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: *full-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	30	15	0	15	0	0	45	3	15		15			3						
2	Mathematics	2	1,2	150	60	90	0	0	0	150	12	30	45				6	30	45				6
3	Engineering mechanics	2	1,2	90	45	45	0	0	0	97,5	7,5	30	30				5	15	15				2,5
4	Physics		2,3	90	30	30	30	0	0	110	8							30	30				5
5	Fluid mechanics		3	45	15	15	15	0	0	30	3												
6	Strength of materials	3	3	90	30	30	30	0	0	60	6												
7	Basics of Technical Thermodynamics	4	4	60	15	15	30	0	0	65	5												
	Sum of group A			**555**	**210**	**225**	**120**	**0**	**0**	**557,5**	**44,5**	**75**	**75**	**15**	**0**	**0**	**14**	**75**	**90**	**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	15	15	0	0	0	0	10	1	15					1						
2	Work safety and ergonomics		1	15	15	0	0	0	0	10	1	15					1						
3	Theory of machines		1	30	30	0	0	0	0	20	2	30					2						
4	Fundamentals of engineering	1	1	45	15	0	30	0	0	55	4	15		30			4						
5	Materials science		1	45	15	0	30	0	0	30	3	15		30			3						
6	Design record		1,2	105	30	0	75	0	0	70	7	15		30			3	15		45			4
7	Metrology and measurement systems		2	45	30	0	15	0	0	30	3							30		15			3
8	Programming and numerical methods		2,3	60	0	30	0	30	0	40	4								15		15		2
9	Manufacturing Engineering		2,3,4	135	45	0	90	0	0	90	9							15		30			3
10	Electrical engineering and electronics	3	3	60	30	0	30	0	0	40	4												
11	Basics of machine design	4	3,4	120	30	30	0	60	0	155	11												
12	Machine dynamics		4	45	15	0	30	0	0	55	4												
13	Mechatronics and Automatics		4	60	30	0	30	0	0	65	5												
14	Mechanics of structures	4	4	75	30	30	15	0	0	75	6												
15	Technology processes		5	45	15	0	0	30	0	30	3												
16	Robotics	5	5	45	15	0	30	0	0	55	4												
17	Artificial Intelligence		5	30	15	0	15	0	0	20	2												
18	Industrial Controllers PLC		5	30	15	0	15	0	0	20	2												
19	Simulations in Mechanics FEM+CFD+FSI		5,6,7	135	45	0	90	0	0	90	9												
20	Technical diagnostics		6	60	15	0	45	0	0	65	5												
21	Robot programming		7	45	15	0	30	0	0	55	4												
	Sum of group B			**1245**	**465**	**90**	**570**	**120**	**0**	**1080**	**93**	**105**	**0**	**90**	**0**	**0**	**14**	**60**	**15**	**90**	**15**	**0**	**12**
	C. Group of courses to choose from																						
	C . Group of courses to choose from																						
1	3D Scanning / Reverse Engineering		5	45	15	0	30	0	0	30	3												
2	ERP systems / Manufacturing Execution System		5	45	15	0	30	0	0	55	4												
3	Signal measurement and analysis / DAQ systems		5	45	0	0	45	0	0	30	3												
4	Computer aided design / Software packages in mechanics	6	5,6	105	30	0	75	0	0	120	9												
5	Senior project		5,6	60	0	0	0	0	60	40	4												

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			30			3																								
5	Fluid mechanics	15	15	15			3																								
6	Strength of materials	30	30	30			6																								
7	Basics of Technical Thermodynamics							15	15	30			5																		
	Sum of group A	**45**	**45**	**75**	**0**	**0**	**12**	**15**	**15**	**30**	**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		15		15		2																								
9	Manufacturing Engineering	15		30			3	15		30			3																		
10	Electrical engineering and electronics	30		30			4																								
11	Basics of machine design	15	30		30		6	15			30		5																		
12	Machine dynamics							15		30			4																		
13	Mechatronics and Automatics							30		30			5																		
14	Mechanics of structures							30	30	15			6																		
15	Technology processes													15			30		3												
16	Robotics													15		30			4												
17	Artificial Intelligence													15		15			2												
18	Industrial Controllers PLC													15		15			2												
19	Simulations in Mechanics FEM+CFD+FSI													15		30			3	15		30			3	15		30			3
20	Technical diagnostics																			15		45			5						
21	Robot programming																									15		30			4
	Sum of group B	**60**	**45**	**60**	**45**	**0**	**15**	**105**	**30**	**105**	**30**	**0**	**23**	**75**	**0**	**90**	**30**	**0**	**14**	**30**	**0**	**75**	**0**	**0**	**8**	**30**	**0**	**60**	**0**	**0**	**7**
	C. Group of courses to choose from																														
	C . Group of courses to choose from																														
1	3D Scanning / Reverse Engineering													15		30			3												
2	ERP systems / Manufacturing Execution System													15		30			4												
3	Signal measurement and analysis / DAQ systems															45			3												
4	Computer aided design / Software packages in mechanics													15		30			4	15		45			5						
5	Senior project																	30	2					30	2						

6	Programming of CNC machines / CAM systems		6	60	15	0	45	0	0	65	5																															15		45			5						
7	Robotization and automation / Digital models in industry		6	60	15	0	45	0	0	65	5																															15		45			5						
8	Internal combustion engines / Machine maintenance		6	60	15		45			45	5																															15		45			5						
9	Optimization of construction / Application of CAD/CAE systems	7	7	45	15	0	30	0	0	55	4																																					15		30			4
	Sum of group C			525	120	0	345	0	60	505	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	0	135	0	30	16	60	0	180	0	30	22	15	0	30	0	0	4
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	30	30	0	0	0	0	45	3							30					3																														
D_2. Group of subjects in the humanities and social sciences - to choose																																																					
1	Subjects in the humanities or social sciences		3	30	30	0	0	0	0	20	2													30					2																								
	Sum of group D			60	60	0			0	65	5	0	0			0	0	30	0			0	3	30	0			0	2	0	0			0	0	0	0			0	0	0	0			0	0	0	0			0	0
E. Group of general courses																																																					
E_1. Group of general courses - obligatory																																																					
1	Protection of industrial property and copyright		1	10	10	0	0	0	0	2,5	0,5	10					0,5																																				
E_2. Group of general courses - to choose																																																					
1	Foreign language		1,2,3,4	120	0	120	0	0	0	30	6		30				1,5		30				1,5		30				1,5		30				1,5																		
2	Physical education		1,2	60	0	60	0	0	0	0	0		30				0		30				0																														
	Sum of group E			190	10	180			0	32,5	6,5	10	60			0	2	0	60			0	1,5	0	30			0	1,5	0	30			0	1,5	0	0			0	0	0	0			0	0	0	0			0	0
F. Apprenticeship																																																					
	Sum of group F			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0			0	0	0	0			0	0	0	0			0	0	0	0			0	0
G. Camps / Outdoors																																																					
	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	30	0	0	0	0	30	70	4																																									30	4
2	Preparation and submission of the diploma thesis		7	0	0	0	0	0	0	375	15																																										15
	Sum of group H			30	0	0	0	0	30	445	19	0	0			0	0	0	0			0	0	0	0			0	0	0	0			0	0	0	0			0	0	0	0			0	0	0	0			30	19
	SUM A+B+C+D+E+F (ECTS)+G+H			2605	865	495	1035	120	90	2685	210	190	135	105	0	0	30	165	165	90	15	0	30	135	120	135	45	0	30,5	120	75	135	30	0	29,5	120	0	225	30	30	30	90	0	255	0	30	30	45	0	90	0	30	30
The number of hours of classes per semester												430						435						435						360						405						375						165					
The number of exams in semester												1						2						2						3						1						1						1					
The number of ECTS credits in semester												30						30						30,5						29,5						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