AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Biotechnology and Biomedicine								
Course Code	BYK528		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	3	Workload	75 *(Hours)*	Theory	2	Practice	0	Laboratory	0
Objectives of the Course	Obtaining general information about biotechnology and biomedicine								
Course Content	General information about biotechnology, its history and work areas, Biomedical Engineering, Biochemical Engineering and Genetic Engineering: definitions, study subjects, Applications of biomedical engineering, biochemical engineering, and genetic engineering to human health related issues, Biomedical engineering, Biochemical engineering and applications of genetic engineering in agriculture, Biological product market, shapes and design of fermenter for the production of biological products, Production and purification of some important biomaterials for diagnostic and treatment purposes in bioreactors, Polymer applications used in recombinant DNA process, Separation technologies for purification of plasma proteins, Chromatographic methods, Affinity Chromatography, future expectations								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading	
1	Moleküler biyoteknoloji: Bernard R. Glick, Jack J. Pasternak and Cheryl L. Patten (Nov 1, 2009)
2	yeni başlayanlar için biyoteknoloji:Reinhard Renneberg

Week	Weekly Detailed Course Contents	
1	Theoretical	Definition and history of biotechnology and biomedicine
2	Theoretical	Recombinant DNA technology
3	Theoretical	Recombinant DNA technology
4	Theoretical	Gene transfer mechanisms in bacteria
5	Theoretical	Gene transfer to plant and animal cells
6	Theoretical	Cell and tissue culture in plants
7	Theoretical	Cell and tissue culture in animals
8	Intermediate Exam	Quiz
9	Theoretical	Application and application areas of biotechnology and biomedicine
10	Theoretical	Application and application areas of biotechnology and biomedicine
11	Theoretical	Medical biotechnology
12	Theoretical	Agricultural and Industrial biotechnology
13	Theoretical	Environmental biotechnology
14	Theoretical	Food biotechnology
15	Theoretical	Biotechnology-Biomedicine and ethics
16	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	1	3	56
Assignment	1	1	18	19
			Total Workload (Hours)	75
			[Total Workload (Hours) / 25*] = **ECTS**	3
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	To have knowledge about the concept of biotechnology and biomedicine
2	Knowing and using the concepts related to recombinant DNA technology, genetic engineering
3	To have knowledge about cell and tissue culture in plants and animals
4	Learning the application areas of biotechnology and biomedicine
5	To have knowledge about bioethics

Programme Outcomes *(Biochemistry (Medical) Master)*	
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	5	4	4
P4	4	5	5	4	4
P5	4	5	4	5	4