



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Novel Food Processing Technologies							
Course Code		GMP511		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	200 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of this course is to make critical discussions on the alternative technologies and strategies, and to address the new challenges facing the food industry by providing specific examples on how these alternatives could be applied to specific food products.							
Course Content		This course includes novel food processing and preservation technologies as well as build on fundamentals. The course is divided among thermal technologies (thermal processing, aseptic processing, ohmic heating, microwave/RF processing etc.), non-thermal technologies (high pressure processing, pulsed electric fields, pulsed UV light, magnetic fields, ultrasound, etc.), supercritical fluid extraction and artificial intelligence in food industry.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)		Lec. Aslı ZUNGUR BASTIOĞLU							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	60
Assignment	1	10
Report	1	10

Recommended or Required Reading

1	Novel Food Processing Technologies, Edited by Gustavo V. Barbosa- Cánovas, María S. Tapia, M. Pilar Cano, CRC Press, 2005.
2	Emerging Technologies for Food Processing, Edited by Da-Wen Sun, Elsevier Academic Press, Amsterdam, 2006.

Week	Weekly Detailed Course Contents	
1	Theoretical	Principles of food preservation
2	Theoretical	Nonthermal technologies in food processing
3	Theoretical	Food irradiation (UV, gamma, X-rays)
4	Theoretical	Pulsed electric field applications
5	Theoretical	Pulsed light applications
6	Theoretical	Advances in high pressure processing of foods
7	Theoretical	Current microwave applications to food processing
8	Theoretical	Ultrasound applications in food industry
9	Theoretical	Advances in ohmic heating and moderate electric field
10	Theoretical	Radio frequency heating in food processing
11	Theoretical	Oscillating magnetic field applications
12	Theoretical	Modified atmosphere packaging and active packaging technologies
13	Theoretical	Supercritical fluid extraction of natural food components
14	Theoretical	Applications of artificial intelligence to food industry

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Assignment	1	28	2	30
Individual Work	1	28	2	30
Midterm Examination	1	29	1	30



Final Examination	1	39	1	40
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 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
P1	3	3	3	3	1
P2	3	4	4	3	
P3	2	5	5	5	
P4	2	2	2	2	
P5	3	4	4	3	

