CELL PHYSIOLOGY

1	Course Title:	CELL PHYSIOLOGY
2	Course Code:	BYL4019
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	4
6	Semester:	7
7	ECTS Credits Allocated:	4.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç. Dr. EGEMEN DERE
15	Course Lecturers:	Prof. Dr. Ferda ARI
16	Contact information of the Course Coordinator:	Doç. Dr. Egemen DERE Bursa Uludağ Üniversitesi Fen Ed. Fak Biyoloji Bl. Moleküler Biyoloji Anabilim Dalı Tel: 0 224 41792 edere@uludag.edu.tr BUrsa Uludag University Faculty of Arts and Science Department of Biology/ branch of science of Molecular Biology Gorukle Campus, Nilufer/BURSA 16059 e-mail: edere@uludag.edu.tr Phone: 0 (224) 294 1792
17	Website:	
18	Objective of the Course:	Aim of the course is to understand individual functions of different cell and tissues and integration. Goal of the course; chemical, physical and physiological capabilities of the cell tissues and organs as ways to explain how they work in harmony.
19	Contribution of the Course to Professional Development:	Students who are successful in this course understand the physical and biochemical abilities of cells. Understands that disruption in communication between cells can cause various health problems.
20	Learning Outcomes:	

	1	To identify the cell from physiological aspect
	2	To understand the signaling mechanism inside the cell
	3	To be able to compare the cell-environment interaction in different living beings
	4	To comprehend the effects of stimulus on receptors
	5	To comprehend the significancy of cell movement for living beings
	6	To comprehend the different characteristics of a cancer cell
	7	To understand the importance of stem cells
	8	
	9	
	10	

21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Terminology of physiology (solutions, dialysis, osmosis, turgor…) the regulation of endomembrane capacity of freshwater and saltwater living beings	
2	The structure of cell membrane, differentiation of cell surface, secondary hormones (cAMP)	
3	The relationship between cell and its environment, transport events, passive transport (simple diffusion, facilitated transport, Transport systems in bacteria, transport proteins, canal proteins, diffusion through pores	
4	Uniport, symport, antiport, endocytosis, exocytosis. Active transport (Na-K-ATPase, Ca++ pump)	
5	Transport of glucose, amino acid, and proteins	
6	The structure, variety, and function of a nerve cell, saltatorial transmission of nerves	
7	Exam and answer of examination questions, general discussion	
8	Action potential, membrane potential, Gibbs-Donnan membrane equilibrium, protection of action potential, depolarization, hyperpolarization, repolarization.	
9	Rage of threshold, refractory period, handling of signaling. Synapsis (Chemical synapsis, excitatory synapsis, prophylactic synapsis)	
10	Receptors (classification, the properties of receptor potential, adaptation) Miniature end plate potential, chemoreceptors-palate	
11	Mechanoreceptors (neuromasts, balancing organs, hearing), photoreceptors (seeing)	
12	Movements (Protoplasmatic movement, ameoboid movement, action of cill and flagella, muscle “smooth and striated” contraction)	
13	Cardiac muscle, blood physiology, erythropoiesis	
14	Cancer, cell death, and the markers of cancer	

22	Textbooks, References and/or Other Materials:	Cell Physiology (Prof Dr. Orhan ANDAÇ) Medikal Physiology (Guyton ve Hall) Physiology (Prof Dr. Ahmet NOYAN)
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	20.00
Quiz	0	0.00
Home work-project	1	20.00
Final Exam	1	60.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00

Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	Exams are conducted in test and classic form. Each student makes statements about himself. Takes oral and homework grades.

24 ECTS / WORK LOAD TABLE

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	4	6.00	24.00
Homeworks	14	1.00	14.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	3.00	3.00
Others	8	6.00	48.00
Final Exams	1	3.00	3.00
Total Work Load			120.00
Total work load/ 30 hr			4.00
ECTS Credit of the Course			4.00

25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS

	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	4	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0
ÖK2	4	0	0	3	0	5	0	0	0	0	0	0	0	0	0	0
ÖK3	1	0	2	3	0	5	0	0	0	0	0	0	0	0	0	0
ÖK4	2	0	3	2	0	4	0	0	0	0	0	0	0	0	0	0
ÖK5	2	0	2	2	0	4	0	0	0	0	0	0	0	0	0	0
ÖK6	2	0	2	2	0	4	0	0	0	0	0	0	0	0	0	0
ÖK7	5	0	2	3	0	4	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	1 very low	2 low	3 Medium	4 High	5 Very High