



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title	Frying Science and Technology								
Course Code	GMP625	Course Level			Third Cycle (Doctorate Degree)				
ECTS Credit	8	Workload	206 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	To give information about oxidation reactions and oxidation reactions due to deep frying operations, comparison of the different oils according to frying performances and about the properties of frying equipments.								
Course Content	Batch and continuous equipments used in deep frying operations, process control systems, frying oils and their properties, quality control parameters of deep fried food, mass and heat transfer in deep frying operation, oil adsorption on porous surfaces, packaging of deep fried products, antioxidants and synergists used during frying.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Case Study								
Name of Lecturer(s)	Prof. Aslı YORULMAZ								

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	70

Recommended or Required Reading

1	Bailey's Industrial Oil and Fat Products. Vol.1,2,3. John Wiley & Sons, Canada, 841 s., 603 s., 353 p. ? Wan, P.J. (1991).
2	The chemistry and Technology of Edible Oils and Fats and Their Fat Products. Academic Press, USA, 384 p.

Week	Weekly Detailed Course Contents & Teaching Methods	
1	Theoretical	Investigating the batch and continuous frying equipments together with process control devices
2	Theoretical	Investigating frying oils and their properties
3	Theoretical	The changes in oil and product during frying
4	Theoretical	Mass and heat transfer in frying
5	Theoretical	Quality control parameters of fried product
6	Theoretical	Quality control parameters of fried product
7	Theoretical	Industrial applications of frying
8	Theoretical	Midterm
9	Theoretical	Innovative approaches in frying technology
10	Theoretical	Improvement of frying oils
11	Theoretical	Studies on evaluation of waste fried oils
12	Theoretical	Oral presentations
13	Theoretical	Oral presentations
14	Theoretical	General evaluation
15	Theoretical	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	10	3	182
Midterm Examination	1	10	2	12
Final Examination	1	10	2	12
Total Workload (Hours)				206
[Total Workload (Hours) / 25*] = ECTS				8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Understanding the principles and kinetics of frying
2	Creating frying oil formulas
3	Understanding the quality parameters of frying oil and fried food product



4	Explain properties and design principles of advanced oxidation processes
5	Explain mechanisms of oxidation.

Programme Outcomes (Food Engineering Doctorate)

1	Developing and investigating the details of current and advanced knowledge in the field of Food Engineering by original thought and/or research on the level of expertise based on the graduate qualification and reaching to the original definitions that bring innovation to science.
2	Gain of ability of develop strategies, policies and implementation plans in the field of food engineering and evaluate the results within the framework of quality processes.
3	Gain of ability to perceive, design, evaluate and finish an original process by using and following the knowledge of the recent developments in the engineering fields.
4	Gain of ability of making critical analysis, synthesis and evaluation of ideas and development in food engineering field
5	Having advanced knowledge of food science and its applications based on doctoral level 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	3	3	3	
P3	3	2	2	4	
P4	3	3	3	3	
P5	3	4	3	3	

