BIOMEDICAL ENGINEERING, 1st CYCLE (BACHELOR)
SCOPE OF DIPLOMA: BIOMATERIALS AND TECHNOLOGIES FOR MEDICINE

		Hours						I							II							III							IV							V							VI							VII						
	Basic courses	**Total**	**W**	**C**	**L**	**P**	**S**	**W**	**C**	**L**	**P**	**S**	**E**	**ECTS**	**W**	**C**	**L**	**P**	**S**	**E**	**ECTS**	**W**	**C**	**L**	**P**	**S**	**E**	**ECTS**	**W**	**C**	**L**	**P**	**S**	**E**	**ECTS**	**W**	**C**	**L**	**P**	**S**	**E**	**ECTS**	**W**	**C**	**L**	**P**	**S**	**E**	**ECTS**	**W**	**C**	**L**	**P**	**S**	**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				3																																						
9	Engineering Graphics	**30**			**30**					30				3																																						
10	Fundamentals Of Biomedical Engineering module I	**60**	**20**		**40**			20		40			E	6																																						
11	Fundamentals Of Biomedical Engineering module II	**45**	**15**		**30**			15		30			E	5																																						
12	Physics	**105**	**30**	**60**	**15**											30					3	15	30					4	15		15				3																		
13	Chemistry	**25**	**10**		**15**			10		15				3																																						
14	Introduction to Anatomy and Physiology	**20**	**20**																			20						1																								
15	Biomedical Data	**60**			**60**												60			E	5																														
16	Engineering Technologies In Medicine And Sports	**60**	**30**		**30**										30		30			E	5																														
17	Iintroduction To Problem Based Learning	**45**				**45**												45			6																														
18	Elective Course UBZO	**150**	**150**												30						2	30						2	30						2	30						2	30						2						
19	Practice																																																		
20	Bachelor Project	**45**				**45**																																													
	BIOMATERIALS AND TECHNOLOGIES FOR MEDICINE	**1110**	**405**	**375**	**240**	**90**		**70**	**105**	**135**				**28**	**120**	**150**	**90**	**45**			**32**	**110**	**90**					**14**	**45**	**30**	**15**				**7**	**30**						**2**	**30**						**6**				**45**		**15**
1	Basics of mechanics and strength of materials	**45**	**15**		**15**	**15**																15		15	15		E	4																								
2	Numerical methods in practice	**30**			**30**																										30				2																
3	Basics of biomaterials science	**45**	**15**		**30**																	15		30			E	4																								
4	Biomaterials and materials for medicine	**105**	**45**		**60**																	15		15				2	30		45			E	6																
5	Biochemistry	**30**	**10**		**20**																	10		20				3																								
6	Designing of medical devices	**150**	**30**	**90**	**30**																								15	90				E	8	15		30				4										
7	Basics of manufacturing methods	**45**	**15**		**15**	**15**																							15		15	15			3																
8	Methods of testing materials for medicine	**60**	**30**		**30**																								30		30				4																
9	Modern manufacturing technologies	**105**	**15**		**30**	**45**	**15**																													15		30	45	15	E	9										
10	Implants and implantation systems	**60**	**30**		**15**	**15**																																				30		15	15		E	4					
11	Surgical and treatment instruments	**65**	**30**		**15**	**15**	**5**																																				30		15	15	5		4					
12	Hospital and rehabilitation equipment	**45**	**15**			**30**																																				15			30			3					
13	Physical methods of tissue stimulation	**45**	**15**		**15**		**15**																																										15		15		15	2
14	Medical imaging	**30**	**15**	**15**																																													15	15				2
15	Medical device certification issues	**60**	**30**			**30**																																											30			30		3
16	Medical statistics	**30**		**30**																																													30				2
17	Sterilization of medical devices	**60**	**30**		**15**	**15**																																											30		15	15		3
18	Biomechanics of Sports Injuries	**45**	**15**			**30**																																				15			30			2					
19	Certification of medical devices	**45**	**15**			**30**																																				15			30			2					
20	Systemy CAS	**90**	**15**		**75**																	15		30				3												45						4					
21	PBL I	**125**				**125**																																						30						2					
22	PBL II	**80**				**80**																																											50			3			3
23	Basics of shaping the properties of materials for medicine	**60**	**30**		**30**																													30		30			E	5												
24	Surface engineering of medical devices	**60**	**30**		**30**																																					30		30			E	4					
		1515	**445**	**135**	**455**	**445**																**70**		**110**	**15**			**16**	**90**	**90**	**120**	**15**			**23**	**90**		**135**	**135**	**15**		**28**	**105**		**60**	**205**	**5**		**24**	**90**	**45**	**30**	**75**	**15**	**15**
	Total	**2625**	**850**	**510**	**695**	**535**		**70**	**105**	**135**				**28**	**120**	**150**	**90**	**45**			**32**	**180**	**90**	**110**	**15**			**30**	**135**	**120**	**135**	**15**			**30**	**120**		**135**	**135**	**15**		**30**	**135**		**60**	**205**	**5**		**30**	**90**	**45**	**30**	**120**	**15**	**30**
		Tatal/Hours per week						**310**						**21**	**405**						**27**	**395**						**26**	**405**						**27**	**405**						**26**	**405**						**27**	**300**					**19**

Programme valid from the academic year: 2026/2027