



CURRICULUM

2022 - 2026



Academic year: 2022 - 2023

Study year: I

Semester: I

Domain:
Study program:

Mechatronics and Robotics
Robotics (in English Language)

No.	Discipline code	Discipline name	Discipline type	No. ECTS	Hours/week				Total number of hour		Evaluation form	
					C	S	L	P	Asisted activities	Ind.Study		
Compulsory courses (Ob)												
1	UPB.06.F.01.O.001	Linear Algebra, Analytical and Differential Geometry	F	4	2	2			56	44	E	
2	UPB.06.D.01.O.002	Technical Mechanics 1	D	4	2	1			42	58	E	
3	UPB.06.F.01.O.003	Chemistry	F	4	2		1		42	58	E	
4	UPB.06.F.01.O.004	Computer Programming and Programming Languages 1	F	4	1		2		42	58	V	
5	UPB.06.D.01.O.005	Materials Science, Thermal and Thermochemical Treatments	D	4	2		1		42	58	V	
6	UPB.06.F.01.O.006	Technical Drawing and Infographics 1	F	4	1		2		42	58	V	
7	UPB.06.D.01.O.007	Robotics 1	D	4	2		1		42	58	E	
Optional courses (Op)												
8	UPB.06.C.01.A.008a UPB.06.C.01.A.008b	Modern Language 1 - French Modern Language 1 - German	C	2		2			28	22	V	
Statistics:			ECTS/Hours	30	12	5	7	0	336	414	Ex.	Ver.
			Number:		7	3	5	0			4	4
Elective courses (F)												
9	UPB.06.C.01.L.009	Psychology of Education	C	5	2	2			56	69	E	
10	UPB.06.C.01.L.011	Sports 1*	C	2		1			14	36	V	
11	UPB.06.F.01.L.012	Programming of Educational Robotic Systems	F	5	2		2		56	69	V	
TOTAL NUBER OF HOURS		Compulsory courses:		22								
		Optional courses:		2								
		Elective courses:		9								

* A minimum of 2 semesters of physical education will be compulsory during the entire license cycle

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CURRICULUM

2022 - 2026

Academic year: 2022 - 2023

Domain: **Mecatronics and Robotics**
 Study program: **Robotics (in English Language)**

Study year: I
 Semester: II

No.	Discipline code	Discipline name	Discipline type	No. ECTS	Hours/week				Total number of hour		Evaluation form	
					C	S	L	P	Asisted activities	Ind.Study		
Compulsory courses (Ob)												
1	UPB.06.F.02.O.001	Mathematical Analysis	F	4	2	2			56	44	E	
2	UPB.06.F.02.O.002	Physics 1	F	3	2		1		42	33	E	
3	UPB.06.D.02.O.003	Engineering and Technology of Materials 1	D	4	2		2		56	44	E	
4	UPB.06.D.02.O.004	Technical Mechanics 2	D	4	2	1			42	58	E	
5	UPB.06.F.02.O.005	Computer Programming and programming languages 2	F	4	1		2		42	58	V	
6	UPB.06.D.02.O.006	Strength of Materials 1	D	4	2	2			56	44	E	
7	UPB.06.F.02.O.007	Technical Drawing and Infographics 2	F	3	1		2		42	33	V	
8	UPB.06.D.02.O.008	Robotics 2	D	4	2		2		56	44	V	
Optional courses (Op)												
Statistics:			ECTS/Hours Number:	30	14	5	9	0	392	358	Ex.	Ver.
					8	3	5	0			5	3
Elective courses (F)												
9	UPB.06.C.02.L.009	Pedagogy 1	C	5	2	2			56	69	E	
10	UPB.06.C.02.L.010	Sports 2*	C	2		1			14	36	V	
11	UPB.06.C.02.L.011	Volunteering 1	C	3	(14 weeks x 5 h/week=70 hours)				0	75	V	
12	UPB.06.C.02.L.012	Optional Internship Stage 1	C	5	(2-8 weeks x 6 h/week= 60-240h)				0	125	V	
13	UPB.06.C.02.L.013	Modern Language 2 - French	C	2		2			28	22	V	
14	UPB.06.C.02.L.014	Modern Language 2 - German	C	2		2			28	22	V	
TOTAL NUBER OF HOURS		Compulsory courses:			28							
		Optional courses:			0							
		Elective courses:			9							

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CURRICULUM
2022 - 2026



Domain: **Mecatronics and Robotics**
Study program: **Robotics (in English Language)**

Academic year: **2023 - 2024**
Study year: **II**
Semester: **I**

No.	Discipline code	Discipline name	Discipline type	No. ECTS	Hours/week				Total number of hour		Evaluation form		
					C	S	L	P	Asisted activities	Ind.Study			
Compulsory courses (Ob)													
1	UPB.06.F.03.O.001	Numerical Methods	F	4	1		2		42	58	E		
2	UPB.06.D.03.O.002	Strength of Materials 2	D	5	2	1	1		56	69	E		
3	UPB.06.D.03.O.003	Mechanisms and Machine Elements	D	4	2		1	1	56	44	E		
4	UPB.06.D.03.O.004	Engineering and Technology of Materials 2	D	4	2		2		56	44	E		
5	UPB.06.F.03.O.005	Physics 2	F	3	2		1		42	33	V		
6	UPB.06.F.03.O.006	Computer-Aided Graphics	F	3	1		2		42	33	V		
7	UPB.06.S.03.O.007	Databases	S	3	1		2		42	33	E		
8	UPB.06.C.03.O.008	Economics	C	2	1	1			28	22	V		
9	UPB.06.D.03.O.009	Robotics 3	D	2	2		1		42	8	E		
Optional courses (Op)													
Statistics:			ECTS/Hours	30	14	2	12	1	406	344	Ex.	Ver.	
			Number:		9	2	8	1			6	3	
Elective courses (F)													
10	UPB.06.C.03.L.010	Pedagogy 2	C	5	2	2			56	69	E		
11	UPB.06.C.03.L.011	Sports 3	C	2		1			14	36	V		
12	UPB.06.C.03.L.012	Modern Language 3 - French	C	2		2			28	22	V		
13	UPB.06.C.03.L.013	Modern Language 3 - German	C	2		2			28	22	V		
14	UPB.06.S.03.L.014	Teach in robot programming 1	S	5	2		2		56	69	V		
TOTAL NUBER OF HOURS		Compulsory courses:								29			
		Optional courses:								0			
		Elective courses:								13			

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CURRICULUM

2022 - 2026

Academic year: 2023 - 2024

Study year: II

Semester: II

Domain:
Study program:

Mechatronics and Robotics
Robotics (in English Language)

No.	Discipline code	Discipline name	Discipline type	No. ECTS	Hours/week				Total number of hour		Evaluation form		
					C	S	L	P	Asisted activities	Ind.Study			
Compulsory courses (Ob)													
1	UPB.06.F.04.O.001	Probability theory and mathematical statistics	F	3	1		2		42	33	E		
2	UPB.06.S.04.O.002	Standardized Mechanical Components	S	4	2		1	1	56	44	E		
3	UPB.06.D.04.O.003	Tolerances and Dimensional Control	D	3	2		1		42	33	E		
4	UPB.06.D.04.O.004	Driving Systems 1	D	4	2		2		56	44	E		
5	UPB.06.C.04.O.005	Project Management	C	3	1		2		42	33	V		
6	UPB.06.D.04.O.006	Internship 1	D	4	(3 săpt x 30h/săpt = 90ore)				0	100	V		
Optional courses (Op)													
7	UPB.06.D.04.A.007a	Digital electronics	D	5	2		2		56	69	E		
	UPB.06.D.04.A.007b	Power electronics											
8	UPB.06.F.04.A.008a	Computer Programming and programming languages 3	F	4	2		2		56	44	E		
	UPB.06.F.04.A.008b	Applied Informatics											
Statistics:				ECTS/Hours Number:	30	12	0	12	1	350	400	Ex. 6	Ver. 2
Elective courses (F)													
9	UPB.06.C.04.L.009	Didactics of Speciality	C	5	2	2			56	69	E		
10	UPB.06.C.04.L.010	Sports 4	C	2		1			14	36	V		
11	UPB.06.C.04.L.011	Volunteering 2	C	3	(14 weeks x 5 h/week=70 hours)				0	75	V		
12	UPB.06.C.04.L.012	Optional Internship Stage 2	C	5	(2-8 weeks x 6 h/week= 60-240h)				0	125	V		
13	UPB.06.C.04.L.013	Modern Language 4- French	C	2		2			28	22	V		
14	UPB.06.C.04.L.014	Modern Language 4 - German	C	2		2			28	22	V		
15	UPB.06.F.04.L.015	Logical Circuits Programming	F	4	2		2		56	44	V		
TOTAL NUBER OF HOURS		Compulsory courses:		17									
		Optional courses:		8									
		Elective courses:		13									

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CURRICULUM

2022 - 2026

Academic year: 2024 - 2025

Domain:

Mechatronics and Robotics

Study year: III

Study program:

Robotics (in English Language)

Semester: I

No.	Discipline code	Discipline name	Discipline type	No. ECTS	Hours/week				Total number of hour		Evaluation form	
					C	S	L	P	Asisted activities	Ind.Study		
Compulsory courses (Ob)												
1	UPB.06.D.05.O.001	Computer Aided Design 1	D	4	2		2		56	44	V	
2	UPB.06.S.05.O.002	Fundamentals of Industrial Robots Kinematics	S	5	2			2	56	69	E	
3	UPB.06.C.05.O.003	Materials Flow Management	C	4	2		2		56	44	V	
4	UPB.06.D.05.O.004	Sensors and Sensorial Systems	D	4	2		2		56	44	E	
5	UPB.06.S.05.O.005	Industrial Robots Design and Operation 1	S	5	2		2		56	69	E	
6	UPB.06.D.05.O.006	Driving Systems 2	D	4	2		1	1	56	44	E	
Optional courses (Op)												
7	UPB.06.S.05.A.007a	Products Control by Computerized Measuring Systems	S	4	2		2		56	44	V	
	UPB.06.S.05.A.007b	Haptic Systems and Virtual Reality in Robotics										
Statistics:			ECTS/Hours	30	14	0	11	3	392	358	Ex.	Ver.
			Number:		7	0	6	2			4	3
Elective courses (F)												
8	UPB.06.C.05.L.008	Computer Assisted Training	C	2	1	1			28	22	V	
9	UPB.06.C.05.L.009	Pedagogic Practice in compulsory pre-university education (1)	C	3		3			42	33	V	
10	UPB.06.S.05.L.010	Advanced Robots Teach-in Programming	S	5	2		2		56	69	V	
TOTAL NUBER OF HOURS		Compulsory courses:		24								
		Optional courses:		4								
		Elective courses:		9								

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CURRICULUM

2022 - 2026



Academic year: 2024 - 2025

Domain:
Study program:

Mechatronics and Robotics
Robotics (in English Language)

Study year: III
Semester: II

No.	Discipline code	Discipline name	Discipline type	No. ECTS	Hours/week				Total number of hour		Evaluation form		
					C	S	L	P	Asisted activities	Ind.Study			
Compulsory courses (Ob)													
1	UPB.06.D.06.O.001	Computer Aided Design 2	D	3	1		2		42	33	V		
2	UPB.06.C.06.O.002	Industrial Management	C	3	2		1		42	33	E		
3	UPB.06.S.06.O.003	Machines and Production Systems	S	3	2		2		56	19	E		
4	UPB.06.D.06.O.004	Driving Systems 3	D	3	2		2		56	19	V		
5	UPB.06.S.06.O.005	Industrial Robots Design and Operation 2	S	3	2			2	56	19	E		
6	UPB.06.S.06.O.006	Internship 2	S	6	(9 sapt x 30 ore/sapt = 270 ore)				0	150	V		
Optional courses (Op)													
7	UPB.06.D.06.A.007a	Programable Logic Controllers	D	4	2		2		56	44	E		
	UPB.06.D.06.A.007b	Microcontrollers, Microprocessors											
8	UPB.06.D.06.A.008a	Aquisition Systems Interfaces and Virtual Instrumentation	D	2	1		1		28	22	V		
	UPB.06.D.06.A.008b	Aquisition Systems and Complex Data Processing											
9	UPB.06.S.06.A.009a	Computer Aided Design 3a	D	3	2		2		56	19	E		
	UPB.06.S.06.A.009b	Computer Aided Design 3b											
Statistics:				ECTS/Hours	30	14	0	12	2	392	358	Ex.	Ver.
				Number:		8	0	7	1			5	4
Elective courses (F)													
10	UPB.06.C.06.L.010	Pupils Class Management	C	3	1	1			28	47	E		
11	UPB.06.C.06.L.011	Pedagogic Practice in compulsory pre-university education (2)	C	2		3			42	8	V		
12	UPB.06.C.06.L.012	Graduation Exam, Level I	C	5					0	125	V		
13	UPB.06.C.06.L.013	Volunteering 3 (14 weeks x 5 h/week=70 hours)	C	3					0	75	V		
TOTAL NUBER OF HOURS		Compulsory courses:			18								
		Optional courses:			10								
		Elective courses:			5								

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CURRICULUM

2022 - 2026

Academic year: 2025 - 2026

Domain:
Study program:

Mechatronics and Robotics
Robotics (in lb engleza)

Study year: IV
Semester: I

No.	Discipline code	Discipline name	Discipline type	No. ECTS	Hours/week				Total number of hour		Evaluation form	
					C	S	L	P	Asisted activities	Ind.Study		
Compulsory courses (Ob)												
1	UPB.06.S.07.O.001	Industrial Robots Implementing into Production Systems	S	5	2			2	56	69	E	
2	UPB.06.S.07.O.002	Computer Aided Design for Flexible Manufacturing Systems	S	5	2		2		56	69	E	
3	UPB.06.S.07.O.003	Industrial Robot Components Manufacturing Technology	S	4	2			2	56	44	E	
4	UPB.06.D.07.O.004	Computer Aided Design 4	D	4	2		2		56	44	V	
5	UPB.06.S.07.O.005	Computer Aided Engineering 1	S	4	2		2		56	44	E	
Optional courses (Op)												
6	UPB.06.S.07.A.006a	Dynamics of robots	S	4	2		2		56	44	E	
	UPB.06.S.07.A.006b	Industrial Robots Vibrations and Stability										
7	UPB.06.S.07.A.007a	Industrial Robots Textual Programming	S	4	2		2		56	44	E	
	UPB.06.S.07.A.007b	Industrial Robots Control Equipments and Systems										
Statistics:			ECTS/Hours Number:	30	14	0	10	4	392	358	Ex. 6	Ver. 1
Elective courses (F)												
8	UPB.06.S.07.L.008	Advanced Programming of Industrial Controllers		4	2		2		56	44	V	
TOTAL NUBER OF HOURS		Compulsory courses:		20								
		Optional courses:		8								
		Elective courses:		4								

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CURRICULUM

2022 - 2026

Academic year: 2025 - 2026

Domain:
Study program:

Mechatronics and Robotics
Robotics (in lb engleza)

Study year: IV
Semester: II

No.	Discipline code	Discipline name	Discipline type	No. ECTS	Hours/week				Total number of hour		Evaluation form		
					C	S	L	P	Asisted activities	Ind.Study			
Compulsory courses (Ob)													
1	UPB.06.S.08.O.001	Industrial Robots Testing and Validation	S	4	2		2		56	44	V		
2	UPB.06.S.08.O.002	Computer Aided Engineering 2	S	4	2		2		56	44	V		
3	UPB.06.S.08.O.003	Design and Operation of Robotic Manufacturing Systems	S	4	2			2	56	44	V		
4	UPB.06.S.08.O.004	Computer Aided Manufacturing	S	4	2		2		56	44	V		
5	UPB.06.S.08.O.005	Graduate Project Preparing	S	4				4	56	44	V		
6	UPB.06.S.08.O.006	Practice for Graduate Project	S	6	(14 sapt x 4,5 ore/sapt = 60 ore)								
Optional courses (Op)													
7	UPB.06.S.08.A.007a	Fundamentals of Industrial Robots Offline Programing and Simulation	S	4	2		2		56	44	V		
	UPB.06.S.08.A.007b	Rapid Prototyping Techniques											
Statistics:				ECTS/Hours	30	10	0	8	6	336	264	Ex.	Verif.
				Number:		5	0	4	2			0	6
Elective courses (F)													
8	UPB.06.C.08.L.008	Volunteering 4	C	3	(14 weeks x 5 h/week=70 hours)				0	75	V		

Promovarea examenului de diplomă		10	
TOTAL NUBER OF HOURS	Compulsory courses:	20	
	Optional courses:	4	
	Elective courses:	0	

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