BIOMEDICAL ENGINEERING DIRETION, level I (bachelor)
Specialization: Information Systems in Medicine

				Hours					I						II						III						IV						V						VI						VII					
	Basic Courses	**Course Code**	**Type**	**Sum**	**Lec**	**C**	**Lab**	**P**	**Lec**	**C**	**Lab**	**P**	**E**	**ECTS**	**Lec**	**C**	**Lab**	**P**	**E**	**ECTS**	**Lec**	**C**	**Lab**	**P**	**E**	**ECTS**	**Lec**	**C**	**Lab**	**P**	**E**	**ECTS**	**Lec**	**C**	**Lab**	**P**	**E**	**ECTS**	**Lec**	**C**	**Lab**	**P**	**E**	**ECTS**	**Lec**	**C**	**Lab**	**P**	**E**	**ECTS**
B1	Foreign Language	IB-S1-PA-1/2/3/4-B1	**E**	**120**		**120**				30				2		30				2		30				2		30			E	2																	
B2	Physical Education	IB-S1-PA-1/2-B2	**E**	**60**		**60**				30						30																																	
B3	Mathematics	IB-S1-PA-1/2-B3	**B**	**150**	**90**	**60**			45	30			E	7	45	30			E	7																													
B4	Physics	IB-S1-PA-1-B4	**B**	**60**	**30**	**30**			30	30			E	6																																			
B5	Biomedical Data Acquisition	IB-S1-PA-1-B5	**B**	**45**	**15**		**30**		15		30			3																																			
B6	Material Science	IB-S1-PA-1-B6	**B**	**60**	**30**		**30**		30		30			4																																			
B7	Basics of Manufacturing Techniques	IB-S1-PA-1-B7	**B**	**30**	**15**			**15**	15			15		2																																			
B8	Chemistry	IB-S1-PA-1-B8	**B**	**60**	**30**	**30**			30	30				3																																			
B9	Biochemistry	IB-S1-PA-2-B9	**B**	**30**	**15**		**15**								15		15			2																													
B10	Biophysics	IB-S1-PA-2-B10	**B**	**60**	**30**		**30**								30		30			4																													
B11	Computer Programming	IB-S1-PA-1/2/3-B11	**B**	**120**	**30**		**60**	**30**	15		30			3	15		30		E	4				30		2																							
B12	Statistics in Biomedicine	IB-S1-PA-2-B12	**B**	**45**	**15**		**15**	**15**							15		15	15		4																													
B13	Electronics	IB-S1-PA-3-B13	**B**	**60**	**30**		**30**														30		30		E	4																					
B14	Circuit Theory	IB-S1-PA-2-B14	**B**	**30**	**15**	**15**									15	15			E	2																													
B15	Mechanics and Strength of Material	IB-S1-PA-2-B15	**B**	**60**	**30**	**30**									30	30			E	3																													
B16	Introduction to Anatomy and Physiology	IB-S1-PA-2-B16	**B**	**15**	**15**										15					2																													
B17	Medical Imaging Techniques	IB-S1-PA-3-B17	**B**	**45**	**15**		**15**	**15**													15		15	15	E	4																					
B18	Numerical Methods	IB-S1-PA-3-B18	**B**	**60**	**15**		**30**	**15**													15		30	15		4																					
B19	Biomedical Signal Processing	IB-S1-PA-3-B19	**B**	**60**	**30**		**30**														30		30		E	4																					
B20	CAD Foundemantals	IB-S1-PA-4-B20	**B**	**60**	**30**			**30**																			30			30		5														
B21	Computer Aided Calculations	IB-S1-PA-3-B21	**B**	**30**	**15**		**15**														15		15			2																					
B22	Biomechanical Engineering	IB-S1-PA-4-B22	**B**	**45**	**30**		**15**																				30		15		E	4														
B23	Introduction to Biomaterials	IB-S1-PA-3-B23	**B**	**60**	**30**		**30**														30		30			4																					
B24	Automation & Control	IB-S1-PA-5-B24	**B**	**75**	**30**	**15**	**30**																										30	15	30			5									
B25	Computer Graphics	IB-S1-PA-4/5-B25	**B**	**45**	**15**		**15**	**15**																			15		15			2				15		2								
B26	Implants	IB-S1-PA-4-B26	**B**	**30**	**15**			**15**																			15			15		2														
B27	Artificial Organs	IB-S1-PA-6-B27	**B**	**30**	**15**		**15**																															15		15			2					
B28	Legal, Ethical and Social Issues of Biomedical Engineering	IB-S1-PA-7-B28	**B**	**15**	**15**																																							15					1
B29	Normalization and Certification of Medical Products	IB-S1-PA-7-B29	**B**	**45**	**15**			**30**																																			15			30		3
	Specjalization Subjects			**1605**	**660**	**360**	**405**	**180**	**180**	**150**	**90**	**15**	**2**	**30**	**180**	**135**	**90**	**15**	**4**	**30**	**135**	**30**	**150**	**60**	**3**	**26**	**90**	**30**	**30**	**45**	**2**	**15**	**30**	**15**	**30**	**15**		**7**	**15**		**15**			**2**	**30**			**30**		**4**
S1	Algorithms & Data Structures	IB-S1-PA-4-S1-ISiM	**S**	**30**	**15**		**15**																				15		15			2														
S2	Biosensors	IB-S1-PA-4-S2-ISiM	**S**	**30**	**15**		**15**																				15		15			2														
S3	Medical Database Designing	IB-S1-PA-4-S3-ISiM	**S**	**45**	**15**		**30**																				15		30			4														
S4	Biocybernetics	IB-S1-PA-6-S4-ISiM	**S**	**45**	**15**		**15**	**15**																													15		15	15		3						
S5	Embedded Systems	IB-S1-PA-5-S5-ISiM	**S**	**75**	**30**		**30**	**15**																									30		30		E	5				15		1			
S6	Medical Electronic Equipment	IB-S1-PA-4-S6-ISiM	**S**	**45**	**30**			**15**																			30			15	E	4														
S7	Mechatronics	IB-S1-PA-5-S7-ISiM	**S**	**45**	**15**		**30**																										15		30		E	4									
S8	Reliability of Biomedical Systems	IB-S1-PA-7-S8-ISiM	**S**	**30**	**15**		**15**																																				15		15			2
S9	Medical Image Analysis	IB-S1-PA-5/6-S9-ISiM	**S**	**75**	**15**		**30**	**30**																									15		30		E	4						30			2		
S10	Bionics	IB-S1-PA-6-S10-ISiM	**S**	**60**	**30**		**15**	**15**																													30		15	15	E	4						
S11	Modelling and Simulation of Muscoloskeletal System	IB-S1-PA-4-S11-ISiM	**S**	**45**	**15**		**30**																				15		30			3														
S12	Designing of Application with Graphical User Interface	IB-S1-PA-5-S12-ISiM	**S**	**60**	**30**		**15**	**15**																									30		15	15		4									
S13	Programming in Python	IB-S1-PA-6-S13-ISiM	**S**	**15**			**15**																																15			1						
S14	Virtual Reality Modeling	IB-S1-PA-6-S14-ISiM	**S**	**90**	**30**		**60**																														30		60		E	5						
S15	Network Technology in Medicine	IB-S1-PA-7-S15-ISiM	**S**	**30**	**15**		**15**																																				15		15			2
S16	Introduction to graphical programming	IB-S1-PA-6-S16-ISiM	**S**	**45**	**15**		**15**	**15**																													15		15	15		3						
S17	Computional Inteligence in Biomedical Enginieering	IB-S1-PA-7-S17-ISiM	**S**	**45**	**15**			**30**																																			15			30		3
	Elective Courses			**810**	**315**		**345**	**150**																			**90**		**90**	**15**	**1**	**15**	**90**		**105**	**15**	**3**	**17**	**90**		**120**	**90**	**2**	**19**	**45**		**30**	**30**		**7**
E1	Elective Courses	IB-S1-PA-5/7-E1-EC	**E**	**180**	**75**		**30**	**75**																									30			30		2				45		30	45		4
E2	Bachelor Project	IB-S1-PA-7-E2-BP	**E**	**45**				**45**																																						45		15
E3	HES I*	IB-S1-PA-3-E3-ISiM	**E**	**60**				**60**																60		4																					
E4	HES II*	IB-S1-PA-5-E4-ISiM	**E**	**60**				**60**																																							
E5	HES III*	IB-S1-PA-6-E5-ISiM	**E**	**60**				**60**																																							
E6	Practise	IB-S1-PA-E6-4-P	**E**																																													
				405	**75**		**30**	**300**																**60**		**4**							**30**					**6**				**60**		**9**	**45**		**30**	**90**		**19**
				2820	**1050**	**360**	**780**	**630**	**180**	**150**	**90**	**15**	**2**	**30**	**180**	**135**	**90**	**15**	**4**	**30**	**135**	**30**	**150**	**120**	**3**	**30**	**180**	**30**	**120**	**60**	**3**	**30**	**150**	**15**	**135**	**120**	**3**	**30**	**105**		**135**	**150**	**2**	**30**	**120**		**60**	**150**		**30**
				Hours per week										**29**						**28**						**29**						**26**						**28**						**26**						**22**

Valid from: **2019/2020** **Type B – Basic course,** **Type E – elective course,**