BIOMEDICAL ENGINEERING, 1st CYCLE (BACHELOR)
SCOPE OF DIPLOMA: MEDICAL INFORMATICS AND ARTIFICIAL INTELLIGENCE

	Basic courses	Total	W	C	L	P	W	C	L	P	E	ECTS	W	C	L	P	E	ECTS	W	C	L	P	E	ECTS	W	C	L	P	E	ECTS	W	C	L	P	E	ECTS	W	C	L	P	ECTS
1	Physical Education	60		60				30						30																											
2	Foreign Language	120		120				30				2		30				2		30				2		30			E	2													
3	Techniques And Tools For Communication	30	15	15			15	15				3																														
4	Introduction To Entrepreneuship	30	30										30					2																								
5	Intellectual Property Protection	15	15																15					1																		
6	Mathematics For Engineers	30		30				30				3																														
7	Mathematics	150	60	90									30	60			E	7	30	30			E	4																		
8	Informatics And Basics Of Programming	30	10		20		10		20		E	3																														
9	Engineering Graphics	30			30				30			3																														
10	Fundamentals Of Biomedical Engineering	105	35		70		35		70		E	11																														
11	Physics	105	30	60	15									30				3	15	30				4	15		15			3												
12	Chemistry	25	10		15		10		15			3																														
13	Introduction to Anatomy and Physiology	20		20																20				2																		
14	Biomedical Data	60			60										60		E	5																								
15	Engineering Technologies In Medicine And Sports	60	30		30								30		30		E	5																								
16	Iintroduction To Problem Based Learning	45				45										45		6																								
17	Elective Course	150	150										30					2	30					2	30					2	30					2					
18	Practice																																				4					
19	Bachelor Project	45				45																																		45	15
	MEDICAL INFORMATICS AND ARTIFICIAL INTELLIGENCE	1110	385	395	240	90	70	105	135			28	120	150	90	45		32	90	110				15	45	30	15			7	30					2	30					6				45	15
M1	**Fundamentals of Human Sciences**																																									
1	Introduction to Medical Sciences	15	15																15					1																		
2	Radiological Anatomy	15	15																						15					1												
M2	**Informatics**																																									
3	Computer Programming	60	30		30														30		30		E	5																		
4	Algorithms and Data Structures	30	15		15														15		15			3																		
5	Numerical Methods	60	30		30																				30		30		E	5												
6	Object-Oriented Programming	75	15		30	30																			15		30			3						30		2				
7	Computer-Aided Calculations	60			30	30																					30			2				30		2					
8	Databases and Medical Data Archiving	45	15		30																										15		30			3						
9	Computer Networks and Communication in Medicine	60	15		30	15																															15		30	15		4				
10	Design of Applications with Graphical User Interface	90	30		30	30																																			30		30	30	4
11	Graphical Programming	45	15		15	15																																			15		15	15	3
12	Computer Graphics	30	15		15																																				15		15		2
M3	**Biomedical Data Processing**																																									
13	Statisitics in Data Analysis	30	15		15														15		15			2																		
14	Biomedical Data Acquisition	30				30																30		2																		
15	Medical Imaging Techniques	60	30		15	15																			30		15	15	E	5												
16	Medical Signal Processing	30	15		15																				15		15			2												
17	Medical Image Analysis	90	15		30	45																									15		30	15	E	5				30		2				
18	Data Mining	75	15		30	30																									15		30			3				30		2				
19	Bioimage Informatics	60	15		15	30																															15		15	30		3				
M4	Artificial Intelligence																																									
20	Introduction to Artificial Intelligence	30	15		15																				15		15			2												
21	Machine Learning	60	15		15	30																									15		15	30	E	5									
22	Text Mining	60	15		15	30																									15		15	30		5									
23	Deep Learning	60	15		15	30																															15		15	30	E	4				
24	Multimodal data analysis	60	15		15	30																															15		15	30	E	4				
M5	Medical Equipment																																									
25	Circuit Theory	30	15		15														15		15		E	2																		
26	Introduction to Electronics	45	30		15																				30		15			3												
27	Embedded Systems	45	15		30																										15		30			3						
28	Electronic Medical Equipment	45	30			15																															30			15		3				
29	Reliability of Biomedical Systems	30	15		15																																				15		15		2
30	Artificial Organs	30	15		15																																				15		15		2
M6	Other courses																																									
31	Scientific Text Typesetting	30	15		15																										15		15			2						
32	Foreign Language in Biomedical Engineering	30		30																																					30			2
		1515	525	30	555	405													90		75	30		15	150		150	15		23	105		165	105		28	90		75	210		24	90	30	90	45	15
	Total	2625	910	425	795	495	70	105	135			28	120	150	90	45		32	180	110	75	30		30	195	30	165	15		30	135		165	105		30	120		75	210		30	90	30	90	90	30
		Total/Hours per week							310			21			405			27			395			26			405			27			405			27			405			27			300			20

Programme valid from the academic year: 2025/2026