SAĞLIK
BİLİMLERİ
ENSTİTÜSÜ

Gazi University Institute of Health Sciences
Department of Biophysics
Graduate Education Presentation

History of the Department of Biophysics

In 1989, the Department of Biophysics was established in Gazi University Faculty of Medicine, Department of Basic Medical Sciences and started to offer undergraduate courses in the Faculty of Medicine.

In 1989, at the same time, with the opening of the Master's program with thesis in the Department of Biophysics of the Faculty of Medicine within the Gazi University Institute of Health Sciences, Master's education was also started.

In the fall semester of the 1993-1994 academic year, PhD education started with the opening of the PhD program in the Department of Biophysics of the Faculty of Medicine within the Gazi University Institute of Health Sciences.

Today, the Department of Biophysics, which has contributed to the training of 10 Biophysics Specialists (MSc) and 16 Biophysics (PhD) Doctors, continues to work with its competent staff including 6 Faculty Members and 1 Research Assistant.

Mission of the Department of Biophysics

- The Department of Biophysics has been successfully representing our faculty in national and international scientific platforms with its studies in the field of ***"Health and Biological Effects and Mechanisms of Electromagnetic Fields"*** for more than 30 years.
- In the Department of Biophysics, which closely follows scientific developments, it is aimed to contribute to social life with scientific studies.
- It is aimed to establish the academic structure of the Department of Biophysics by faculty members / staff in accordance with the criteria of the Department and to ensure the continuity of this culture.

Vision of the Department of Biophysics

- Within the scope of the application of the rules of physics, which form the basis of many knowledge in the field of medicine, to the biological system; to present current Biophysics information to students within the framework of the Education and Training program and to train questioning physicians
- Raising social awareness on **"Health and Biological Effects of Electromagnetic Fields"**, sharing competence, knowledge and experiences in national and international scientific platforms

Vision of the Department of Biophysics

- To train scientists who are open and forward-thinking, who attach importance to social values, who are competent in professional and technical fields, and who are experts with an inquiry-based graduate education model
- To maintain the institutional identity of the Department of Biophysics, to ensure that the academic and administrative functioning is free from individual and managerial influences

Indispensable Values of the Department of Biophysics

In line with the fundamental principles of our Republic and constitutional rights;

- Respecting human rights
- Being honest and trustworthy
- To have a sense of justice
- To be able to act with respect and tolerance
- To have academic and ethical values
- To act in line with the principle of transparency

Indispensable Values of the Department of Biophysics

- To have leadership qualities
- Having academic distinction
- Being open to cooperation
- Become a team member
- Believing in the leadership of science, glorifying scientific freedom, believing in science and analytical thinking
- To maintain its existence as a creative and innovative institution

Academic Staff of the Department of Biophysics

FACULTY MEMBERS

Prof. Dr. Göknur GÜLER ÖZTÜRK (Head of the USA)

Prof. Dr. Bahriye SIRAV ARAL

Prof. Dr. Elçin ÖZGÜR BÜYÜKATALAY

Prof. Dr. Meriç Arda ESMEKAYA

Assoc. Prof. Dr. Onur INAM

Assist. Prof. Arın TOMRUK

ASSISTANTS

Enis Taha ÖZKAN

Research Areas

- Non-ionizing radiation standards (ICNIRP, IEEE, FCC, Cenelec, Turkey / TK-Telecommunication-Kurumu, Italy, Canada and China)
- Measurement Systems: ELF, MW and IR measurements
- Exposure System design

Electromagnetic Fields (ELF, RF-MW, UV and IR fields) and Biological Effects

- Accelerating the healing of skin wounds with Low Intensity Constant Current (LIDC)
- Oxidative stress
- Apoptosis
- Detection of oxidative DNA damage
- DNA break detection with Comet Assay method
- Cell and Mitochondria Membrane Potential determination
- Quantification of hydroxyproline in various tissues
- Electroporation - Electrochemotherapy
- Nanoparticle studies: nanoparticle MW field interaction and hyperthermia
- Interaction of ferromagnetic nanoparticles with EM fields

Research Opportunities
(**Bioelectromagnetics Laboratory Infrastructure)**

For RF, UV and ELF EM Field Exposure;

- Vector Signal Generator
- Spectrum Analyzer
- Signal generators (2 function generators)
- Horn Antennas (2 pcs)
- Oscilloscope (2 pieces)
- Upright function generator
- CO2 incubator (specially designed for exposure system)
- In vitro RF exposure system for cell culture (Patent obtained. **Invention Registration No:** 2016 12016 B, **First Registration date**: 22.07.2019)
- In vitro magnetic field exposure system (1 unit, custom-made)
- In vivo magnetic field system (4 units, custom-made)
- Power supplies (8 units, custom made)
- Gaussmeter
- UV Meter and UV Exposure System (custom made)

Research Opportunities
(**Bioelectromagnetics Laboratory Infrastructure)**

Simulation (for RF Exposure System design, determination of Specific Absorption Rate (SAR), RF Dosimetry, Genetic programming and neural network studies)

- Simulation Computer (2 pcs)
- Power supply (2 units, uninterruptible)

Research Opportunities
(**Tissue Analysis Laboratory Infrastructure)**

- Precision Balance
- Tissue Homogenizers
- Table Top Refrigerated Centrifuge

Number of Quotas for 2025-2026 Spring Semester

QUORUM			SCORE TYPE	PROGRAM TYPE	SCORE CRITERIA		
Master's Degree	PhD	FOREIGN NATIONAL			ALES SCORE / *TUS*	FOREIGN LANGUAGE SCORE	GRADUATION GRADE (UNDERGRADUATE/ MD)
2	2		SAY	MD	70	60	2.5
				PhD	70	60	3

Program Admission Requirements Master's Degree

YÜKSEK LİSANS PROGRAMI	
PROGRAM KODBID NUMARASI	PROGRAM ADI
2903	Fizik (Fen Edebiyat Fak.)
2124	Biyoloji (Fen Edebiyat Fak.)
3743	Kimya (Fen Edebiyat Fak.)
4203	MOLEKÜLER BİYOLOJİ
4207	MOLEKÜLER BİYOLOJİ VE GENETİK
7174	MOLEKÜLER BİYOLOJİ, GENETİK VE BİYOMÜHENDİSLİK
8397	KİMYA-FİZİK
3759	KİMYAGERLİK
3749	KİMYA MÜHENDİSLİĞİ
3750	KİMYA MÜHENDİSLİĞİ VE UYGULAMALI KİMYA
3754	KİMYA VE BİYOLOJİ MÜHENDİSLİĞİ
3047	GENETİK VE BİYOMÜHENDİSLİK
8407	GENETİK VE YAŞAM BİLİMLERİ PROGRAMLARI
2906	FİZİK MÜHENDİSLİĞİ
2675	ELEKTRONİK VE HABERLEŞME MÜHENDİSLİĞİ
2644	ELEKTRİK-ELEKTRONİK MÜHENDİSLİĞİ
2637	ELEKTRİK MÜHENDİSLİĞİ
2544	ECZACILIK
2490	DİŞ HEKİMLİĞİ

Program Admission Requirements Master's Degree

2270	ÇEVRE MÜHENDİSLİĞİ
2135	BİYOMEDİKAL MÜHENDİSLİĞİ
2144	BİYOMÜHENDİSLİK
2148	BİYOSİSTEM MÜHENDİSLİĞİ
2150	BİYOTEKNOLOJİ
2154	BİYOTEKNOLOJİ VE MOLEKÜLER BİYOLOJİ
2095	BİYOENFORMATİK VE GENETİK
2116	BİYOKİMYA (FEN, FEN-EDEBİYAT F, TEMEL B.F.)
2038	BİLGİSAYAR VE YAZILIM MÜHENDİSLİĞİ
2059	BİLİŞİM SİSTEMLERİ MÜHENDİSLİĞİ
2010	BİLGİSAYAR MÜHENDİSLİĞİ
4297	NANOBİLİM VE NANOTEKNOLOJİ
4300	NANOTEKNOLOJİ MÜHENDİSLİĞİ
4333	NÜKLEER ENERJİ MÜHENDİSLİĞİ
5238	TELEKOMÜNİKASYON MÜHENDİSLİĞİ
5281	TEMEL TIP BİLİMLERİ (TIP)
5322	TIBBİ BİYOLOJİK BİLİMLER
5370	TIP
5382	TIP MÜHENDİSLİĞİ
7371	VETERİNER
5719	VETERİNERLİK
5821	YAZILIM MÜHENDİSLİĞİ

Program Admission Requirements PhD

DOKTORA PROGRAMI	
PROGRAM KODBID NUMARASI	PROGRAM ADI
2101	BİYOFİZİK (TIP)
2903	FIZIK (FEN EDEBIYAT FAK.)
2124	BIYOLOJI (FEN EDEBIYAT FAK.)
3743	KIMYA (FEN EDEBIYAT FAK.)
4203	MOLEKÜLER BİYOLOJİ
4207	MOLEKÜLER BİYOLOJİ VE GENETİK
7174	MOLEKÜLER BİYOLOJİ, GENETİK VE BİYOMÜHENDİSLİK
8397	KİMYA-FİZİK
3759	KİMYAGERLİK
3749	KİMYA MÜHENDİSLİĞİ
3750	KİMYA MÜHENDİSLİĞİ VE UYGULAMALI KİMYA
3754	KİMYA VE BİYOLOJİ MÜHENDİSLİĞİ
3220	HAVACILIK VE UZAY MÜHENDİSLİĞİ
3047	GENETİK VE BİYOMÜHENDİSLİK
8407	GENETİK VE YAŞAM BİLİMLERİ PROGRAMLARI
2654	~~Elektromanyetik dalgalar ve Mikrodalga tekniği~~
3010	~~Genel biyoloji~~
7174	~~Moleküler Biyoloji, Genetik ve Biyomühendislik~~

Program Admission Requirements PhD

3754	~~Kimya ve Biyoloji Mühendisliği~~
4203	~~Moleküler biyoloji~~
3015	~~Genel fizik~~
4685	~~Radyasyon Fiziği ve Uygulamaları~~
2906	FİZİK MÜHENDİSLİĞİ
2769	ENFORMASYON TEKNOLOJİLERİ
2704	ENDÜSTRİ MÜHENDİSLİĞİ
2675	ELEKTRONİK VE HABERLEŞME MÜHENDİSLİĞİ
2644	ELEKTRİK-ELEKTRONİK MÜHENDİSLİĞİ
2637	ELEKTRİK MÜHENDİSLİĞİ
2677	ELEKTRONÖROFİZYOLOJİ
2544	ECZACILIK
2490	DİŞ HEKİMLİĞİ
2270	ÇEVRE MÜHENDİSLİĞİ
2135	BİYOMEDİKAL MÜHENDİSLİĞİ
2144	BİYOMÜHENDİSLİK
2148	BİYOSİSTEM MÜHENDİSLİĞİ
2150	BİYOTEKNOLOJİ
2154	BİYOTEKNOLOJİ VE MOLEKÜLER BİYOLOJİ
2095	BİYOENFORMATİK VE GENETİK
2116	BİYOKİMYA (FEN, FEN-EDEBİYAT F, TEMEL B.F.)

Program Admission Requirements PhD

2038	BİLGİSAYAR VE YAZILIM MÜHENDİSLİĞİ
2059	BİLİŞİM SİSTEMLERİ MÜHENDİSLİĞİ
2010	BİLGİSAYAR MÜHENDİSLİĞİ
2089	BİYO VE NANO TEKNOLOJİ MÜHENDİSLİĞİ
4297	NANOBİLİM VE NANOTEKNOLOJİ
4300	NANOTEKNOLOJİ MÜHENDİSLİĞİ
4333	NÜKLEER ENERJİ MÜHENDİSLİĞİ
5238	TELEKOMÜNİKASYON MÜHENDİSLİĞİ
5281	TEMEL TIP BİLİMLERİ (TIP)
5322	TIBBİ BİYOLOJİK BİLİMLER
5370	TIP
5382	TIP MÜHENDİSLİĞİ
7371	VETERİNER
5719	VETERİNERLİK
5821	YAZILIM MÜHENDİSLİĞİ

Graduate Students in the Department of Biophysics

Students Enrolled in Doctoral Program

Surname	Name	Faculty	Program	1st Counselor
Tönge	Çağhan	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Meriç Arda EŞMEKAYA
Narin	Gözde	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Meriç Arda EŞMEKAYA
Garip	Beyazıt	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Meriç Arda EŞMEKAYA
Özdemir	Nurhan	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Bahriye ARAL
Özmen	Gül Bayramiye	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Bahriye ARAL
Yardım	Armağan	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Bahriye ARAL
Çoşkun	Nur	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Bahriye ARAL
Kurt	Saliha	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Bahriye ARAL
Özkan	Enis Taha	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Bahriye ARAL
Günay	Sevilay	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Bahriye ARAL
Kormaz	Fehim	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Elçin Özgür BÜYÜKATALAY
Taşpınar Şimşek	Elif	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Elçin Özgür BÜYÜKATALAY
Erdem	Gökhan	Institute of Health Sciences	Biophysics (PhD)	Prof. Dr. Elçin Özgür BÜYÜKATALAY
Ergin	Sedat	Institute of Health Sciences	Biophysics (PhD)	Assist. Prof. Arın TOMRUK
Al Mustafa	Ehsan	Institute of Health Sciences	Biophysics (MD)	Prof. Dr. Meriç Arda EŞMEKAYA