speciality Courses* modules

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
		Total	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**						

Altogether (for Speciality Courses modules):

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes[1]
lec	cl	lab	pr	sem				
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

4.2 List of optional modules
4.2.1 List of general education modules

4.2.1.1 Liberal-managerial subjects modules *(min. ...4... ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
1.	HMH100035BK	Block of humanistic courses	1					K1MTR_W25, K1MTR_K02, K1MTR_K07	15	30	1	0,6	T	Z	O		KO	W
2.	HMH100035BK	Block of humanistic courses	1					K1MTR_W05, K1MTR_K09	15	30	1	0,6	T	Z	O		KO	W
3.	HMH100035BK	Block of humanistic courses					1	K1MTR_U25, K1MTR_K15	15	60	2	1,4	T	Z	O	P	KO	W
		Total	**2**	**0**	**0**	**0**	**1**		**45**	**120**	**4**	**2,6**						

4.2.1.2 *Foreign languages* module *(min. ....5...... ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
1.	JZL100707BK	Foreign Languages B2 or C1		4				K1MTR_U06, K1MTR_K01	60	60	2	1,5	T	Z	O	P	KO	W
2.	JZL100708BK	Foreign Languages B2 or C1		4				K1MTR_U06, K1MTR_K01	60	90	3	2,5	T	Z	O	P	KO	W
		Total	**0**	**8**	**0**	**0**	**0**		**120**	**150**	**5**	**4**						

4.2.1.3 Sporting classes module *(min. ..1.. ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
1.	WFW000000BK	Block of Sports Activities		2				K1MTR_K03, K1MTR_K11	30	0	0	0	T	Z	O	P	KO	W
		Total	**0**	**2**	**0**	**0**	**0**		**30**	**0**	**0**	**0**						

4.2.1.4 *Information technologies* module *(min. .... ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
		Total	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**						

Altogether for general education modules:

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes[1]
lec	cl	lab	pr	sem				
2	10	0	0	1	195	270	9	6,6

4.2.2 List of basic sciences modules

4.2.2.1 *Mathematics* **module** *(min. .... ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
		Total	0	0	0	0	0		0	0	0	0						

4.2.2.2 *Physics* **module** *(min. .... ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
		Total	0	0	0	0	0		0	0	0	0						

4.2.2.3 *Chemistry* **module** *(min. .... ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
		Total	0	0	0	0	0		0	0	0	0						

4.2.2.4 *Informatics* module *(min. 13 ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	lec	cl	lab	pr	sem	Field-of-study educational effect symbol	ZZU	CNPS	total	BK classes[1]	Form[2] of course/group of courses	Way[3] of crediting	university-wide[4]	practical[5]	kind[6]	type[7]
	MCM032101BK	**Optional courses:**	2						30	30	1	0,6	T	Z			PD	W
		Informatics		2					30	30	1	0,7	T	Z		P	PD	W
1.	MCR032251W	Introduction to programming	2					K1MTR_W19										
2.	MCR032251L	Introduction to programming			2			K1MTR_U19										
3.	MCM032102W	Introduction to programming	2					K1MTR_W19										
4.	MCM032102L	Introduction to programming			2			K1MTR_U19, K1MTR_K03										
5.	MCD032101W	Fundamentals of Computer Science	2					K1MTR_W19										
6.	MCD032101L	Fundamentals of Computer Science			2			K1MTR_U19										
	MCM033101BK	**Optional courses:** **Procedural Programming**			2				30	90	3	2,1	T	Z		P	PD	W
7.	MCR033251L	Programming in Matlab			2			K1MTR_U19										
8.	MCM033102L	C Programming			2			K1MTR_U19, K1MTR_K01										
9.	MCD033101L	The Practice of Programming in C			2			K1MTR_U19, K1MTR_K03, K1MTR_K04										
	MCM034101BK	**Optional courses:**	1						15	60	2	1,2	T	Z			PD	W
		Network communication			1				15	30	1	0,7	T	Z		P	PD	W
10.	MCR034104W	Components of computer networks	1					K1MTR_W19, K1MTR_W20										
11.	MCR034104L	Components of computer networks			1			K1MTR_U19, K1MTR_U20										
12.	MCM034103W	Industrial networks	1					K1MTR_W20										
13.	MCM034103L	Industrial networks			1			K1MTR_U20										
14.	MCD034103W	Introduction to Computer Networks	1					K1MTR_W20										
15.	MCD034103L	Introduction to Computer Networks			1			K1MTR_U20										
	MCM034102BK	**Optional courses:** **Object Oriented Programming**			2				30	90	3	2,1	T	Z		P	PD	W
16.	MCR034251L	MATLAB Object Oriented Programming			2			K1MTR_U19, K1MTR_U37, K1MTR_K01										
17.	MCM034104L	C++ Programming			2			K1MTR_U19, K1MTR_U35, K1MTR_K01										
18.	MCD034102L	Object Oriented Programming			2			K1MTR_U19, K1MTR_U35, K1MTR_K01										
	MCM036101BK	**Optional courses:** **CAD 3D-FEM**			2			K1MTR_U19, K1MTR_U35, K1MTR_K01	30	60	2	1,4	T	Z		P	PD	W
19.	MCR036303L	FEM modelling in mechatronics			2			K1MTR_U01, K1MTR_U02, K1MTR_U13 , K1MTR_K03										
20.	MCM036106L	CAD/FEM			2			K1MTR_U22										
21.	MCD036101L	Numerical prototyping of microelectronic structures			2			K1MTR_U22, K1MTR_K04, K1MTR_K05										
		Total	**12**	**0**	**36**	**0**	**0**		**180**	**390**	**13**	**8,8**						

Altogether for basic sciences modules:

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes[1]
lec	cl	lab	pr	sem				
12	0	36	0	0	180	390	13	8,8

4.2.3 List of main-field-of-study modules

4.2.3.1 *Major Courses* module

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	lec	cl	lab	pr	sem	Field-of-study educational effect symbol	ZZU	CNPS	total	BK classes[1]	Form[2] of course/group of courses	Way[3] of crediting	university-wide[4]	practical[5]	kind[6]	type[7]
	MCR035101BK	**Optional courses:**	1						15	30	1	0,6	T	Z			K	W
		Sensing		2					30	30	1	0,7	T	Z		P	K	W
1.	MCR035103W	Sensors – properties and applications	1					K1MTR_W15										
2.	MCR035103L	Sensors – properties and applications			2			K1MTR_U15										
3.	MCM035105W	Sensory w systemacha wytwórczych	1					K1MTR_W03, K1MTR_W15, K1MTR_W16										
4.	MCM035105L	Sensory w systemacha wytwórczych			2			K1MTR_U03, K1MTR_U10, K1MTR_U15										
5.	MCM035106W	Sensors in the machine and vehicle construction	1					K1MTR_W03, K1MTR_W15, K1MTR_W16										
6.	MCM035106L	Sensors in the machine and vehicle construction			2			K1MTR_U03, K1MTR_U10, K1MTR_U15										
7.	MCD035101W	Sensors and actuators	1					K1MTR_W15										
8.	MCD035101L	Sensors and actuators			2			K1MTR_U15										
	MCM035102BK	**Optional courses:**	1						15	30	1	0,6	T	Z			K	W
		Logical Systems		1					15	60	2	1,4	T	Z		P	K	W
9.	MCR035303W	Programming of distributed control systems based on PLC	1					K1MTR_W10, K1MTR_W17, K1MTR_W33										
10.	MCR035303L	Programming of distributed control systems based on PLC			1			K1MTR_W10, K1MTR_W17, K1MTR_W33										
11.	MCM035104W	Programmable Logic Controllers	1					K1MTR_U15, K1MTR_U20, K1MTR_U36										
12.	MCM035104L	Programmable Logic Controllers			1			K1MTR_U16, K1MTR_U38										
13.	MCD035102W	Logic Circuits Modeling	1					K1MTR_U16, K1MTR_U36										
14.	MCD035102L	Logic Circuits Modeling			1			K1MTR_U19, K1MTR_U22										
	MCM036102BK	**Optional courses: Interdisciplinary Team Project**				2			30	90	3	2,1	T	Z		P	K	W
15.	MCR036103P, 6231, 6302	Interdisciplinary Team Project				2		K1MTR_U04, K1MTR_U30, K1MTR_K03, K1MTR_K06										
16.	MCM036107P	Interdisciplinary Team Project				2		K1MTR_U04, K1MTR_U30, K1MTR_K03, K1MTR_K06										
17.	MCD036102P	Interdisciplinary Team Project				2		K1MTR_U04, K1MTR_U30, K1MTR_K03, K1MTR_K06										
	MCM036103BK	**Optional courses:**	1						15	30	1	0,6	T	Z			K	W
		Signal Processing		1					15	60	2	1,4	T	Z		P	K	W
18.	MCR036106W	Digital signal processing	1					K1MTR_W21										
19.	MCR036106L	Digital signal processing			1			K1MTR_U21, K1MTR_U22										
20.	MCM036108W	Signal Processing	1					K1MTR_W16										
21.	MCM036108L	Signal Processing			1			K1MTR_U19, K1MTR_U21										
22.	MCD036103W	Methods of Signal Processing	1					K1MTR_W21										
23.	MCD036103L	Methods of Signal Processing			1			K1MTR_U01, K1MTR_K06										

No.	Course/group of courses code	Name of course/group of courses	lec	cl	lab	pr	sem	Field-of-study educational effect symbol	ZZU	CNPS	total	BK classes	Form	Way	university-wide	practical	kind	type
	MCM036104BK	**Optional courses:**	2						30	60	2	1,2	T	Z			K	W
		Applications of Microsystems			2				30	60	2	1,4	T	Z		P	K	W
24.	MCR036304W	Microsystems in measurements	1					K1MTR_W16										
25.	MCR036304L	Microsystems in measurements			1			K1MTR_U15, K1MTR_U16										
26.	MCR036305W	Microsystems in control	1					K1MTR_W21										
27.	MCR036305L	Microsystems in control			1			K1MTR_U15, K1MTR_U16										
28.	MCM036109W	Mechatronics in Medicine	1					K1MTR_M_W03, K1MTR_W08, K1MTR_W23										
29.	MCM036109L	Mechatronics in Medicine			1			K1MTR_M_W03, K1MTR_W08, K1MTR_W23, K1MTR_W09, K1MTR_W26										
30.	MCM036110W	Mechatronic systems in manufacturing technologies	1					K1MTR_U02, K1MTR_U03, K1MTR_U21, K1MTR_K01, K1MTR_K07										
31.	MCM036110L	Mechatronic systems in manufacturing technologies			1			K1MTR_U03, K1MTR_U11, K1MTR_U15										
32.	MCD036104W	Microsystems in medicine	1					K1MTR_W15										
33.	MCD036104L	Microsystems in medicine			1			K1MTR_U15, K1MTR_K03										
34.	MCD036105W	Automotive microsystems	1					K1MTR_W15										
35.	MCD036105L	Automotive microsystems			1			K1MTR_U15, K1MTR_K03										
		Total	21	0	26	8	0		195	450	15	10						

4.2.3.2 *Degree Profile* module

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	lec	cl	lab	pr	sem	Field-of-study educational effect symbol	ZZU	CNPS	total	BK classes[1]	Form[2] of course/group of courses	Way[3] of crediting	university-wide[4]	practical[5]	kind[6]	type[7]
									Number of hours		Number of ECTS points				Course/group of courses			
Degree Profile: - Mechatronics in Automation and Measurements																		
1.	MCR035302W	Power Electronics	2					K1MTR_MAP_W01	30	60	2	1,2	T	Z			K	W
2.	MCR035302L	Power Electronics			1			K1MTR_MAP_U01	15	30	1	0,7	T	Z		P	K	W
3.	MCR036102W	Active materials	1					K1MTR_MAP_W02, K1MTR_W02	15	30	1	0,6	T	Z			K	W
4.	MCR036102L	Active materials			1			K1MTR_MAP_U02, K1MTR_U02, K1MTR_U03, K1MTR_U22, K1MTR_U24	15	30	1	0,7	T	Z		P	K	W
5.	MCR036211W	System modelling	1					K1MTR_MAP_W05, K1MTR_MAP_W04	15	30	1	0,6	T	Z			K	W
6.	MCR036211L	System modelling			1			K1MTR_MAP_U04, K1MTR_MAP_U05	15	30	1	0,7	T	Z		P	K	W
7.	MCR036301L	Control Systems Prototyping			1			K1MTR_U19	15	30	1	0,7	T	Z		P	K	W
8.	MCR037231W	Building automation	1					K1MTR_MAP_W03, K1MTR_W19, K1MTR_W20, K1MTR_MAP_W06, K1MTR_W22, K1MTR_W27	15	60	2	1,2	T	Z			K	W
9.	MCR037231P	Building automation				2		K1MTR_MAP_W06	30	60	2	1,4	T	Z		P	K	W
10.	MCR037101P	Numerical methods				1		K1MTR_MAP_U06, K1MTR_K06	15	60	2	1,4	T	Z		P	K	W
11.	MCR037102W	Thin-layer technologies	1					K1MTR_W02, K1MTR_W18, K1MTR_MAP_W07	15	60	2	1,2	T	Z			K	W
12.	MCR037102L	Thin-layer technologies			2			K1MTR_U02, K1MTR_U03	30	60	2	1,4	T	Z		P	K	W
13.	MCR037301S MCR037201S MCR037103S	Diploma seminar					2	K1MTR_MAP_U01, K1MTR_MAP_U02, K1MTR_MAP_U03, K1MTR_MAP_U04, K1MTR_MAP_U05, K1MTR_MAP_U06, K1MTR_MAP_U07, K1MTR_MAP_U08, K1MTR_K04, K1MTR_K06	30	60	2	1,4	T	Z		P	K	W

No.	Code	Name					Learning outcomes										
Degree Profile: - Mechatronics in Machine Building and Vehicles																	
14.	MCM035203W	Ecology in industrial manufacturing	1				K1MTR_M_W07	15	30	1	0,6	T	Z			K	W
15.	MCM035204W	Technological designe processes	1				K1MTR_M_W05	15	30	1	0,6	T	Z			K	W
16.	MCM035204P	Technological designe processes			1		K1MTR_W06, K1MTR_W11	15	30	1	0,7	T	Z		P	K	W
17.	MCM036203W	Manufacturing automation	2				K1MTR_M_U03, K1MTR_M_U06	30	60	2	1,2	T	Z			K	W
18.	MCM036203L	Manufacturing automation		1			K1MTR_M_U02	15	30	1	0,7	T	Z		P	K	W
19.	MCM036204W	Design of mechanical assemblies	1				K1MTR_W07, K1MTR_W09, K1MTR_W10	15	30	1	0,6	T	Z			K	W
20.	MCM036204P	Design of mechanical assemblies			1		K1MTR_M_U01, K1MTR_U09, K1MTR_U22, K1MTR_U23, K1MTR_U24, K1MTR_K02, K1MTR_K04	15	30	1	0,7	T	Z		P	K	W
21.	MCM037205W	Monitoring of machines and processes	1				K1MTR_W03, K1MTR_W11, K1MTR_W15, K1MTR_W17, K1MTR_U19, K1MTR_U21, K1MTR_K01, K1MTR_K02, K1MTR_K04, K1MTR_K05, K1MTR_K06, K1MTR_K07, K1MTR_K08, K1MTR_K09	15	60	2	1,2	T	Z			K	W
22.	MCM037205L	Monitoring of machines and processes		1			K1MTR_W03, K1MTR_W11, K1MTR_W15, K1MTR_W17	15	30	1	0,7	T	Z		P	K	W
23.	MCM037206P	Numerical methods			1		K1MTR_U02, K1MTR_U03, K1MTR_U17, K1MTR_U21, K1MTR_U19, K1MTR_K01, K1MTR_K02, K1MTR_K04, K1MTR_K05, K1MTR_K06, K1MTR_K07, K1MTR_K08, K1MTR_K09	15	60	2	1,4	T	Z		P	K	W
24.	MCM037207W	Programing of machine numerical controled	2				K1MTR_M_W06, K1MTR_W11	30	60	2	1,2	T	Z			K	W
25.	MCM037207P	Programing of machine numerical controled			1		K1MTR_M_W04, K1MTR_W11	15	60	2	1,4	T	Z		P	K	W
26.	MCM037208W	SCADA i HMI	1				K1MTR_M_U05, K1MTR_M_U06, K1MTR_U24	15	30	1	0,6	T	Z			K	W
27.	MCM037001S	Diploma seminar				2	K1MTR_U24, K1MTR_K01, K1MTR_K04, K1MTR_K06	30	60	2	1,4	T	Z		P	K	W
Degree Profile: - Mechatronic Systems							K1MTR_U24, K1MTR_K01, K1MTR_K03, K1MTR_K04, K1MTR_K06										
28.	MCD035201W	Electronic Components	2				K1MTR_MM_W01	30	60	2	1,2	T	Z			K	W
29.	MCD035201L	Electronic Components		1			K1MTR_MM_U01	15	30	1	0,7	T	Z		P	K	W
30.	MCD036201W	Photonics	1				K1MTR_MM_W02	15	30	1	0,6	T	Z			K	W
31.	MCD036201L	Photonics		2			K1MTR_MM_U02	30	60	2	1,4	T	Z		P	K	W
32.	MCD036202W	Micro- and Nanoelectronics	2				K1MTR_MM_W01, K1MTR_MM_W03	30	60	2	1,2	T	Z			K	W
33.	MCD037201L	Laboratory on micro- and nanoelectronics		1			K1MTR_MM_U03	15	60	2	1,4	T	Z		P	K	W
34.	MCD037202L	Numerical methods		1			K1MTR_MM_W04, K1MTR_MM_U04	15	60	2	1,4	T	Z		P	K	W
35.	MCD037203W	Packaging of Electronic and Photonics Systems	1				K1MTR_W18	15	60	2	1,2	T	Z			K	W
36.	MCD037203L	Packaging of Electronic and Photonics Systems		1			K1MTR_U18	15	30	1	0,7	T	Z		P	K	W

37.	MCD037204W	Peripheral Devices in Computer Systems	2					K1MTR_MM_W02, K1MTR_MM_W06	30	60	2	1,2	T	Z			K	W
38.	MCD037204L	Peripheral Devices in Computer Systems			1			K1MTR_MM_U02, K1MTR_K03	15	30	1	0,7	T	Z		P	K	W
39.	MCD037001S	Diploma seminar					2	K1MTR_MM_W05, K1MTR_MM_U01, K1MTR_MM_U02, K1MTR_MM_U03, K1MTR_MM_U04, K1MTR_MM_U05, K1MTR_MM_U06, K1MTR_U02, K1MTR_U03, K1MTR_U04, K1MTR_U05, K1MTR_U06, K1MTR_U07, K1MTR_U08, K1MTR_U09, K1MTR_U10, K1MTR_U11, K1MTR_U12, K1MTR_U13, K1MTR_U14, K1MTR_U15, K1MTR_U16, K1MTR_U17, K1MTR_U18, K1MTR_U20, K1MTR_U21, K1MTR_U22, K1MTR_U23, K1MTR_U24, K1MTR_U25, K1MTR_U26, K1MTR_U27, K1MTR_U28, K1MTR_U29, K1MTR_U30, K1MTR_U31, K1MTR_U32, K1MTR_U33, K1MTR_K03	30	60	2	1,4	T	Z		P	K	W
		Total	**23**	**0**	**15**	**7**	**6**		**765**	**1800**	**60**	**39,3**						

4.2.3.3 *Training* module

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
	MCR030001BK	**Training**							0	120	4	4	T	Z		P	K	W
obszar dyplomowania: Mechatronics in Automation and Measurements																		
1.	MCR037001Q	Practice						K1MTR_U29										
obszar dyplomowania: Mechatronics in Machine Building and Vehicles																		
2.	MCM030001Q	Practice						K1MTR_U29										
Degree Profile: Mechatronic Systems																		
3.	MCD030001Q	Practice						K1MTR_U29										
		Total	**0**	**0**	**0**	**0**	**0**		**0**	**120**	**4**	**4**						

4.2.3.4 *Diploma dissertation* **module**

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
	MCR037002BK	**Diploma thesis**				**2**			30	360	12	12	T	Z		P	K	W
Degree Profile: Mechatronics in Automation and Measurements																		
1.	MCR037100D MCR037200D MCR037300D	Diploma thesis				2		K1MTR_U24, K1MTR_K01, K1MTR_K04, K1MTR_K06										
Degree Profile: Mechatronics in Machine Building and Vehicles																		
2.	MCM037002D	Diploma thesis				2		K1MTR_U24, K1MTR_K01, K1MTR_K04, K1MTR_K06										
Degree Profile: Mechatronic Systems																		
3.	MCD037002D	Diploma thesis				2		K1MTR_MM_U01, K1MTR_MM_U02, K1MTR_MM_U03, K1MTR_MM_U04, K1MTR_MM_U05, K1MTR_MM_U06, K1MTR_U01, K1MTR_U02, K1MTR_U03, K1MTR_U04, K1MTR_U05, K1MTR_U06, K1MTR_U07, K1MTR_U08, K1MTR_U09, K1MTR_U10, K1MTR_U11, K1MTR_U12, K1MTR_U13, K1MTR_U14, K1MTR_U15, K1MTR_U16, K1MTR_U17, K1MTR_U18, K1MTR_U19, K1MTR_U20, K1MTR_U21, K1MTR_U22, K1MTR_U23, K1MTR_U24, K1MTR_U25, K1MTR_U26, K1MTR_U27, K1MTR_U28, K1MTR_U29, K1MTR_U30, K1MTR_U31, K1MTR_U32, K1MTR_U33, K1MTR_K03, K1MTR_K10										
		Total	**0**	**0**	**0**	**2**	**0**		**30**	**360**	**12**	**12**						

Altogether for main-field-of-study modules:

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes[1]
lec	cl	lab	pr	sem				
44	**0**	**41**	**17**	**6**	**990**	**2730**	**91**	**65,3**

4.2.4 List of specialization modules

4.2.4.1 *Specialization subjects (e.g. whole specialization)* **modules** *(min. .... ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
Total			**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**						

4.2.4.2 *………………(e.g. diploma profile)* **module** *(min. .... ECTS points):*

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form[2] of course/group of courses	Way[3] of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes[1]			university-wide[4]	practical[5]	kind[6]	type[7]
Total			**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**						

Altogether for specialization modules:

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes[1]
lec	cl	lab	pr	sem				
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

4.3 Training module (Faculty Council resolution on principles of crediting training – attachment no. …)

Name of training			
Number of ECTS points	**Number of ECTS points for BK classes[1]**	**Training crediting mode**	**Code**
4	4	report	MCR037001Q (W05) MCM037003Q (W10) MCD030002Q (W12)
Training duration	**Training objective**		
4 week	*The aim of the work placement is for the student to gain industrial experience, familiarize herself/himself with the basic technical and technological equipment and with the work of the plant's technical supervisors, and in particular to:* *• broaden the knowledge gained in her/his studies and develop the skills of using it,* *• familiarize herself/himself with the peculiarities of the professional environment,* *• develop specific professional skills directly connected with the work placement venue,* *• hone the skills of effective communication,* *• familiarize herself/himself with the principles of work organization and division of competences, the procedures, the work planning process and the control,* *• improve her/his skills of organizing her/his own work and teamwork and effectively managing time as well as develop conscientiousness and responsibility for the entrusted tasks,* *• hone the skill of using a foreign language in professional situations.* *Through the free choice of the work placement venue, e.g. through her/his choice of the "firm", the student can pursue her/his professional interests. This may help her/him to formulate the topic of her/his engineering diploma work. The student's first professional work often takes place in the work placement venue.*		

4.4 Diploma dissertation module

Type of diploma dissertation	~~Licencjat~~ / inżynier / ~~magister~~ / ~~magister inżynier~~	
Number of diploma dissertation semesters	**Number of ECTS points**	**Code**
1	12	**MCR037100, 7200, 7300 MCM037002, MCD037002**
Character of diploma dissertation		
The engineering diploma dissertation has a character useful for engineering practice. Its subject is, in particular, a solution of a problem relating to: design, a measurement experiment, the development of a computer program and an analysis of a part or the totality of processes having a technical, organizational-technical and economic-technical character. The dissertation has no solely descriptive character, and clearly includes a part being the student's own contribution.		
Number of BK[1] ECTS points	**12**	

5. Ways of verifying assumed educational effects

Type of classes	Ways of verifying assumed educational effects
lecture	*examination, semi final wrtitten test, short test, oral answer, presence, test, written test*
class	*semi final wrtitten test, short test, oral answer, activity in problem discussions, test, report, activity*
laboratory	*short test, oral answer, activity in problem discussions, pass, activity, average lab. assessment, report, paper presentation,*
project	*semi final wrtitten test, short test, oral answer, activity in problem discussions, pass, activity, project preparation, report, project defense, presence, presentation,*
seminar	*oral answer, activity in problem discussions, activity, presentation, problem work out*
training	*report from training*
diploma dissertation	*prepared diploma dissertation*

6. Total number of ECTS points, which student has to obtain from classes requiring direct academic teacher-student contact (enter total of ECTS points for courses/groups of courses denoted with code BK[1])

188,7	ECTS

7. Total number of ECTS points, which student has to obtain from basic sciences classes

Number of ECTS points for obligatory subjects	46
Number of ECTS points for optional subjects	0
Total number of ECTS points	46

8. Total number of ECTS points, which student has to obtain from practical classes, including laboratory classes (enter total number of ECTS points for courses/group of courses denoted with code P)

Number of ECTS points for obligatory subjects	59
Number of ECTS points for optional subjects	MiAaM - 56 MiMBaV - 54 MM - 55
Total number of ECTS points	MiAaM - 115 MiMBaV - 113 MM - 114

9. Minimum number of ECTS points, which student has to obtain doing education modules offered as part of university-wide classes or other main field of study (enter number of ECTS points for courses/groups of courses denoted with code OG)

39	ECTS

10. Total number of ECTS points, which student may obtain doing optional modules (min. 30% of total number of ECTS points)

74	ECTS

11. Range of diploma dissertation

The diploma examination problems, divided into thematic blocks, are available on the Faculty website.

12. Requirements concerning deadlines for crediting courses/groups of courses for all courses in particular modules

No.	Course code	Name of course	Crediting by deadline of... (number of semester)

13. Plan of studies (attachment no. ……)