

**DEPARTMENT OF BIOMEDICAL ENGINEERING BOLOGNA 2019 UNDERGRADUATE CURRICULUM**

	1st SEMESTER											2nd SEMESTER										
	Course		Hours			Credits		Other Issues				Course		Hours			Credits		Other Issues			
	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites		Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites	
1st SEMESTER	MAT1071	Mathematics 1	3	2	0	4	6	R	EN		2nd SEMESTER	MAT1072	Mathematics 2	3	2	0	4	6	R	EN		
	FIZ1001	Physics I	3	0	2	4	5	R	EN			FIZ1002	Physics 2	3	0	2	4	5	R	EN		
	KIM1170	General Chemistry	3	0	2	4	5	R	EN			BME1132	Probability & Biostatistics	3	0	0	3	5	R	EN		
	BME1101	Introduction to Biomedical Engineering	3	0	0	3	5	R	EN			BME1532	Cell Biology	3	0	0	3	5	R	EN		
	BME1901	Introductory Computer Sciences	2	0	2	3	4	R	EN			BME1902	Computer Aided Design	2	0	2	3	4	R	EN		
	MDB1031	Advanced English I	3	0	0	3	3	R	EN			MDB1032	Advanced English II	3	0	0	3	3	R	EN		
	TDB1031	Turkish Language 1	2	0	0	0	2	R	TR			TDB1032	Turkish Language 2	2	0	0	0	2	R	TR		
Total		7 Courses					21					Total		7 Courses		20						
3rd SEMESTER	Course		Hours			Credits		Other Issues			Course		Hours			Credits		Other Issues				
	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites		
	MAT1320	Linear Algebra	2	0	0	2	3	R	EN		BME2122	Signals & Systems	3	0	0	3	5	R	EN	MAT2411		
	MAT2411	Differential Equations	4	0	0	4	5	R	EN		BME2912	Numerical Methods in Biomedical Engineering	3	0	0	3	5	R	EN	BME1901		
	BME2911	Introduction to Human Anatomy & Physiology	3	0	0	3	4	R	EN		BME2312	Analog Electronics	3	0	2	4	6	R	EN	BME1901		
	BME2901	Biochemistry	3	0	2	4	5	R	EN	KIM1170	BME2322	Logic Design	2	0	2	3	5	R	EN			
	BME2301	Circuit Theory	4	0	2	5	6	R	EN	MAT1071	BME2002	General Internship	0	0	0	0	3	R	-			
BME2011	Occupational Health and Safety 1	2	0	0	2	2	R	EN		BME2012	Occupational Health and Safety 2	2	0	0	2	2	R	EN				
SEL0001	Social Elective A	3	0	0	3	3	E	EN		SEL0002	Social Elective B	3	0	0	3	4	E	EN				
EEL0001	English Elective	2	0	0	2	2	E	EN		Total		7 Courses		18			30					
Total		3 Courses					25		30			Total		7 Courses		18			30			
5th SEMESTER	Course		Hours			Credits		Other Issues			Course		Hours			Credits		Other Issues				
	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites		
	BME3321	Introduction to Microcontroller Programming	3	0	2	4	5	R	EN	BME2322	BME3142	Biomedical Modeling&Simulation	3	0	0	3	4	R	EN	BME3161		
	BME3921	Biomechanics I	3	0	0	3	5	R	EN		BME3402	Medical Instrumentation	3	0	2	4	6	R	EN	BME2312		
	BME3161	Biosignal Processing	3	0	0	3	4	R	EN	BME2122	BME3522	Biomechanics II	3	0	0	3	5	R	EN	BME3921		
	BME3711	Biothermodynamics	2	0	0	3	5	R	EN		BME3922	Biomechanics II	3	0	0	3	5	R	EN	BME3921		
	TEL0004	Technical Elective B	3	0	0	3	4	E	EN		BME3002	Professional Internship	0	0	0	0	3	R	-			
TEL0002	Technical Elective A	3	0	0	3	5	E	EN		TEL0003	Technical Elective A	3	0	0	3	5	E	EN				
ATA1031	Principles of Anatomi and History of Modern Turkey I	2	0	0	0	2	R	TR		ATA1032	Principles of Anatomi and History of Modern Turkey II	2	0	0	0	2	R	TR				
Total		7 Courses					19		30			Total		7 Courses		16			30			
7th SEMESTER	Course		Hours			Credits		Other Issues			Course		Hours			Credits		Other Issues				
	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites		
	BME4901	Engineering Design	2	2	0	3	3	R	EN		BME4000	Graduation Thesis	0	8	0	4	9	R	EN	BME4901		
	BME4911	Medical Imaging	3	0	2	4	6	R	EN	BME2911, BME2312	BME4352	Therapeutic and Prosthetic Devices	3	0	0	3	4	R	EN	BME2911		
	TEL0004	Technical Elective A	3	0	0	3	5	E	EN		TEL0007	Technical Elective A	3	0	0	3	5	E	EN			
	TEL0005	Technical Elective A	3	0	0	3	5	E	EN		TEL0008	Technical Elective A	3	0	0	3	5	E	EN			
	TEL0006	Technical Elective B	3	0	0	3	4	E	EN		TEL0009	Technical Elective B	3	0	0	3	4	E	EN			
SEL0003	Social Elective B	3	0	0	3	4	E	EN		SEL0004	Social Elective A	3	0	0	3	3	E	EN				
FEL0001	Multidisciplinary Elective	0	2	0	1	3	E	EN		Total		6 Courses		19			30					
Total		7 Courses					20		30			Total		6 Courses		19			30			
TECHNICAL ELECTIVE A	Course		Hours			Credits		Other Issues			Course		Hours			Credits		Other Issues				
	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites		
	BME3540	Cell and Tissue Engineering	3	0	0	3	5	E	EN	BME1532	ITB1680	Cok Sesli Müziğe Giriş	3	0	0	3	3	E	EN			
	BME4580	Genetic Engineering	3	0	0	3	5	E	EN	BME1532	ITB2020	History of Science	3	0	0	3	3	E	EN			
	BME3570	Biosensors	3	0	0	3	5	E	EN		ITB2030	Philosophy of Science	3	0	0	3	3	E	EN			
	BME3210	Cardiovascular Mechanics	3	0	0	3	5	E	EN		ITB2040	Economic Policies and Applications	3	0	0	3	3	E	EN			
	BME3360	BioMEMS	3	0	0	3	5	E	EN		ITB2080	Women in Social Transformations	3	0	0	3	3	E	EN			
BME3500	Introduction to Neural Engineering	3	0	0	3	5	E	EN		ITB2090	Democracy Culture Principles and Institutions	3	0	0	3	3	E	EN				
BME3160	Bioinformatics	3	0	0	3	5	E	EN		ITB3010	Sociology	3	0	0	3	3	E	EN				
Total		7 Courses					20		30			Total		6 Courses		19			30			
TECHNICAL ELECTIVE B	Course		Hours			Credits		Other Issues			Course		Hours			Credits		Other Issues				
	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites		
	BME3180	Machine Learning in Biomedical Engineering	3	0	0	3	4	E	EN		ITB3100	Introduction to Philosophy	3	0	0	3	3	E	EN			
	BME2132	Discrete Mathematics	3	0	0	3	4	E	EN		ITB3020	Political Developments and Social Movements in Twentieth-Century	3	0	0	3	3	E	EN			
	BME2112	Advanced Engineering Mathematics	3	0	0	3	4	E	EN		ITB3040	Political Ideologies: Theory and History	3	0	0	3	3	E	EN			
	Total		7 Courses					20		30			Total		6 Courses		19			30		
	Total		7 Courses					20		30			Total		6 Courses		19			30		
MULTIDISCIPLINARY ELECTIVE	Course		Hours			Credits		Other Issues			Course		Hours			Credits		Other Issues				
	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites		
	BME4991	Multidisciplinary Design Project	0	2	0	1	3	E	EN		ITB3150	History and Cinema	3	0	0	3	3	E	EN			
	BLM4991	Multidisciplinary Design Project	0	2	0	1	3	E	EN		ITB3210	Communication in Contemporary Society	3	0	0	3	3	E	EN			
	ELM4991	Multidisciplinary Design Project	0	2	0	1	3	E	EN		ITB3220	Modernity and Consumer Society	3	0	0	3	3	E	EN			
	EHM4991	Multidisciplinary Design Project	0	2	0	1	3	E	EN		ITB3250	Introduction to Psychology	3	0	0	3	3	E	EN			
	KOM4991	Multidisciplinary Design Project	0	2	0	1	3	E	EN		ITB3260	Cultural Studies and Identity	3	0	0	3	3	E	EN			
Total		7 Courses					7		21			Total		7 Courses		21			63			
ENGLISH ELECTIVE	Course		Hours			Credits		Other Issues			Course		Hours			Credits		Other Issues				
	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites		
MDB2051	Reading and Speaking in English	2	0	0	2	2	E	EN		ITB4930	History of Architecture	3	0	0	3	3	E	EN				
MDB3032	Business English	2	0	0	2	2	E	EN		ITB4100	Social Structures and Historical Transformations	3	0	0	3	3	E	EN				
Total		2 Courses					4		8			Total		2 Courses		4			8			
Total		7 Courses					25		30			Total		7 Courses		18			30			
SOCIAL ELECTIVE A	Course		Hours			Credits		Other Issues			Course		Hours			Credits		Other Issues				
	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites	Code	Name	T	U	L	Local (K)	ECTS	R/E	Language	Prerequisites		
	ITB1680	Cok Sesli Müziğe Giriş	3	0	0	3	3	E	EN		ITB3300	Environment and Ecology	3	0	0	3	3	E	EN			
	ITB2020	History of Science	3	0	0	3	3	E	EN		ITB3360	History of Art	3	0	0	3	3	E	EN			
	ITB2030	Philosophy of Science	3	0	0	3	3	E	EN		ITB3390	History of Civilizations	3	0	0	3	3	E	EN			
	ITB2040	Economic Policies and Applications	3	0	0	3	3	E	EN		ITB3420	The Social Structure of Ottoman Empire	3	0	0	3	3	E	EN			
	ITB2080	Women in Social Transformations	3	0	0	3	3	E	EN		ITB3550	Human Rights	3	0	0	3	3	E	EN			
	ITB2090	Democracy Culture Principles and Institutions	3	0	0	3	3	E	EN		ITB3560	Political Philosophy	3	0	0	3	3	E	EN			
	ITB3010	Sociology	3	0	0	3	3	E	EN		ITB3570	Philosophy of Education	3	0	0	3	3	E	EN			
	ITB3020	Introduction to Philosophy	3	0	0	3	3	E	EN		ITB4930	History of Architecture	3	0	0	3	3	E	EN			
	ITB3040	Political Developments and Social Movements in Twentieth-Century	3	0	0	3	3	E	EN		TDB4100	Social Structures and Historical Transformations	3	0	0	3	3	E	EN			
	ITB3100	Introduction to Philosophy	3	0	0	3	3	E	EN		TDB4051	Academic Turkish	3	0	0	3	3	E	EN			
	ITB3150	History and Cinema	3	0	0	3	3	E	EN		Total		25 Courses		63			189				