



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Biosensors For Environmental Applications							
Course Code		CSAG643		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	10	Workload	250 ( <i>Hours</i> )	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		This course aims to understand concept of biosensor and the importance of environmental applications.							
Course Content		Information about term, history and structures of biosensors. Classification of biosensors. Detailed examination of the use of biosensors in environmental applications. Examples for commercial biosensors.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Discussion, Case Study					
Name of Lecturer(s)									

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	35
Assignment	3	45

### Recommended or Required Reading

1	Biosensors for Enviromental Applications. Prof. Dr. Deniz AKTAŞ UYGUN (unprinted lecture notes)
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Week	Weekly Detailed Course Contents	
1	Theoretical	Definition, History and Components of Biosensors
2	Theoretical	Classification of Biosensors
3	Theoretical	Overview of Environmental Pollution
4	Theoretical	Biosensors in Determination of Toxicity and Detection of Damaged Endocrine System
5	Theoretical	Biosensors in Detection of Biocides
6	Theoretical	Biosensors in Detection of Hormones
7	Theoretical	Biosensors in Detection of Polychlorinated Biphenyls
8	Theoretical	Biosensors in Detection of Dioxins, Phenols, Surfactants
9	Theoretical	Biosensors in Detection of Alkenes, Aromatic Compounds, Polycyclic Aromatic Hydrocarbons
10	Intermediate Exam	Midterm
11	Theoretical	Biosensors in Detection of Antibiotics, Toxins and Microorganisms
12	Theoretical	Use of Biosensors in Metal Detection
13	Theoretical	Biosensors in Detection of Inorganic Phosphate, Nitrate and BOD
14	Theoretical	Use of Biosensors Environmental Remediation
15	Theoretical	Commercial Biosensors
16	Theoretical	Student Presentations
17	Final Exam	Final exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	7	0	10	70
Midterm Examination	1	64	2	66
Final Examination	1	70	2	72
Total Workload (Hours)				250
[Total Workload (Hours) / 25*] = ECTS				10

\*25 hour workload is accepted as 1 ECTS



**Learning Outcomes**

1	To learn the concept and types of biosensors
2	To have general knowledge about environmental pollution
3	To have knowledge about the environmental applications of biosensors
4	To gain self-learning skills and to maintain lifelong learning
5	To be able to comment on issues related to the field

**Programme Outcomes** (*Environmental Health Interdisciplinary Doctorate*)

1	Equipped with advanced knowledge and skills related to research methods, data analysis and interpretation of research results in the development and application of environmental health theories;
2	who can take part in professional arrangements; contributes to the development of health related institutions;
3	Knows, interprets and comments on national and international environmental health legislation,
4	Organizasyon Assuming an effective role in environmental health organization and management,
5	To Equipped with the knowledge and skills necessary for the effectiveness of environmental health practices in the future;

**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	1	5
P2	5	4	4	2	4
P3	5	4	4	3	3
P4	5	4	4	4	2
P5	5	4	4	5	1

