



T.C.
ABDULLAH GÜL ÜNİVERSİTESİ REKTÖRLÜĞÜ
Yaşam ve Doğa Bilimleri Fakültesi Dekanlığı

FAKÜLTE KURUL KARARI

Toplantı Sayısı	Karar Sayısı
05	01

Gündem 2022.05.01: Fakültemiz Biyomühendislik Bölüm Kurulunun 25.05.2022 tarih ve 05 sayılı kararları hakkında görüşüldü.

Karar 2022.05.01: Fakültemiz Biyomühendislik Bölümü lisans eğitim öğretim müfredatı ve ders içeriklerinin ekteki haliyle güncellenme talebinin Abdullah Gül Üniversitesi Lisans Yönetmeliğinin 8. maddesinin 4.bendi ile 18.maddesinin 2.bendi gereğince bölümden geldiği şekliyle kabulüne ve kararın Öğrenci İşleri Daire Başkanlığına tebliğine oy birliği ile karar verilmiştir.

e-imzalıdır
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e-imzalıdır
Ayşe HIZAR (Raportör)

ABDULLAH GÜL ÜNİVERSİTESİ / ABDULLAH GÜL UNIVERSITY
Biyomühendislik Lisans Programı /
Bioengineering Undergraduate Program

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1. SINIF / GÜZ YARIYILI (Freshman Year / FALL Semester)

Course Code	Course Name	PreReq	Lec.	Lab	Credits	ECTS
MATH151	Calculus I		5	0	5	6
BENG105	Introduction to Programming		3	2	4	6
BENG102	General Chemistry		3	2	4	5
ENG 101	English I		4	0	4	4
GLB 101	AGU Ways		3	0	3	4
BENG101	Introduction to Bioengineering		2	0	2	2
PHYS101	Physics I		3	2	4	5
Total Credits						32

1. SINIF / BAHAR YARIYILI (Freshman Year / SPRING Semester)

Course Code	Course Name	PreReq	Lec.	Lab	Credits	ECTS
MATH152	Calculus II	MATH 151	5	0	5	6
GLB XXX	Global Issues Elective I		3	0	3	4
ENG 102	English II		4	0	4	4
BENG104	Principles of Organic Chemistry	BENG 102	4	0	4	4
PHYS102	Physics II		3	2	4	5
BENG103	Biology for Life Sciences		3	0	3	4
CP100.BE NG	Career Planning		1	0	1	1
Total Credits						28

2. SINIF / GÜZ YARIYILI (Sophomore Year / FALL Semester)

Code	Course Name	PreReq	Lec.	Lab	Credits	ECTS
BENG201	Biochemistry	BENG 103	3	0	3	6
BENG202	Fluid Dynamics in Bioengineering	MATH 152	3	0	3	6
GLB XXX	Global Issues Elective II		3	0	3	4
TURK XXX	Turkish Language Pool		2	0	2	2
BENG203	Thermodynamics for Bioengineers	MATH 152	3	0	3	6
MATH205	Differential Equations	MATH152	4	0	4	5
Total Credits						29

2. SINIF / BAHAR YARIYILI (Sophomore Year / SPRING Semester)

Code	Course Name	PreReq	Lec.	Lab	Credits	ECTS
BENG204	Cell and Molecular Biology	BENG103	3	0	3	5
BENG205	Heat and Mass Transfer	MATH 152	3	0	3	5
MBG 210	Sciences and Ethics		2	0	2	4
BENG207	Microbiology		3	0	3	5
BENG216	Bioengineering Laboratory I		1	4	3	6
GLB XXX	Global Issues Elective III		3	0	3	4
TURK XXX	Turkish Language Pool		2	0	2	2
Total Credits						31

3. SINIF / GÜZ YARIYILI (Junior Year / FALL Semester)

Course Code	Course Name	PreReq	Lec	Lab	Credits	ECTS
BENG316	Bioengineering Laboratory II	BENG204 BENG207	1	4	3	7
GLB XXX	Global Issues Elective IV		3	0	3	4
HIST 2XX	History of Turkey Pool		2	0	2	2
BENG303	Bioprocess Engineering		3	0	3	6
BENG309	Genetics		3	0	3	6
	Concentration Area Electives					5
						30

3. SINIF / BAHAR YARIYILI (Junior Year / SPRING Semester)

Course Code	Course Name	PreReq	Lec.	Lab	Credits	ECTS
BENG318	Bioengineering Laboratory III		1	4	3	7
HIST 2XX	History of Turkey Pool		2	0	2	2
BENG302	Biomaterials Science		3	0	3	6
BENG319	Biomedical Electronics and Measurement		4	2	5	6
XXX	Nontechnical Elective Course					4
	Concentration Area Electives					5
	Total Credits					30

TRACK SELECTION***4. SINIF / GÜZ YARIYILI (Senior Year / FALL Semester)**

Course Code	Course Name	PreReq.	Lec.	Lab	Credits	ECTS
BENG491	Capstone Project I**		0	2	1	8
	Concentration Area Elective					5
	Concentration Area Elective					5
	Concentration Area Elective					5
OHS 401	Occupational Health and Safety I		2	0	2	1
BENG493	Summer Internship		0	2	1	6
	Total Credits					30

** 1st and 2nd year core courses must be completed (passed).

4. SINIF / BAHAR YARIYILI (Senior Year / SPRING Semester)

Course Code	Course Name	PreReq.	Lec.	Lab	Credits	ECTS
BENG492	Capstone Project II***	BENG 491	0	2	1	8
OHS 402	Occupational Health and Safety II		2	0	2	1
	Concentration Area Elective					5
	Concentration Area Elective					5
	Concentration Area Elective					5
XXX	Nontechnical Elective Course					3
XXX	Nontechnical Elective Course					3
	Total Credits					30

*** Capstone Project I should be passed.

***Student will decide tracks and then choose concentration area electives provided for each track**

Concentration Area Electives*

<i>Bioengineering A: Biomaterials and Tissue Engineering</i>					
Code	Course Name	Lec.	Lab	Credits	ECTS
BENG304	Tissue Engineering	3	0	3	5
BENG426	Polymer Science	3	0	3	5
BENG305	Artificial Organs	3	0	3	5
BENG427	Tissue Biomaterial Interaction	3	0	3	5
BENG429	Controlled Drug Delivery	3	0	3	5
BENG430	Biomedical Polymers	3	0	3	5
BENG431	Nanofabrication	3	0	3	5
BENG432	Tissue Engineering and Regenerative Medicine	3	0	3	5
BENG433	Nanoparticles for Biomedical Applications	3	0	3	5
BENG434	Stem Cell Technology and Regenerative Medicine	3	0	3	5
BENG436	Drug Design and Discovery	3	0	3	5
BENG437	Bioorganic and Medicinal Chemistry	3	0	3	5
BENG438	Introduction to Bionanotechnology	3	0	3	5
MBG 415	Cell and Tissue Engineering	3	0	3	5
<i>Bioengineering B: Genetics and Bioprocess Engineering</i>					
Code	Course Name	Lec.	Lab	Credits	ECTS
BENG 310	Recombinant DNA Technology	3	0	3	5
MBG 402	Computational Biology	3	0	3	5
MBG 403	Human Genetic Disorders	3	0	3	5
MBG 405	Molecular Evolution	3	0	3	5
MBG 406	Molecular Medicine	3	0	3	5
MBG 407	Stem Cells	3	0	3	5
MBG 408	Biomolecules	3	0	3	5
MBG 409	Cancer Biology	3	0	3	5
MBG 410	Micro Array Data Analysis	3	0	3	5
MBG 411	Model Organisms	3	0	3	5
MBG 412	Immunology	3	0	3	5
MBG 413	Biotechnology	3	0	3	5
MBG 416	Developmental Biology	3	0	3	5
MBG 417	Basics of Neuroscience	3	0	3	5
MBG 418	Neural system	3	0	3	5
MBG 419	Functional Genomics	3	0	3	5
MBG 421	RNA Biology	3	0	3	5
MBG 425	Population Genetics	3	0	3	5
MBG 426	Histology of Tumors	3	0	3	5
MBG 428	Epigenetics	3	0	3	5
MBG 430	Virology	3	0	3	5
MBG 431	Human Physiology	3	0	3	5
BENG 435	Separation Techniques	3	0	3	5
MBG 435	Disease and Genetics	3	0	3	5
BENG439	Metabolic Engineering	3	0	3	5
<i>Bioengineering C: Biomedical Electronics</i>					

Code	Course Name	Lec.	Lab	Credits	ECTS
BENG 306	Bioinstrumentation	3	0	3	5
BENG 307	Biomedical Sensors and Transducers	3	0	3	5
BENG 308	Microprocessors and Microcontrollers in Biomedical Engineering	3	0	3	5
BENG410	Biomedical Signals and Systems	3	0	3	5
BENG411	Cardiovascular Engineering	3	0	3	5
BENG412	Numerical Methods for Biomedical Engineering	3	0	3	5
BENG413	Neural Engineering	3	0	3	5
BENG414	Biomechatronics	3	0	3	5
BENG415	Clinical Engineering	3	0	3	5
BENG416	Biophotonics	3	0	3	5
BENG418	Machine Learning	3	0	3	5
BENG419	Fundamental of BioMEMS	3	0	3	5
BENG421	Biomedical Image Processing	3	0	3	5
BENG422	Biomedical Signal Processing	3	0	3	5
BENG423	Medical Imaging Systems				
OTHER AREA ELECTIVES					
BENG443	Regulations and IP Rights in Bioengineering	3	0	3	5
BENG441	Scientific Writing and Understanding	3	0	3	5
BENG442	Entrepreneurship in Bioengineering	3	0	3	5
XBEN445	Technical Transfer Elective	3	0	3	5
XBEN446	Technical Transfer Elective	3	0	3	5
XBEN447	General Transfer Elective	3	0	3	5
BENX131	Digital Learning Platform Transfer Elective 1	1	0	1	3
BENX132	Digital Learning Platform Transfer Elective 2	1	0	1	3
BENX141	Digital Learning Platform Basic Level Transfer Elective 1	1	0	1	4
BENX142	Digital Learning Platform Basic Level Transfer Elective 2	1	0	1	4
BENX151	Digital Learning Platform Advanced Transfer Elective 1	1	0	1	5
BENX152	Digital Learning Platform Advanced Transfers Elective 2	1	0	1	5

GLB Electives

GLB 102	Innovation and Entrepreneurship	3	0	3	4
GLB 201	Food and Health	3	0	3	4
GLB 202	Immigration and Population	3	0	3	4
GLB 301	Sustainability	3	0	3	4

Non-technical Electives

Teknik olmayan seçmeli dersler	
Ders Kodu	Ders Adı
JPN 101	Japanese I
KRN 101	Korean Language I
CHN 101	Chinese I
WTC 101	Weight Training and Conditioning
EDU 101	Creative Drama
ECON 222	Economics for Engineers
ECON 340	Industrial Organization
ECON 341	Turkish Economy
ECON 343	Economy of the Middle East
ECON 349	Introduction to Financial Engineering
ECON 350	Experimental Economics
ECON 417	Institutional Economics
ECON 442	Game Theory
ECON 345	Behavioral Economics
ECON 348	Culture and Economy
ECON 407	Financial Markets and Institutions
BA 430	Tourism Management
BA 432	Modern Banking
BA 434	Decision Making
BA 438	Modern Manufacturing System
BA 125	Business Communications
BA 403	Business Ethics and Corporate Social Responsibility
BA 415	Cost Accounting
BA 433	Supply Chain Management
BA 435	SME Finance
BA 439	Global Marketing
BA 301	Organizational Behaviour
ARCH 112	Media Literacy
ARCH 122	Materials & Behaviors
ARCH 132	Architectural History & Theory 1
ARCH 224	Structures 2
ARCH 232	Architectural History & Theory 3
ARCG 106	Arts & Crafts
ARCG 303	Anatolian Cities in History
ARCG 304	Civilizations & Cities
ARCG 305	Accessible City
ARCD 101	Digital Fabrication
ARCD 102	Site Analysis
ARCG 104	Photography
ARCD 106	Product Design & Fabrication

ARCD 305	Traditional Housing Culture in Anatolia
ARCG 105	Model Making
ARCD 103	Design Methods and Praxis
ARCA 101	Experimental Design Studio
ARCH 512	Fictional Space
ARCH 634	Modern Social Theory
SOC 101	Introduction to Social Science
SOC 402	The City & Literature
POLS 391	Topics in International Relations
PSY 202	Psychology for Everyday Life
SOC 101	Introduction to Social Science
BENG 526	Basic Patent Principles in Science and Engineering
FRE 101	French I
FRE 102	French II
RUS 101	Basic Russian I
ESP 101	Spanish
EDU 201	You are What You Dream of
BA 203	Marketing Management
BA 429	Technology Management
BA 344	Consumer Behavior
BA 346	Basic Principles of Patent Practice
BA 311	Globalization and International Business
ARCD 301	Playing with the Past
ARCG 103	Bicycle and the City
ARCG 112	Applied Fine Arts
ARCG 103	Architectural Image and Materials
ARCH 371	Graphic Design
SOC 373	Health and Politics
POLS 312	History and the Politics of EU
POLS 322	Global Political Economy
POLS 371	International Migration
MSNE 350	Innovation and Technology Commercialization for Entrepreneur Engineers
MSNE 455	Waste Treatment and Recycling
FLE 181	Introduction to Russian Language and Culture