



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Cell and Tissue Culture Techniques							
Course Code		BYK601		Couese Level		Third Cycle (Doctorate Degree)			
ECTS Credit	5	Workload	125 (<i>Hours</i>)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		To have knowledge about cell culture properties, preparation of materials, special techniques, and cell culture applications.							
Course Content		Primary cultures, short-and long-term cultures. Cultures care, primary cultures, cell line, defining the concepts of continuous cell lines, changing of the media and cell passages, different purposes culture conditions. Characterization of cells in culture, markers of tissue and concepts of transformation. Staining, microscopy and photography for the morphological evalution purposes. Contamination and types of microbial contamination, contamination detection methods, methods for the determination of mycoplasma contamination, kros contamination and prevention methods.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Demonstration, Discussion, Individual Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Animal Cell Culture: Essential Methods
2	Basic Cell Culture Protocols
3	Basic Cell Culture: J. M. Davis

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to cell culture
2	Theoretical	Cell culture laboratory features and requirements
3	Theoretical	Sterility
	Practice	Sterility
4	Theoretical	Media used in cell culture
	Practice	Preparation of medium
5	Theoretical	Cell culture techniques
6	Theoretical	Primary cell culture
	Practice	Explant cell culture
7	Theoretical	Subculturing and cell counting
	Practice	Subculturing and cell counting
8	Intermediate Exam	Cell and tissue culture techniques midterm
9	Theoretical	Cell Lines
	Practice	Cryopreservation
10	Theoretical	Karyotype analysis in cell culture
	Practice	Karyotype analysis
11	Theoretical	Cytotoxicity analysis I
	Practice	Cytotoxicity analysis
12	Theoretical	Cytotoxicity analysis II
	Practice	Cytotoxicity analysis
13	Theoretical	Apoptosis analysis
	Practice	Apoptosis analysis
14	Theoretical	Cancer cell culture
15	Theoretical	Prenatal cell culture



16	Final Exam	Cell and tissue culture techniques final exam
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Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	1	1	28
Lecture - Practice	14	0.5	4	63
Laboratory	2	3	9	24
Midterm Examination	1	4	1	5
Final Examination	1	4	1	5
Total Workload (Hours)				125
[Total Workload (Hours) / 25*] = ECTS				5
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes	
1	To know the necessary infrastructure of cell culture laboratory
2	Learning why and how cell culture is done
3	Learning the characteristics of culture cells
4	Learning the tools used in culture
5	To know the application areas of cell culture in medical biochemistry

Programme Outcomes (Biochemistry (Medical) Doctorate)	
1	To have basic theoretical knowledge about biochemistry and to help understanding biochemistry
2	To have the basic laboratory knowledge, apparatus and methods used in biochemistry
3	Analysis: To be able to analyze information critically
4	Synthesis: To be able to synthesize and adapt the knowledge in the field from different directions
5	Evaluation: To critically evaluate research in the field

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High					
	L1	L2	L3	L4	L5
P1	5	5	5	5	5
P2	4	4	4	4	5
P3	5	5	4	5	5
P4	4	4	5	4	5
P5	4	5	4	5	4

