



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Drying Technology							
Course Code		GMP531		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	204 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		This course aims to give basic principles of heat and mass transfer in drying along with the theories for moisture migration in the solid and drying applications for different food systems							
Course Content		Basic principles of heat and mass transfer in drying. Theories for moisture migration in the solid. Characteristic drying curves. Batch and continous drying systems, energy and mass balances for these systems and factors influencing design of these systems. Measurement and control techniques for these systems.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study, Individual Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	60
Assignment	2	10

Recommended or Required Reading

1	Chen, X.D., Mujumdar, A.S., 2008. Drying Technologies in Food Processing
2	Heldman, D.R., Lund, D.B., Sabliov, C., 2007. "Handbook of Food Engineering"
3	Rahman, M.S. (ed.), 2009. Food Properties Handbook, 2nd edition, CRC Press, New York

Week	Weekly Detailed Course Contents	
1	Theoretical	Food drying fundamentals
2	Theoretical	The importance of water activity in foods
3	Theoretical	Sorption isotherm
4	Theoretical	Biological changes in foods during drying process
5	Theoretical	Vapor pressure, humidity and equilibrium moisture content of foods
6	Theoretical	Characteristic drying curves and heat and mass transfer mechanisms for drying
7	Theoretical	Characteristic drying curves and heat and mass transfer mechanisms for drying
8	Intermediate Exam	Midterm
9	Theoretical	Dryer Types
10	Theoretical	The importance of drying process variables
11	Theoretical	Spray drying of foods
12	Theoretical	Freeze drying of foods
13	Theoretical	Mathematical modeling of drying process
14	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	8	3	154
Assignment	2	5	0	10
Midterm Examination	1	17	3	20
Final Examination	1	17	3	20
Total Workload (Hours)				204
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				



Learning Outcomes

1	
2	
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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	L7
P1							5
P2			4	4		5	5
P3	5	5	5	5	5	5	
P4	1						
P5						3	

