



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Food Fermentation Processes							
Course Code		GMP519		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	200 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Aim of this course is to discuss basic subjects of fermentation technology and evaluate recent developments.							
Course Content		Course cover mainly following subjects; microorganisms used in fermentation,properties, isolation and identification, development and storage, starter cultures, culture collections, fermenters, extraction of products, fermented foods(meat,dairy, fruit and vegetable, cereal),fermented alcoholic drinks, traditional fermented products, functional and probiotic products, microbial enzyme, organic acids, biomass and food additive production.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study, 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	Bamforth, C.W. 2005. Food, Fermentation and Microorganisms, Blackwell Science.
2	McNeil, B., Harvey, L. 2008. Practical Fermentation Technology, Chichester, England ; Hoboken, NJ : Wiley.
3	Erkmen and Bozoğlu. Food Microbiology I-II. 2008, 1 st ed. G.Ü.V. İlke Publishing, ISBN-978-605-5983-13-0

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to fermentation technology.
2	Theoretical	Microorganisms used in fermentation and their properties.
3	Theoretical	Microorganisms used in fermentation –isolation, identification, development and storage
4	Theoretical	Starter cultures and culture collections
5	Theoretical	Fermentation techniques and fermenters
6	Theoretical	Extraction of fermentation products.
7	Intermediate Exam	Midterm exam
8	Theoretical	Fermented dairy products
9	Theoretical	Fermented meat products
10	Theoretical	Fermented cereal products
11	Theoretical	Fermented fruit and vegetable products
12	Theoretical	Fermented alcoholic drinks
13	Theoretical	Functional and probiotic fermented products.
14	Theoretical	Microbial enzyme, organic acid, biomass and food additives production

### 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

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**Programme Outcomes (Food Engineering Master)**

1	To provide further training and research opportunities to food engineers to meet the needs of the food industry
2	To develop and deepen the current and advanced knowledge in the field of food engineering with original thought and / or research at the level of expertise, based on the qualifications of the master
3	To identify, define, formulate and solve problems in applications related to Food Engineering and gain the ability to select and apply appropriate analytical methods and modeling techniques
4	To gain the ability to evaluate the accuracy of the data obtained from food analysis
5	To educate students having research, entrepreneur 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	L6
P1	5	5	5	5	5	5
P2	4	4	4	5	4	5
P3	1	1	1	4	1	1
P4	2	2	2	2	2	2
P5	4	4	4	4	4	4

