AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Engineering Properties of Foods						
Course Code		GMP507		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 review of various procedures for measurement and estimation of engineering properties of relevance to the design of food processing operations.						
Course Content		This course includes; physical properties (mass, volüme, area, rheological, microstructure) of foods , thermal and thermodynamic properties, mass transfer properties, physicochemical properties in membran separation process, electrical properties, ultrasound properties, optical properties of foods, and novel measurement techniques for relevant properties.						
Work Placement		N/A						
Planned Learning Activities and Teaching Methods			Explanation (Presentation), Individual Study, Problem Solving					
Name of Lecturer(s)		Prof. Hilal ŞAHİN NADEEM						

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	60
Assignment	2	20

Recommended or Required Reading

1	Engineering properties of foods, Edited by M.A. Rao, Syed S. H. Rizvi, Ashim K. Datta, Jasim Ahmed, 2014, CRC Press.
2	Physical properties of foods: novel measurement techniques and applications, Edited by Ignacio Arana, 2012, CRC Press
3	Serpil Sahin, and Sumnu. Physical properties of Foods. Springer Science + Business Media LLC, USA. 2006.

Week	Weekly Detailed Course Contents	
1	Theoretical	Mass, volume, area related properties of foods
2	Theoretical	Food microstructure analysis
3	Theoretical	Textural and rheological properties of foods
4	Theoretical	Optical properties of foods
5	Theoretical	Thermal properties of foods
6	Theoretical	Electrical properties of foods
7	Intermediate Exam	Mass transfer properties of foods
8	Theoretical	Thermodynamic properties of foods in dehydration
9	Theoretical	Physicochemical and engineering properties of food in membrane separation processes
10	Theoretical	Dielectric properties of foods
11	Theoretical	Ultrasound properties of foods
12	Theoretical	Kinetic data for biochemical and microbiological processes during thermal processing
13	Theoretical	Gas exchange properties of fruits and vegetables
14	Final Exam	Novel measurement techniques of physical properties of foods

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Assignment	2	28	2	60
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	5	4	4	5	5
P2	4	4	4		
P3		5	5		
P4	1				
P5	1				