

BİRÜNİ UNIVERSITY
FACULTY OF ENGINEERING AND NATURAL SCIENCES
TEACHING PLAN DEPARTMENT OF BIOMEDICAL ENGINEERING

1st Semester (Fall)

Code	Prerequisite	Course Title	C/E	T	P	L	C	ECTS
CHM121		General Chemistry	C	3	0	2	4	6
MTH101		Mathematics I	C	3	2	0	4	7
PHY101		Physics I	C	3	0	2	4	7
CAR005		Introduction to Biomedical Engineering and Career Planning	C	2	0	0	2	4
ATA151		Atatürk's Prin. and His. of Turkish Revolution I	C	2	0	0	2	2
TDI161		Turkish Language and Literature I	C	2	0	0	2	2
GER101		German I	C	2	0	0	2	2
		TOTAL ECTS						30

2nd Semester (Spring)

Code	Prerequisite	Course Title	C/E	T	P	L	C	ECTS
BME118		Engineering Graphics	C	2	2	0	3	4
MTH102		Mathematics II	C	3	2	0	4	7
PHY102		Physics II	C	3	0	2	4	7
MTH104		Linear Algebra	C	3	0	0	3	6
ATA152		Atatürk's Prin. and His. of Turkish Revolution II	C	2	0	0	2	2
TDI162		Turkish Language and Literature II	C	2	0	0	2	2
GER102		German II	C	2	0	0	2	2
		TOTAL ECTS						30

3rd Semester (Fall)

Code	Prerequisite	Course Title	C/E	T	P	L	C	ECTS
COM241		Scientific Computing	C	2	2	0	3	6
MTH205		Differential Equations	C	4	0	0	4	6
BME257		Electric Circuits I	C	3	0	2	4	6
COM116		Computer Programming	C	1	2	0	2	4
CHM219		Biochemistry I	C	3	0	3	5	8
		TOTAL ECTS						30

4th Semester (Spring)								
Code	Prerequisite	Course Title	C/E	T	P	L	C	ECTS
BME258		Electric Circuits II	C	3	0	2	4	6
BME246		Microcontrollers and Embedded Systems	C	2	0	2	3	6
BME252		Human Physiology for Engineers	C	3	0	0	3	6
		Technical Elective Course- I						6
		Technical Elective Course -II						6
		TOTAL ECTS						30

5th Semester (Fall)								
Code	Prerequisite	Course Title	C/E	T	P	L	C	ECTS
BME349		Human Anatomy for Engineers	C	2	0	0	2	4
BME343		Signals and Systems	C	3	0	0	3	6
BME345		Medical Electronics	C	2	2	0	3	6
ISGE207		Occupational Health and Safety	C	2	0	0	2	4
GEN700		Cell Biology	C	3	0	3	5	6
		University Elective Course -I	E					4
		TOTAL ECTS						30

6th Semester (Spring)								
Code	Prerequisite	Course Title	C/E	T	P	L	C	ECTS
BME342		Radiation Physics and Safety	C	3	0	0	3	6
BME362		Biomedical Instrumentation Systems	C	3	0	2	4	6
BME348		Physiological Modelling and Control Systems	C	3	0	0	3	6
		Technical Elective Course- I	E					6
		Technical Elective Course -II	E					6
		TOTAL ECTS						30

7th Semester (Fall)								
Code	Prerequisite	Course Title	C/E	T	P	L	C	ECTS
BME447		Graduation Project I	C	2	3	0	4	6
BME453		Medical Device Regulations and Processes	C	3	0	0	3	6
		Technical Elective Course -I	E					6

		Technical Elective Course -II	E					6
		Technical Elective Course -III	E					6
		TOTAL ECTS						30

8th Semester (Spring)								
Code	Prerequisite	Course Title	C/E	T	P	L	C	ECTS
BME450	BME447	Graduation Project II	C	3	4	0	5	8
BME454		Quality Management System in Medical Devices	C	3	0	0	3	6
BME459		Internship	C	0	0	0	0	6
		Technical Elective Course -I	E					6
		University Elective Course -I	E					4
		TOTAL ECTS						30

TECHNICAL ELECTIVES								
Code	Prerequisite	Course Title	C/E	T	P	L	C	ECTS
BIO115		General Biology I	E	3	0	0	3	6
BIO118		General Biology II	E	3	0	0	3	6
BME700		Recent Topics in BME	E	3	0	0	3	6
BME701		Medical Informatics	E	3	0	0	3	6
BME702		Modern Physics	E	3	0	0	3	6
BME703		Data Structures in Biomedicine	E	3	0	0	3	6
BME704		Computational Biomedicine	E	3	0	0	3	6
BME705		Biomechanics	E	3	0	0	3	6
BME706		Medical Imaging	E	3	0	0	3	6
BME707		Biosensors	E	3	0	0	3	6
BME708		Machine Learning	E	3	0	0	3	6
BME709		Biomedical Data Mining	E	3	0	0	3	6
BME710		Human-Machine Interface	E	3	0	0	3	6
BME711		Digital Image Processing	E	3	0	0	3	6
BME712		Information Theory	E	3	0	0	3	6
BME713		Biomedical Optics	E	3	0	0	3	6
BME714		Electromagnetic Field Theory	E	3	0	0	3	6
BME715		Medical Device Calibration and Control	E	2	0	0	2	4
CHM220		Biochemistry II	E	3	0	3	5	8
GEN331		Biotechnology	E	3	0	0	3	6
GEN701		Bioinformatics	E	3	2	0	4	6
GEN702		Histology	E	3	0	0	3	6

GEN703	Enzymology	E	2	0	0	2	6
GEN704	Biostatistics	E	3	0	0	3	6
GEN705	Embryology	E	3	0	0	3	6
GEN706	Ecology	E	2	0	0	2	6
GEN707	Chromosome Biology	E	3	0	0	3	6
GEN708	Botanics	E	2	0	0	2	6
GEN709	Biophysics	E	3	0	0	3	6
GEN710	Evolution & Biodiversity	E	2	0	0	2	6
GEN711	Quantum Physics	E	3	0	0	3	6
GEN712	Membrane Biology	E	3	0	0	3	6
GEN713	Human Physiology	E	3	0	0	3	6
GEN714	Human Genetics	E	3	0	0	3	6
GEN715	Evolutionary Biology	E	2	0	0	2	6
GEN717	Introduction to Pathology	E	3	0	0	3	6
GEN718	Virology	E	2	0	0	2	6
GEN719	Drug-Development	E	2	0	0	2	6
GEN720	Engineering Economy	E	2	0	0	2	6
GEN721	Immunology	E	2	0	0	2	6
GEN722	Developmental Biology	E	3	0	0	3	6
GEN723	Stem Cells	E	3	0	0	3	6
GEN724	Systems Biology	E	3	0	0	3	6
GEN725	Genetic Disorders and Gene Therapy	E	3	0	0	3	6
GEN726	Nutrigenomics	E	3	0	0	3	6
GEN727	Pharmacogenetic	E	3	0	0	3	6
GEN728	Biomaterials	E	3	0	0	3	6
GEN729	Fermentation Technology	E	3	0	0	3	6
GEN730	Plant Molecular Biology	E	3	0	0	3	6
GEN731	Practical DNA Analysis	E	3	0	0	3	6
GEN732	Advances in Molecular Genetics	E	2	0	0	2	6
GEN733	Cancer Biology	E	2	0	0	2	6
GEN734	Genetic Basis of Drug Methabolism	E	2	0	0	2	6
GEN735	Transgenic Animals	E	2	0	0	2	6
GEN736	Clinical Genetics	E	3	0	0	3	6
GEN737	Protein Modelling	E	3	0	0	3	6
GEN738	Nanomedicine-Nanotechnology	E	3	0	0	3	6
GEN739	Computational Biology	E	3	0	0	3	6
GEN740	Tissue Engineering	E	3	0	0	3	6
GEN741	Plant Physiology	E	3	0	0	3	6
GEN742	Infectious Diseases	E	3	0	0	3	6
GEN743	Neurobiology & Neuroengineering	E	3	0	0	3	6
GEN744	Introduction to Clinical Biochemistry	E	3	0	0	3	6

GEN745		Molecular Mechanism of Diseases	E	3	0	0	3	6
GEN746		Special Subjects in Molecular Biology and Genetics	E	2	0	0	2	6
GEN747		Nobel Laureates	E	2	0	0	2	6
GEN749		Philosophy of Biology	E	3	0	0	3	6
GEN750		Project Design	E	2	0	0	2	6
GEN751		Vaccine Technology	E	3	0	0	2	6
GEN752		Protein Structure and Function	E	3	0	0	3	6

UNIVERSITY ELECTIVES								
Code	Prerequisite	Course Title	C/E	T	P	L	C	ECTS
BIR300		Behavioral Science	E	2	0	0	2	4
BIR301		Communication Skills	E	2	0	0	2	3
BIR308		Occupational Health and Safety	E	2	0	0	2	4
BIR322		Volunteering	E	1	2	0	2	4
BIR319		Entrepreneurship and Brand Management	E	2	0	0	2	4
BIR323		Project Management	E	2	0	0	2	2
BIR324		Research Studies	E	2	0	0	2	4
BIR326		Drawing	E	2	0	0	2	2
BIR327		Techniques in Biological Research	E	3	0	0	3	6
BIR328		Art, Culture and Society	E	2	0	0	2	2
BIR329		Health Care and Emergency	E	2	0	0	2	2
BIR330		Critical Thinking and Creativity	E	3	0	0	3	6
BIR331		Research and Academic Writing	E	2	0	0	2	4
BIR332		Environmental Protection	E	3	0	0	3	6
BIR333		Web Design	E	3	0	0	2	6
BIR334		Bioethics	E	2	0	0	2	4
BIR335		History of Science	E	2	0	0	2	4
BIR336		Art and Interpretation	E	2	0	0	2	4
BIR337		Food Safety and Security	E	2	0	0	2	4
BIR338		Forensic Science	E	2	0	0	2	4
BIR339		Clinical Trials	E	2	0	0	2	4
BIR340		Health Information and Computer Practicals	E	3	0	0	3	6
TLC003		Turkish language for Foreign Students I	E	4	2	0	5	6
TLC004	TLC003	Turkish language for Foreign Students II	E	4	2	0	5	6