

DEPARTMENT OF GENETICS AND BIOENGINEERING

First Semester (FALL)

Code		Courses	Prerequisite	T	U	L	Y Credit	ECTS
GBE	111	Biology I	-	2	1	3	4	8
MATH	131	Calculus I	-	3	2	0	4	6
AFE	131	Academic English II	-	2	2	0	3	4
PHYS	101	Physics I	-	3	0	2	4	6
CHEM	111	General Chemistry I	-	2	2	0	3	6
		Total		12	7	5	18	30

Second Semester (SPRING)

Code		Courses	Prerequisite	T	U	L	Y Credit	ECTS
GBE	102	Biology II	-	3	0	0	3	3
MATH	132	Calculus II	MATH 131	3	2	0	4	6
AFE	132	Academic English II	AFE 131	2	2	0	3	4
PHYS	102	Physics II	PHYS 101	3	0	2	4	6
CHEM	112	General Chemistry II	CHEM 111	2	2	0	3	6
CHEM	113	General Chemistry Laboratory	-	1	0	2	2	5
		Total		14	6	4	19	30

Third Semester (FALL)

Code		Courses	Prerequisite	T	U	L	Y Credit	ECTS
GBE	203	Microbiology	GBE 111	2	1	3	4	7
GBE	205	Cell Biology	-	2	1	3	4	6
CHEM	205	Introduction to Organic Chemistry and Biomacromolecules	-	2	2	0	3	6
GBE	222	Biometrics: Numerical and statistical methods for bioengineering applications	MATH 131	2	2	0	3	6
ES	117	Introduction to Computing	-	2	0	2	3	5
		Total		10	6	8	17	30

Fourth Semester (SPRING)

Code		Courses	Prerequisite	T	U	L	Y Credit	ECTS
GBE	212	Classical and Molecular Genetics	GBE 111	2	2	0	3	6
GBE	216	Classical and Molecular Genetics Lab	GBE 111	0	1	3	2	5
CHEM	215	Analytical Chemistry	-	3	0	2	4	6
ECON	294	Economics	-	3	0	0	3	4
MATH	241	Differential Equations	MATH 132	3	2	0	4	6
HUM	103	Humanities	-	2	0	0	2	3
		Total		13	5	5	18	30

Fifth Semester (FALL)								
Code		Courses	Prerequisite	T	U	L	Y Credit	ECTS
GBE	301	Biochemistry I	CHEM 205	2	1	3	4	7
GBE	321	Biothermodynamics	CHEM 112	2	2	0	3	5
GBE	341	Techniques in Genetics Engineering I	GBE 212	2	2	0	3	6
GBE	361	Biotransport Phenomena I	GBE 222, MATH 241	2	2	0	3	5
TKL	201	Turkish Language I	-	2	0	0	2	2
FE	XX1	Free Elective I	-	3	0	0	3	5
		Total		13	7	3	18	30
Sixth Semester (SPRING)								
Code		Courses	Prerequisite	T	U	L	Y Credit	ECTS
GBE	302	Biochemistry II	GBE 301	2	1	3	4	9
GBE	326	Experimental GBE I: Principles	PHYS 102, GBE 321	2	0	2	3	6
GBE	342	Techniques in Genetics Engineering II	GBE 341	2	1	3	4	8
GBE	XX1	Restricted Elective I	-	3	0	0	3	5
TKL	202	Turkish Language II	-	2	0	0	2	2
		Total		11	2	8	16	30
Seventh Semester (FALL)								
Code		Courses	Prerequisite	T	U	L	Y Credit	ECTS
GBE	403	Molecular Biology I	GBE 341	3	0	0	3	6
GBE	415	Experimental GBE II: Design & Implementation	GBE 326	2	2	0	3	6
GBE	XX2	Restricted Elective II (DE)	-	3	0	0	3	5
GBE	451	Techniques in Bioprocess Engineering	-	3	0	0	3	6
ES	301	Engineering Management	-	3	0	0	3	4
HTR	301	History of Turkish Revolution I	-	2	0	0	2	2
GBE	400	Summer Practice	GBE 301 GBE 341 AFE 132	0	2	0	1	1
		Total		16	4	0	18	30
Eighth Semester (SPRING)								
Code		Courses	Prerequisite	T	U	L	Y Credit	ECTS
GBE	404	Molecular Biology II	GBE 341	2	1	3	4	5
GBE	492	Engineering Project	Senior Student Standing	1	0	4	3	8
GBE	XX3	Restricted Elective III (DE)	-	3	0	0	3	5
GBE	XX4	Restricted Elective IV (TE)	-	3	0	0	3	5
HTR	302	History of Turkish Revolution II	-	2	0	0	2	2
FE	XX2	Free Elective II	-	3	0	0	3	5
		Total		14	1	7	18	30
		General Total					142	240

AREA ELECTIVES

Code		Courses	Prerequisite	T	U	L	Y Credit	ECTS
BIO	111	Modern Biology	-	3	0	0	3	5
GBE	312	Immunology	-	3	0	0	3	5
GBE	324	Neurobiology	-	3	0	0	3	5
GBE	356	Plant Genetics	-	3	0	0	3	5
GBE	357	Human Genetics	-	3	0	0	3	5
GBE	373	Plant Tissue Culture Engineering	-	3	0	0	3	5
GBE	376	Forensic Technologies	-	3	0	0	3	5
GBE	405	Protein Chemistry	-	3	0	0	3	5
GBE	414	Cancer Biology	-	3	0	0	3	5
GBE	431	Stem Cell Biology	-	3	0	0	3	5
GBE	432	Cell and Tissue Culture	-	3	0	0	3	5
GBE	433	Biomaterials	-	3	0	0	3	5
GBE	435	Gene Therapy	-	3	0	0	3	5
GBE	442	Genomics and Proteomics	-	3	0	0	3	5
GBE	444	Introduction to Bioinformatics	-	3	0	0	3	5
GBE	472	Trends in Tissue Engineering	-	3	0	0	3	5
GBE	482	Special Topics: Trends in Bioanalytical Techniques	-	3	0	0	3	5