BIOENGINEERING %100 ENGLISH UNDERGRADUATE PROGRAM

2018-2019 NEW SYLLABUS

Total Local Credit: 157 - Total ECTS: 240 - Total Elective Course ECTS: 60

1. Semester

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
ENF1170	Introductory Computer Sciences		EN	2	2	0	3	4
MDB1031	Advanced English 1		EN	3	0	0	3	3
TDB1031	Turkish Language 1		TR	2	0	0	0	2
KIM1170	General Chemistry		EN	3	0	2	4	5
MAT1071	Mathematics 1		EN	3	2	0	4	6
FIZ1001	Physics 1		EN	3	0	2	4	5
BYM1201	Introduction to Bioengineering		EN	2	0	0	2	2
SEC0001	Elective 1-1		EN	3	0	0	3	3
	Total						**23**	**30**

2. Semester

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
MAT1072	Mathematics 2		EN	3	2	0	4	6
FIZ1002	Physics 2		EN	3	0	2	4	5
BYM1512	Organic Chemistry for Engineers		EN	3	0	0	3	5
BYM1602	Physical Chemistry in Bioengineering		EN	3	0	0	3	4
MDB1032	Advanced English 2		EN	3	0	0	3	3
TDB1032	Turkish Language 2		TR	2	0	0	0	2
SEC0002	Elective 2-1		EN	3	0	0	3	3
BYM1312	Occupational Safety and Health 1		EN	2	0	0	2	2
	Total						**22**	**30**

3. Semester

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM2311	Occupational Safety and Health 2		EN	2	0	0	2	2
BYM2321	Biochemistry in Bioengineering		EN	3	0	0	3	4
SEC0003	Elective 3-1		EN	3	0	0	3	5
BYM2711	Biothermodynamics		EN	2	2	0	3	5
MDB2051	Reading and Speaking in English		EN	2	0	0	2	2
BYM2101	Basic Principles in Molecular Biology		EN	3	0	0	3	5
MAT2411	Differential Equations		EN	4	0	0	4	5
ATA1031	Principles of Atatürk and Hist. of Mod. Turkey 1		TR	2	0	0	0	2
	Total						**20**	**30**

4. Semester

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM2812	Fluid Mechanics in Bioengineering		EN	3	0	0	3	5
BYM2302	Biomaterials		EN	3	0	0	3	5
BYM2222	Cell Biology and Cellular Mechanisms		EN	2	0	2	3	5
BYM2202	Polymer Science and Technology		EN	3	0	0	3	4
SEC0004	Elective 4-1		EN	3	0	0	3	5
MDB3032	Business English		EN	2	0	0	2	2
ATA1032	Principles of Atatürk and Hist. of Mod. Turkey 2		TR	2	0	0	0	2
BYM2002	Intern 1		EN	0	0	0	0	2
	Total						**17**	**30**

5. Semester

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM3901	Heat Transfer in Bioengineering		EN	3	0	0	3	5
BYM3911	Mass Transfer in Bioengineering		EN	3	0	0	3	5
BYM3401	Separation Processes in Bioengineering		EN	2	0	2	3	5
BYM3511	Genetics Engineering		EN	2	0	2	3	5
SEC0005	Elective 5-1		EN	3	0	0	3	5
SEC0005	Elective 5-2		EN	3	0	0	3	5
	Total						**18**	**30**

6. Semester

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM3212	Tissue Engineering		EN	3	0	0	3	5
BYM3202	Engineering Laboratory		EN	0	0	4	2	4
BYM3782	Bioreactor Design		EN	3	0	0	3	5
SEC0006	Elective 6-1		EN	3	0	0	3	5
SEC0006	Elective 6-2		EN	3	0	0	3	5
BYM3002	Intern 2		EN	0	0	0	0	2
BYM3032	Project		EN	2	2	0	3	4
	Total						**17**	**30**

7. Semester

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM4241	Bioengineering Laboratory 1		EN	0	0	4	2	4
BYM4081	Mathematical Modelling in Bioengineering		EN	2	2	0	3	5
BYM4741	Bioprocess Engineering		EN	3	0	0	3	5
BYM4191	Physiology		EN	3	0	0	3	4
SEC0007	Elective 7-1		EN	3	0	0	3	4
SEC0007	Elective 7-2		EN	3	0	0	3	4
SEC0007	Elective 7-3		EN	3	0	0	3	4
	Total						**20**	**30**

8. Semester

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM4000	Graduation Thesis		EN	0	12	0	6	9
BYM4382	Immunology		EN	3	0	0	3	5
BYM4242	Bioengineering Laboratory 2		EN	0	0	4	2	4
SEC0008	Elective 8-1		EN	3	0	0	3	4
SEC0008	Elective 8-2		EN	3	0	0	3	4
SEC0009	Elective 9-1		EN	3	0	0	3	4
	Total						**20**	**30**

Elective 3

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM2201	Biomedical Electronics		EN	3	0	0	3	5
BYM2301	Introduction to Modern Biology		EN	3	0	0	3	5
BYM2401	Technical Drawing in Bioengineering		EN	3	0	0	3	5

Elective 4

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM2502	Cell Culture Systems		EN	3	0	0	3	5
BYM2602	Biosensors		EN	3	0	0	3	5
BYM2702	Stoichiometry		EN	3	0	0	3	5

Elective 5

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM3331	Microbiology in Bioengineering		EN	3	0	0	3	5
BYM3651	Fundamentals of Biopolymers		EN	3	0	0	3	5
BYM3361	Concepts of Genetics		EN	3	0	0	3	5
BYM3521	Bioinstrumental Techniques		EN	3	0	0	3	5

Elective 6

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM3402	Biomedical Physics		EN	3	0	0	3	5
BYM3502	Biophysics in Bioengineering		EN	3	0	0	3	5
BYM3602	Enzyme Technology		EN	3	0	0	3	5
BYM3802	Artificial Organs		EN	3	0	0	3	5

Elective 7

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM4691	Biochemical Engineering		EN	3	0	0	3	4
BYM4521	Design in Bioengineering		EN	3	0	0	3	4
BYM4721	Nanotechnology in Bioengineering		EN	3	0	0	3	4
BYM4661	Biomedical Materials		EN	3	0	0	3	4
BYM4451	Biotechnology and Biosafety		EN	3	0	0	3	4
BYM4321	Controlled Release Systems		EN	3	0	0	3	4
BYM4851	Enviromental Microbiology	BYM3331	EN	3	0	0	3	4

Elective 8

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM4102	Data Analysis and Visualization		EN	3	0	0	3	4
BYM4202	Modern Techniques in Molecular Biology		EN	3	0	0	3	4
BYM4302	Vocational English in Bioengineering		EN	3	0	0	3	4
BYM4502	Virology		EN	3	0	0	3	4

Elective 9

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
BYM4672	Biotransport		EN	3	0	0	3	4
BYM4292	Bioengineering Economics		EN	3	0	0	3	4
BYM4472	Process Dynamics and Control in Bioengineering		EN	3	0	0	3	4

Elective 1

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
ITB2090	Democracy Culture Principles and Institutions		EN	3	0	0	3	3
ITB3020	Introduction to Philosophy		EN	3	0	0	3	3
ITB3040	Political Developments ana Social Movements in 20th-Century		EN	3	0	0	3	3
ITB3150	History and Cinema		EN	3	0	0	3	3
ITB3220	Modernity and Consumer Society		EN	3	0	0	3	3
ITB3260	Cultural Studies and Identity		EN	3	0	0	3	3
ITB3270	Istanbul: Past, Present, and Future		EN	3	0	0	3	3
ITB3330	Environment and Ecology		EN	3	0	0	3	3
ITB3390	History of Civilizations		EN	3	0	0	3	3
ITB3420	The Social Structure of Ottoman Empire		EN	3	0	0	3	3
ITB3250	Introduction to Psychology		EN	3	0	0	3	3

Elective 2

Code	Name	Prerequisite	Lng	T	P	L	LC	ECTS
ITB2030	Philosophy of Science		EN	3	0	0	3	3
ITB2040	Economic Policies and Applications		EN	3	0	0	3	3
ITB2080	Women in Social Transformations		EN	3	0	0	3	3
ITB3010	Sociology		EN	3	0	0	3	3
ITB3130	Political Ideologies: Theory and History		EN	3	0	0	3	3
ITB3210	Communication in Contemporary Society		EN	3	0	0	3	3
ITB2020	History of Science		EN	3	0	0	3	3
ITB4930	History of Architecture		EN	3	0	0	3	3
ITB3560	Political Philosophy		EN	3	0	0	3	3
ITB3570	Philosophy of Education		EN	3	0	0	3	3
ITC1020	Social Structures and Historical Transformations		EN	3	0	0	3	3

ITB3360	History of Art		EN	3	0	0	3	3
MDB4011	Introduction to German Language Skills		DE	3	0	0	3	3
MDB4021	German Language Skills		DE	3	0	0	3	3
MDB4031	Advanced German		DE	3	0	0	3	3

MDB4041	Reading &Speaking in German		DE	3	0	0	3	3
MDB4051	Business German		DE	3	0	0	3	3