

FOOD FERMENTATIONS

1	Course Title:	FOOD FERMENTATIONS
2	Course Code:	GMB6024
3	Type of Course:	Optional
4	Level of Course:	Third Cycle
5	Year of Study:	1
6	Semester:	2
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	none
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç.Dr. ARZU AKPINAR BAYİZİT
15	Course Lecturers:	yok
16	Contact information of the Course Coordinator:	Uludağ Üniversitesi Ziraat Fakültesi Gıda Mühendisliği Bölümü 16059 Görükle/Bursa Tel : 0 224 2941496 Fax : 0 224 2941402 e-posta: abayizit@uludag.edu.tr
17	Website:	
18	Objective of the Course:	The aim of the course is to give theoretical and practical information about the production technology and kinetics of fermented foods.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	
	1	To have knowledge about fermentation principles and production of fermented foods
	2	To comprehend the microorganism that take a part in fermentations
	3	To understand fermenters and fermentation kinetics
	4	To apply distillation and understand the production of distilled alcoholic beverages
	5	To be informed on wine technology
	6	To be informed on brewery technology
	7	To apprehend vinegar technology
	8	To understand and apply pickling, olive processing and bosan production
	9	
	10	
21	Course Content:	
	Course Content:	
Week	Theoretical	Practice

1	Introduction; Definition of Fermentation The Fermentative Microorganisms			
2	Fermentation Methods; Fermentation Kinetics			
3	The Kinetics and Raw Materials of Ethyl Alcohol Fermentation			
4	The Technology of Distilled Alcoholic Spirits either Matured or Unmatured			
5	Liquor Production			
6	Wine Technology			
7	Brewery Technology			
8	The Kinetics and Raw Materials of Lactic, Citric and Other Organic Acid Fermentations			
9	Vinegar Technology			
10	Pickling Technology			
11	Production of Table Olives			
12	Bosan Production			
13	Student Presentations			
14	Student Presentations			
22	Textbooks, References and/or Other Materials:	Food Fermentations (Assist. Prof. Dr. Arzu AKPINAR-BAYİZİT, Ders Notu)		
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical	3	1. HUTKINS, R.W. 2006. Microbiology and Technology of Food Fermentation, Elsevier, 499 p.	3.00	12.00
Practicals/Labs	0		0.00	0.00
Self study and preperation	3	14. AKTAN, N., KALKAN, H. 2000. Şarap Teknolojisi. Kavaklıdere Kültür Yayınları. 615 s.	2.00	28.00
Homeworks	2	10. AKTAN, N., KALKAN, H. 2000. Şarap Üretimi, Yayıncılık, 199 s.	20.00	40.00
Projects	1	Yayınları, No:23, 148 s.	0.00	0.00
Field Studies	0	10. AKTAN, N., KALKAN, H. 2000. Şarap Teknolojisi. Ege Üniversitesi Basımevi, Bornova, 173 s.	0.00	0.00
Midterm exams	7	10. HUI, Y. H. 2006. Handbook of Food Science, Technology, and Engineering, Taylor & Francis, 1000 p.	0.00	0.00
Others	0		0.00	0.00
Final Exams	1	Springer, 297 p.	40.00	40.00
Total Work Load				150.00
Total work load/ 30 hr		10. BOYNUDELİK, M., İREN-BOYNUDELİK, Z. 2007. Zeytinden Zeytinveçine, Ölçek Yayınları, 174 s.	5.00	5.00
ECTS Credit of the Course				6.00
		M.J., ADAMS, M.R. 1997. Table Olives: Production and Processing. Springer, 495 p. 12. KAILIS, S., HARRIS, D. 2007. Producing Table Olives. Landlinks Press, 328 p. 13. AKTAN, N., KALKAN, H. Distile Alkollü İçkiler Teknolojisi. Ege Üniversitesi Basımevi, Bornova, 173 s. 14. AKTAN, N., KALKAN, H. 2000. Şarap Teknolojisi. Kavaklıdere Kültür Yayınları. 615 s. 15. TÜRKER, İ., CANBAŞ, A. 1995. Malt ve Bira Teknolojisi. Çukurova Üniversitesi Ziraat Fakültesi Yayınları No:4, Adana, 16. BAMFORTH, C.W. 2009. Beer: Handbook of Alcoholic Beverages: A Quality Perspective (Handbook of Alcoholic Beverages), Academic Press, 272 p. 17. KILIÇ, O. 1996. Alkollü İçkiler Teknolojisi. Uludağ Üniversitesi Basımevi, Bursa, 236 s.		

23	Assesment	
TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	0	0.00
Quiz	0	0.00
Home work-project	2	50.00
Final Exam	1	50.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		50.00
Contribution of Final Exam to Success Grade		50.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		

24	ECTS / WORK LOAD TABLE															
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	5	5	4	5	5	3	0	0	0	0	0	0	0	0	0
ÖK2	3	4	4	4	5	4	3	0	0	0	0	0	0	0	0	0
ÖK3	5	5	5	4	4	4	3	0	0	0	0	0	0	0	0	0
ÖK4	2	5	4	3	3	3	2	0	0	0	0	0	0	0	0	0
ÖK5	2	5	4	3	3	3	2	0	0	0	0	0	0	0	0	0
ÖK6	2	5	4	3	3	3	2	0	0	0	0	0	0	0	0	0
ÖK7	2	5	4	3	3	3	2	0	0	0	0	0	0	0	0	0
ÖK8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			