



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title	Special Topics in Food Biotechnology								
Course Code	GMP613		Course Level		Third Cycle (Doctorate Degree)				
ECTS Credit	8	Workload	200 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	The aim of the course is to discuss the defined practices of biotechnology in the field of food. These include microbial biotechnology, rapid identification techniques based on molecular methods, production of enzymes and various biomolecules.								
Course Content	Includes isolation and identification of microorganisms important in the food industry, production of microbial-derived enzymes, fermentation and downstream processes, bioreactors.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion								
Name of Lecturer(s)	Assoc. Prof. Çisem BULUT ALBAYRAK								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	70

Recommended or Required Reading	
1	Molecular Biology and Biotechnology, J.M. WALKER and R. RAPLEY, 2000.

Week	Weekly Detailed Course Contents & Teaching Methods	
1	Theoretical	Introduction to Biotechnology and Molecular Biology
2	Theoretical	Biotechnology and Molecular Biology Techniques and Usage
3	Theoretical	Microbial metabolism, aerobic and anaerobic respiration, fermentation
4	Theoretical	Structure of DNA, recombinant DNA technology and applications, polymerase chain reaction.
5	Theoretical	Microbial reproduction stages
6	Theoretical	Basic steps of biotechnological processes, downstream and upstream processes
7	Theoretical	Formulation and preparation of industrial fermentation media
8	Theoretical	Bacteria used in food biotechnology
9	Theoretical	Mold and yeast used in food biotechnology
10	Theoretical	Enzymes used in food biotechnology
11	Theoretical	Enzymes and biotechnological production and applications
12	Theoretical	Proteins and purification methods I
13	Theoretical	Proteins and purification methods II
14	Theoretical	Bioreactors and types
15	Theoretical	Seminar

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	9	3	168
Midterm Examination	1	15	1	16
Final Examination	1	15	1	16
			Total Workload (Hours)	200
			[Total Workload (Hours) / 25*] = ECTS	8

\*25 hour workload is accepted as 1 ECTS

Learning Outcomes	
1	
2	
3	
4	



5

**Programme Outcomes (Food Engineering Doctorate)**

1	Developing and investigating the details of current and advanced knowledge in the field of Food Engineering by original thought and/or research on the level of expertise based on the graduate qualification and reaching to the original definitions that bring innovation to science.
2	Gain of ability of develop strategies, policies and implementation plans in the field of food engineering and evaluate the results within the framework of quality processes.
3	Gain of ability to perceive, design, evaluate and finish an original process by using and following the knowledge of the recent developments in the engineering fields.
4	Gain of ability of making critical analysis, synthesis and evaluation of ideas and development in food engineering field
5	Having advanced knowledge of food science and its applications based on doctoral level qualifications.

**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	2	2	1	2	1
P2	1	1		1	
P3	2	3	2	3	
P4			2	3	
P5	2		4	4	

