

# ANIMAL CELL CULTURE

<b>1</b>	Course Title:	ANIMAL CELL CULTURE	
<b>2</b>	Course Code:	BIO5402	
<b>3</b>	Type of Course:	Optional	
<b>4</b>	Level of Course:	Second Cycle	
<b>5</b>	Year of Study:	1	
<b>6</b>	Semester:	2	
<b>7</b>	ECTS Credits Allocated:	6.00	
<b>8</b>	Theoretical (hour/week):	3.00	
<b>9</b>	Practice (hour/week):	0.00	
<b>10</b>	Laboratory (hour/week):	0	
<b>11</b>	Prerequisites:	None	
<b>12</b>	Language:	Turkish	
<b>13</b>	Mode of Delivery:	Face to face	
<b>14</b>	Course Coordinator:	Prof. Dr. FERDA ARI	
<b>15</b>	Course Lecturers:		
<b>16</b>	Contact information of the Course Coordinator:	Prof Dr. Ferda ARI Bursa Uludağ Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü 16059 Nilüfer/BURSA Tlf: 0 224 294 1822 e-posta: ferdaoz@uludag.edu.tr	
<b>17</b>	Website:		
<b>18</b>	Objective of the Course:	The aim and objectives of the course is studying the features of tissue and cell cultures, preparing cell cultures, special techniques and applications	
<b>19</b>	Contribution of the Course to Professional Development:	The lessons learned in this course will enable students to apply cell techniques in laboratories such as molecular biology, biochemistry and genetics where they can work.	
<b>20</b>	Learning Outcomes:		
		<b>1</b>	Able to learn and apply the principles of cell culture
		<b>2</b>	Understanding the needs of the cell culture and equipment
		<b>3</b>	Determine the viability of cells in different ways
		<b>4</b>	Understand cell death pathways
		<b>5</b>	Comprehend gene and blotting analysis in cell culture
		<b>6</b>	
		<b>7</b>	
		<b>8</b>	
		<b>9</b>	
		<b>10</b>	
<b>21</b>	Course Content:		
		<b>Course Content:</b>	
<b>Week</b>	<b>Theoretical</b>	<b>Practice</b>	
<b>1</b>	Tissue and cell culture, basic definitions and concepts		
<b>2</b>	Labrotuvar properties of cell culture, introducing the necessary equipment and materials.		

3	The use of laminar flow cabinet, the use of CO2 incubator, regulation of the cell culture chamber	
4	General techniques in cell culture: Definition of cell types	
5	Contamination and Sterilization in Cell Cultures	
6	Cell freezing and thawing techniques	
7	Cell counting methods, planting methods and the passage	
8	Cell counting and cultivation methods	
9	Viability tests in cells SRB, MTT, XTT test ATP and Trypan blue tests	
10	Analyzes for the Determination of Apoptosis in Cell Culture	
11	Analysis for Determination of Necrosis in Cell Culture	
12	Analysis for the Determination of Autophagy in Cell Culture	
13	Gene analysis in Cell Culture	
14	Western Blot analysis methods in Cell Culture	

22	Textbooks, References and/or Other Materials:	Recent papers Introduction to Cell and Tissue Culture: Theory and Techniques (Leslie P. Motter, Douglas F. Roberts)
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Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
22 Assessment			
Practicals/Labs	0	0.00	0.00
Self study and preperation	R	14	84.00
Homeworks	3	15.00	45.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Mid Exams	1	6.00	6.00
Others	0	0.00	0.00
Contribution of Term (Year) Learning Activities to Success Grade	4	10.00	10.00
Total Work Load			181.00
Contribution of Final Exam to Success Grade	60.00		6.03
Total work load/ 30 hr			6.03
ECTS Credit of the Course			6.00

Measurement and Evaluation Techniques Used in the Course	The system of relative evaluation is applied
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<b>24</b>	<b>ECTS / WORK LOAD TABLE</b>
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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	4	4	3	3	5	5	3	4	0	0	0	0	0	0	0
ÖK2	4	3	4	3	3	5	5	3	4	0	0	0	0	0	0	0
ÖK3	3	2	3	2	2	4	4	2	3	0	0	0	0	0	0	0

<b>ÖK4</b>	3	2	3	2	2	4	4	2	3	0	0	0	0	0	0	0
<b>ÖK5</b>	3	2	3	2	2	4	4	2	3	0	0	0	0	0	0	0
<b>LO: Learning Objectives    PQ: Program Qualifications</b>																
<b>Contribution Level:</b>	<b>1 very low</b>		<b>2 low</b>		<b>3 Medium</b>			<b>4 High</b>			<b>5 Very High</b>					