

**2015-2016 Güz ve Bahar Eğitim-Öğretim Yılı Biyofizik Anabilim Dalı**  
**İngilizce Dönem I Ders İçeriği**

**1<sup>ST</sup> YEAR**

**From Molecule to Cell – I (13 saat)**

<b>Dersin Adı</b>	<b>Öğretim Üyesi</b>	<b>Ders Saati</b>
Interdisciplinary Sciences and Biophysics	Dr. N. Seyhan- Dr. Sırav Aral	2 Sa
Electric Charge, Electric Force, Electric Field (E), Electric Potential and Potential Energy, Capacity	Dr. A. Canseven Kurşun – Dr. Eşmekaya	3 Sa
E current, DC & AC properties	Dr. A. Canseven Kurşun – Dr. Eşmekaya	1 Sa
Magnetic Field	Dr. A. Canseven Kurşun – Dr. Eşmekaya	1 Sa
Depolarization of Heart Muscle Cells, Electrical Axis and Dipole Moment Vector of The Heart, Einthoven Triangle and Determination of the Potential Difference in Heart's Dipole Area	Dr. A. Canseven Kurşun - Dr. Eşmekaya	4 Sa
Active and Passive transducers, usage of transducers in medicine	Dr. Sırav Aral	1 Sa
Laser in Medicine	Dr. Sırav Aral	1 Sa

**From Molecule to Cell – II (10 saat)**

<b>Dersin Adı</b>	<b>Öğretim Üyesi</b>	<b>Ders Saati</b>
Electromagnetic (EM) Pollution Electromagnetic Spectrum, Natural and Man Made Sources of EM Pollution	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat
Biological Effects of Extremely Low Frequency (ELF) E and B fields: Epidemiologic and Experimental Studies, E Field and B Field Studies at Gazi Biophysics Dept.	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat
Biological Effects of RF/ MW Radiation International EM Field Standards for EM Radiation Protection: General Public and Occupational Exposure Standards Practical Measures for EM Radiation Protection	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat

Ionizing Radiation	Yrd. Doç. Dr. Bahriye Sırav Aral	2 saat
Protection Methods for Ionizing Radiation	Yrd. Doç. Dr. Bahriye Sırav Aral	2 saat

### **Cell Biology Sciences Committee (15 saat)**

<b>Dersin Adı</b>	<b>Öğretim Üyesi</b>	<b>Ders Saati</b>
Membranes and Electrical Properties of Cells, Electrical Equivalent Cell Models	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat
Reason of Biological Potential Difference: Asymmetry	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat
Evaluation of Cell Potential: Nernst, Goldman, Hodgkin-Katz and Hodgkin Huxley Models and Calculation of Ion currents	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat
Sound, physical characteristics and formation of sound Ultrasound formation and piezoelectric phenomenon Use of Ultrasound in Medicine	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat
Piezoelectric structures in tissues, Recovery of bone break, Invasive and non-invasive techniques	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat
Biophysical explanation for selective permeability – BORN barrier	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat
Membrane potential for mitochondria	Dr. A. Canseven Kurşun – Dr. Eşmekaya	1 saat
Membrane potential for healthfull and cancer cells and electrical properties of cancer cells	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat

### **Tissue Biology Committe (8 saat)**

<b>Dersin Adı</b>	<b>Öğretim Üyesi</b>	<b>Ders Saati</b>
Electrophoresis	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat
Electroporation	Dr. A. Canseven Kurşun – Dr. Eşmekaya	2 saat
Bioelectrical applications	Dr. A. Canseven Kurşun – Dr. Eşmekaya	4 saat