Casimir Pulaski Radom University

STUDY PLAN No. .....

Field of study: **Mechanical Engineering**

Educational level: *first- cycle studies*
Qualification level (PRK): *6*
Education profile: *general academic*
Science discipline: *Engineering Mechanics - 100%*
Code ISCED: *0715*
Mode of study: *part-time study*
Professional title awarded to graduates: *engineer*

No.	Subject name	Examination after sem.	Credit after sem.	Hours: Sum (Didactic classes)	Hours including: Form of didactic classes L	C	Lab	P	S	OTHER ZBN	ECTS	I year, I semester L	C	Lab	P	S	ECTS	I year, II semester L	C	Lab	P	S	ECTS
	A. Group of basic course																						
	A. Group of basic course																						
1	Chemistry		1	20	8	0	12	0	0	55	3	8		12			3						
2	Mathematics	2	1.2	90	30	60	0	0	0	210	12	15	30				6	15	30				6
3	Engineering mechanics	2	1.2	50	25	25	0	0	0	137.5	7.5	15	15				5	10	10				2.5
4	Physics		2.3	56	24	16	16	0	0	144	8							24	16				5
5	Fluid mechanics		3	32	8	12	12	0	0	43	3												
6	Strength of materials	3	3	45	15	15	15	0	0	105	6												
7	Basics of Technical Thermodynamics	4	4	36	8	12	16	0	0	89	5												
	Sum of group A			**329**	**118**	**140**	**71**	**0**	**0**	**783.5**	**44.5**	**38**	**45**	**12**	**0**	**0**	**14**	**49**	**56**	**0**	**0**	**0**	**13.5**
	B. Group of obligatory course core subject																						
	B_ Group of obligatory course core subject																						
1	Environmental management and ecology		1	8	8	0	0	0	0	17	1	8					1						
2	Work safety and ergonomics		1	8	8	0	0	0	0	17	1	8					1						
3	Theory of machines		1	16	16	0	0	0	0	34	2	16					2						
4	Fundamentals of engineering	1	1	23	8	0	15	0	0	77	4	8		15			4						
5	Materials science		1	25	10	0	15	0	0	50	3	10		15			3						
6	Design record		1.2	48	16	0	32	0	0	127	7	8		16			3	8		16			4
7	Metrology and measurement systems		2	28	16	0	12	0	0	47	3							16		12			3
8	Programming and numerical methods		2.3	32	0	16	0	16	0	68	4								8		8		2
9	Manufacturing Engineering		2,3,4	72	24	0	48	0	0	153	9							8		16			3
10	Electrical engineering and electronics	3	3	32	16	0	16	0	0	68	4												
11	Basics of machine design	4	3.4	74	32	12	0	30	0	201	11												
12	Machine dynamics		4	23	8	0	15	0	0	77	4												
13	Mechatronics and Automatics		4	32	16	0	16	0	0	93	5												
14	Mechanics of structures	4	4	40	16	16	8	0	0	110	6												
15	Technology processes		5	24	8	0	0	16	0	51	3												
16	Robotics	5	5	23	8	0	15	0	0	77	4												
17	Artificial Intelligence		5	20	8	0	12	0	0	30	2												
18	Industrial Controllers PLC		5	20	8	0	12	0	0	30	2												
19	Simulations in Mechanics FEM+CFD+FSI		5,6,7	72	24	0	48	0	0	153	9												
20	Technical diagnostics		6	32	8	0	24	0	0	93	5												
21	Robot programming		7	23	8	0	15	0	0	77	4												
	Sum of group B			**675**	**266**	**44**	**303**	**62**	**0**	**1650**	**93**	**58**	**0**	**46**	**0**	**0**	**14**	**32**	**8**	**44**	**8**	**0**	**12**
	C. Group of courses to choose from																						
	C . Group of courses to choose from																						
1	3D Scanning / Reverse Engineering		5	24	8	0	16	0	0	51	3												
2	ERP systems / Manufacturing Execution System		5	24	8	0	16	0	0	76	4												
3	Signal measurement and analysis / DAQ systems		5	24	0	0	24	0	0	51	3												
4	Computer aided design / Software packages in mechanics	6	5.6	56	16	0	40	0	0	169	9												
5	Senior project		5.6	32	0	0	0	0	32	68	4												
6	Programming of CNC machines / CAM systems		6	32	8	0	24	0	0	93	5												
7	Robotization and automation / Digital models in industry		6	32	8	0	24	0	0	93	5												
8	Internal combustion engines / Machine maintenance		6	32	8	0	24	0	0	93	5												

No.	Subject name	II year, III semester L	C	Lab	P	S	ECTS	II year, IV semester L	C	Lab	P	S	ECTS	III year, V semester L	C	Lab	P	S	ECTS	III year, VI semester L	C	Lab	P	S	ECTS	IV year, VII semester L	C	Lab	P	S	ECTS
	A. Group of basic course																														
	A. Group of basic course																														
1	Chemistry																														
2	Mathematics																														
3	Engineering mechanics																														
4	Physics			16			3																								
5	Fluid mechanics	8	12	12			3																								
6	Strength of materials	15	15	15			6																								
7	Basics of Technical Thermodynamics							8	12	16			5																		
	Sum of group A	**23**	**27**	**43**	**0**	**0**	**12**	**8**	**12**	**16**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	B. Group of obligatory course core subject																														
	B_ Group of obligatory course core subject																														
1	Environmental management and ecology																														
2	Work safety and ergonomics																														
3	Theory of machines																														
4	Fundamentals of engineering																														
5	Materials science																														
6	Design record																														
7	Metrology and measurement systems																														
8	Programming and numerical methods		8		8		2																								
9	Manufacturing Engineering	8		16			3	8		16			3																		
10	Electrical engineering and electronics	16		16			4																								
11	Basics of machine design	16	12		15		6	16			15		5																		
12	Machine dynamics							8		15			4																		
13	Mechatronics and Automatics							16		16			5																		
14	Mechanics of structures							16	16	8			6																		
15	Technology processes													8			16		3												
16	Robotics													8		15			4												
17	Artificial Intelligence													8		12			2												
18	Industrial Controllers PLC													8		12			2												
19	Simulations in Mechanics FEM+CFD+FSI													8		16			3	8		16			3	8		16			3
20	Technical diagnostics																			8		24			5						
21	Robot programming																									8		15			4
	Sum of group B	**40**	**20**	**32**	**23**	**0**	**15**	**64**	**16**	**55**	**15**	**0**	**23**	**40**	**0**	**55**	**16**	**0**	**14**	**16**	**0**	**40**	**0**	**0**	**8**	**16**	**0**	**31**	**0**	**0**	**7**
	C. Group of courses to choose from																														
	C . Group of courses to choose from																														
1	3D Scanning / Reverse Engineering													8		16			3												
2	ERP systems / Manufacturing Execution System													8		16			4												
3	Signal measurement and analysis / DAQ systems															24			3												
4	Computer aided design / Software packages in mechanics													8		16			4	8		24			5						
5	Senior project																	16	2					16	2						
6	Programming of CNC machines / CAM systems																			8		24			5						
7	Robotization and automation / Digital models in industry																			8		24			5						
8	Internal combustion engines / Machine maintenance																			8		24			5						

9	Optimization of construction / Application of CAD/CAE systems	7	7	23	8	0	15	0	0	77	4
	Sum of group C			279	64	0	183	0	32	771	42
	D. Group of subjects in the humanities and social sciences										
	D_1. Group of subjects in the humanities and social sciences - obligatory										
1	The legal and economical aspects of entrepreneurship		2	20	20	0	0	0	0	55	3
	D_2. Group of subjects in the humanities and social sciences - to choose										
1	Subjects in the humanities or social sciences		3	15	15	0	0	0	0	35	2
	Sum of group D			35	35	0			0	90	5
	E. Group of general courses										
	E_1. Group of general courses - obligatory										
1	Protection of industrial property and copyright		1	6	6	0	0	0	0	6.5	0.5
	E_2. Group of general courses - to choose										
1	Foreign language		1,2,3,4	60	0	60	0	0	0	90	6
2	Physical education		1.2	0	0	0	0	0	0		0
	Sum of group E			66	6	60			0	96.5	6.5
	F. Apprenticeship										
	Sum of group F			0	0	0	0	0	0	0	0
	G. Camps / Outdoors										
	Sum of group G			0	0	0	0	0	0	0	0
	H. Group of courese: Preparation of the diploma thesis and preparation for the diploma exam										
1	Diploma seminar		7	20	0	0	0	0	20	80	4
2	Preparation and submission of the diploma thesis		7	0	0	0	0	0	0	375	15
	Sum of group H			20	0	0	0	0	20	455	19
	SUM A+B+C+D+E+F (ECTS)+G+H			1404	489	244	557	62	52	3846	210

Optimization of construction / Application of CAD/CAE systems																								
Sum of group C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
The legal and economical aspects of entrepreneurship							20					3												
Subjects in the humanities or social sciences													15					2						
Sum of group D	0	0			0	0	20	0			0	3	15	0			0	2	0	0			0	0
Protection of industrial property and copyright	6					0.5																		
Foreign language		15				1.5		15				1.5		15				1.5		15				1.5
Physical education		0				0		0				0												
Sum of group E	6	15			0	2	0	15			0	1.5	0	15			0	1.5	0	15			0	1.5
Sum of group F	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0			0	0
Sum of group G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diploma seminar																								
Preparation and submission of the diploma thesis																								
Sum of group H	0	0			0	0	0	0			0	0	0	0			0	0	0	0			0	0
SUM A+B+C+D+E+F (ECTS)+G+H	102	60	58	0	0	30	101	79	44	8	0	30	78	62	75	23	0	30.5	72	43	71	15	0	29.5
The number of hours of classes per semester	220						232						238						201					
The number of exams in semester	1						2						2						3					
The number of ECTS credits in semester	30						30						30.5						29.5					

Optimization of construction / Application of CAD/CAE systems													8		15			4
Sum of group C	24	0	72	0	16	16	32	0	96	0	16	22	8	0	15	0	0	4
The legal and economical aspects of entrepreneurship																		
Subjects in the humanities or social sciences																		
Sum of group D	0	0			0	0	0	0			0	0	0	0			0	0
Protection of industrial property and copyright																		
Foreign language																		
Physical education																		
Sum of group E	0	0			0	0	0	0			0	0	0	0			0	0
Sum of group F	0	0			0	0	0	0			0	0	0	0			0	0
Sum of group G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diploma seminar																	20	4
Preparation and submission of the diploma thesis																		15
Sum of group H	0	0			0	0	0	0			0	0	0	0			20	19
SUM A+B+C+D+E+F (ECTS)+G+H	64	0	127	16	16	30	48	0	136	0	16	30	24	0	46	0	20	30
The number of hours of classes per semester	223						200						90					
The number of exams in semester	1						1						1					
The number of ECTS credits in semester	30						30						30					

description:

L - lecture, C - classes, Lab - laboratory, P - project, S - seminar

	Other compulsory classes	semester	hours
1	Occupational health and safety training	1	4
2	Library training	1	2

Semester	Deficit of ECTS credits allowed after individual semesters:
1	12
2	12
3	12
4	12
5	12
6	6
7	0