AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Biosensors						
Course Code		KİM658		Couse Level		Third Cycle (Doctorate Degree)		
ECTS Credit	8	Workload	200 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of this course is to gain extensive information about biosensors and their production.						
Course Content		Calorimetric biosensors, Potentiometric and amperometric biosensors, Optical biosensors, Piezo-electric biosensors, Immunosensors.						
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	35
Assignment	3	45

Recommended or Required Reading

1	Instructor notes
2	Biochromatography, MA Vijayalakshmi, Taylor and Francis, 2002.

Week	Weekly Detailed Course Contents	
2	Theoretical	What is the biosensors?
3	Theoretical	Types of Biosensors
4	Theoretical	Calorimetric biosensors
5	Theoretical	Application of Calorimetric biosensors
6	Theoretical	Potentiometric and amperometric biosensors
7	Theoretical	Application of Potentiometric and amperometric biosensors
8	Theoretical	Optical biosensors
9	Theoretical	Application of Optic Biosensors
11	Intermediate Exam	Midterm exam
12	Theoretical	Piezo-electric biosensors
13	Theoretical	Application of Piezo-electric biosensors
14	Theoretical	Immunosensors
15	Theoretical	Application of immunosensors
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	6	0	12	72
Midterm Examination	1	30	2	32
Final Examination	1	52	2	54
			Total Workload (Hours)	200
			[Total Workload (Hours) / 25*] = **ECTS**	8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Learns the basic principles of biosensor preparation.
2	Knows the types of biosensors.

3	Learns the basic principles of biosensor construction.
4	to have knowledge about electrochemical biosensors
5	to have knowledge about optical biosensors

Programme Outcomes *(Chemistry Doctorate)*

1	Depending on the master degree competences, develops, insights and innovates current and advanced knowledge and/or research in proficiency level.
2	Gains high skill levels in using research methods in the field of his/her study.
3	Comprehends the interactan between disciplines related to his/her field. Reaches to original results using his/her expertise in order to analyze, synthesize and evaluate new and complicated ideas.
4	Enlarges the boundaries of his/her field of knowledge by publishing at least one research paper in national and/or international peer-reviewed journals.
5	Defends his/her original opinions related to his/her field before authority and communicates effectively illustrating his/her competence.
6	May communicate and debate written, orally and visually in European Language Portfolio level C1.
7	Follows the developments in computer software and information and communication technologies developed for his/her research area and uses these in order to solve research problems.
8	Collaborates for scientific research with national and international research teams.
9	Contributes to the course of creation and maintenance of knowledge based society and by introducing the scientific, social and cultural developments to the society he/she is living in.

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	5	4	5	5
P3	3	3	3	3	3
P4	3	3	3	3	3
P7	4	3	3	3	3