

CELL CYCLE AND APOPTOSIS

1	Course Title:	CELL CYCLE AND APOPTOSIS	
2	Course Code:	VHE 6007	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	5.00	
8	Theoretical (hour/week):	1.00	
9	Practice (hour/week):	2.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. BERRIN ZIK	
15	Course Lecturers:	Prof. Dr. Hatice Erdost.	
16	Contact information of the Course Coordinator:	bzik@uludag.edu.tr Uludağ Ünv. Veteriner Fak. Histoloji Embriyoloji Anabilim Dalı	
17	Website:	http://www.veteriner.uludag.edu.tr	
18	Objective of the Course:	Learn cell division and mechanism of physiological cell death	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Learn the importance of cell cycle
		2	Learn control mechanism of cell cycle.
		3	Learn to role in tumor formation of cell cycle
		4	Learn Synchronization of cell cultures
		5	Learn cell cycle checkpoint
		6	Learning role of tumor suppressor in cell cycle
		7	Learn the importance of apoptosis in embryology
		8	Learn the mechanism of apoptosis
		9	Learn role of apoptosis in cancer
		10	Learn the difference between apoptosis and necrosis
21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	The cell divide: mitosis and meiosis	Examine the mitosis phases	
2	Phases of cell cycle	Taking tissues and fixation	
3	Growth factors and D cyclins	Paraffine blocking	
4	Cell cycle restriction points and checkpoints	Taking tissue sections	
5	Role of Cyclins and Cyclin-dependent kinases	Applying immunohistochemistry procedure	
6	Cell cycle inhibitors	Incubation with antibody	
7	Determination of cell cycle phases	Incubation with seconder antibody	

8	Identification and history of apoptosis	TUNEL procedure
9	The properties of Apoptosis and Necrosis	Incubation tissues with enzyme
10	Apoptosis Inducing Factors	Examination with fluorescent microscope
11	Apoptotic mechanisms, caspases and structure of caspases	Examination with light microscope
12	Apoptotic pathway basics: extrinsic and intrinsic pathway	Incubation with Caspases antibody
13	Inhibitors of apoptosis	Examination with fluorescent and light microscope
14	Determination of apoptosis	Troubleshooting

22	Textbooks, References and/or Other Materials:	<p>1.Schwartz, MD Cell Death and the Caspase Cascade Circulation. 1998; 97:227-229</p> <p>2.Ulukaya E Apoptosis ders notları U.Ü. Biyokimya ABD</p> <p>3. Schimmer AD Inhibitor of apoptosis proteins: translating basic knowledge into clinical practice. Cancer res. 2004 Oct 15;64(20):7183-90.</p> <p>4. ÖZER A.. Temel Histoloji. Nobel Yayın Sanayi Ltd Şti, Bursa, 2011.</p>
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23	Assesment
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TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	0	0.00
Quiz	0	0.00
Home work-project	1	25.00
Final Exam	1	75.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		25.00
Contribution of Final Exam to Success Grade		75.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		

24	ECTS / WORK LOAD TABLE
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Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	1.00	14.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	2.00	28.00
Homeworks	1	40.00	40.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	40.00	40.00
Total Work Load			150.00
Total work load/ 30 hr			5.00
ECTS Credit of the Course			5.00

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	5	4	4	5	5	5	5	4	4	5	5	0	0	0	0	0
ÖK2	5	4	4	5	5	5	5	4	4	5	5	0	0	0	0	0
ÖK3	5	4	4	5	5	5	5	4	4	5	5	0	0	0	0	0
ÖK4	5	4	4	5	5	5	5	4	4	5	5	0	0	0	0	0
ÖK5	5	4	4	5	5	5	5	4	4	5	5	0	0	0	0	0
ÖK6	5	4	4	5	5	5	5	4	4	5	5	0	0	0	0	0
ÖK7	5	4	4	5	5	5	5	4	4	5	5	0	0	0	0	0
ÖK8	5	4	4	5	5	5	5	4	4	5	5	0	0	0	0	0
ÖK9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK10	0	0	0	0	0	0	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			