AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Functional Food Ingredients and Nutraceuticals						
Course Code		GMP508		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 a critical review on the processing technologies of funtional food ingredients and nutraceuticals and their potential health benefits with the current scientific studies.						
Course Content		Introduction to functional food ingredients and nutraceuticals, production technologies for functional food ingredients (extraction, distillation, dehydration, membran separation, nanotechnology, bioprocess, encapsulation), health effects of funtional food ingredients and nutraceuticals.						
Work Placement		N/A						
Planned Learning Activities and Teaching Methods			Explanation (Presentation), Discussion, Case Study, Individual Study					
Name of Lecturer(s)								

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	50
Assignment	1	10
Term Assignment	1	20

Recommended or Required Reading

1	Functional Food Ingredients and Nutraceuticals: Processing Technologies, Edited by John Shi,2006, CRC Press
2	Nutraceuticals and Functional Foods in Human Health and Disease Prevention, Edited by Debasis Bagchi, Harry G. Preuss, Anand Swaroop, 2015, CRC Press.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to functional ingredients: carotenoids, dietary fiber, fatty acids, flavonoids, isothiocyanates, phenolic acids, plant stanols and sterols, polyols, phytoestrogens, prebiotics and probiotics, soy protein, microalgea, vitamins and minerals.
2	Theoretical	Introduction to nutraceuticals
3	Theoretical	Production of functional food ingredients by extraction technology
4	Theoretical	Production of fuctional ingredients by distillation and dehydration technologies
5	Theoretical	Production of functional ingredients by membran separation technology
6	Theoretical	Production of functional ingredients by nanotechnology
7	Intermediate Exam	Production of functional ingredients by bioprocessing technology
8	Theoretical	Production of functional ingredients by encapsulation technology
9	Theoretical	Health effects of funtional food ingredients and nutraceuticals: Cardiovascular health, obesity, diabetes and hypertension
10	Theoretical	Health effects of funtional food ingredients and nutraceuticals: Arthritis, inflammation, joint disorders, and pulmonary diseases
11	Theoretical	Health effects of funtional food ingredients and nutraceuticals: Immune health and cancer
12	Theoretical	Health effects of funtional food ingredients and nutraceuticals: Ocular, hair and skin health
13	Theoretical	Health effects of funtional food ingredients and nutraceuticals: Gastrointestinal disorders
14	Final Exam	Health effects of funtional food ingredients and nutraceuticals: Fertility and sleep disorders.

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Assignment	1	28	2	30
Term Project	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	2	2	3	2	2
P2	3	3	4	4	3
P3	3	3	3	3	3
P4	3	3	3	3	3
P5	3	3	3	3	3