



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title	Effects of Free Radicals and the Role of Antioxidants in Nutrition								
Course Code	GMP619		Course Level		Third Cycle (Doctorate Degree)				
ECTS Credit	8	Workload	200 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	To examine the oxidative tissue damage caused by free radicals, roles of free radicals in various pathologies and antioxidant defense systems								
Course Content	Free radicals will be defined and information will be given on the effects on species, resources and biological systems, as well as mechanisms for removing harmful effects.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study								
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	60
Assignment	5	20

Recommended or Required Reading

1	Oxidants, Antioxidants And Free Radicals, Salem, H., CRC Press Published November 12, 1997, ISBN 9781560326441
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Week Weekly Detailed Course Contents & Teaching Methods

Week	Weekly Detailed Course Contents & Teaching Methods
1	Theoretical Definition and formation of free radicals
2	Theoretical Free oxygen radicals and reactive oxygen species
3	Theoretical Biological and intracellular sources of free radicals
4	Theoretical Transition metals and free radical formation
5	Theoretical Phagocytosis and respiratory burst
6	Theoretical Free radicals in antimicrobial activity
7	Intermediate Exam Midterm exam
8	Theoretical Effects of free radicals on membrane lipids
9	Theoretical Effects of free radicals on proteins
10	Theoretical Effects of free radicals on nucleic acids
11	Theoretical Effects of free radicals on carbohydrates
12	Theoretical Oxidative damage mechanisms
13	Theoretical Endogenous and Exogenous Antioxidants
14	Theoretical Antioxidant effects of melatonin, resveratrol and alpha-lipoic acid
15	Theoretical Antioxidant effects of melatonin, resveratrol and alpha-lipoic acid
16	Final Exam Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28
Assignment	5	0	10	50
Individual Work	14	0	3	42
Midterm Examination	1	20	1	21
Final Examination	1	30	1	31
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 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	1	4		1	1
P2			5		
P3			4		
P4			4		
P5			2		

