



AYDIN ADNAN MENDERES UNIVERSITY
GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
FIELD CROPS
FIELD CROPS
FIELD CROPS MASTER
COURSE INFORMATION FORM

Course Title	Enzyme Biochemistry								
Course Code	BİO523		Course Level		Second Cycle (Master's Degree)				
ECTS Credit	8	Workload	200 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	The aim of this course is to explain the properties of the enzymes and principles of catalytic mechanisms								
Course Content	Enzyme structure, classification, catalytic mechanisms, kinetics, activation and inhibition								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Experiment, Demonstration, Discussion, Case Study, Individual Study, Problem Solving								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading	
1	Biyokimyanın Prensipleri (Lehninger), David L. Nelson & Michael M. Cox ; Nedret Kılıç, Palme Yayıncılık,2005
2	Biyokimya I, II, Engin Gözükara, Nobel Tıp Kitabevi, İstanbul, 1997
3	Enzymes, A Practical Introduction to Structure, Mechanism and Data Analysis, Robert A. Copeland, A. John Wiley and Sons Inc. Publication, 2000
4	Enzyme Chemistry Impact and applications, C. J. Suckling, C. L. Gibson, A. R. Pitt, Blackie Academic and Professional, 1998.

Week	Weekly Detailed Course Contents	
1	Theoretical	Common features of enzymes
	Preparation Work	Enzyme purification
2	Theoretical	Classification of enzymes
	Preparation Work	Enzyme purification
3	Theoretical	Enzymatic catalyst mechanism
	Preparation Work	Enzyme purification
4	Theoretical	Enzyme kinetics
	Preparation Work	Enzyme activity assays
5	Theoretical	Factors influencing enzyme activity
	Preparation Work	Factors influencing enzyme activity (pH and temperature)
6	Theoretical	Inhibition of enzymes
	Preparation Work	Factors influencing enzyme activity (pH and temperature stability)
7	Theoretical	Allosteric enzymes
	Preparation Work	Factors influencing enzyme activity (Substrate concentration)
8	Theoretical	Allosteric enzymes
	Preparation Work	Factors influencing enzyme activity (Substrate concentration)
9	Intermediate Exam	Mid exam
10	Theoretical	Enzyme specificity
	Preparation Work	Enzyme specificity
11	Theoretical	Enzymatic catalyst mechanism



11	Preparation Work	Enzymatic catalyst mechanism
12	Theoretical	Regulation of enzyme activity
	Preparation Work	Regulation of enzyme activity
13	Theoretical	Determination of enzyme activity, spectrophotometric applications.
	Preparation Work	Determination of enzyme activity, spectrophotometric applications.
14	Theoretical	Structure and function of coenzymes.
	Preparation Work	Structure and function of coenzymes.
15	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	0	2	30
Lecture - Practice	15	0	2	30
Assignment	7	0	5	35
Project	7	0	5	35
Laboratory	10	0	5	50
Reading	4	0	2	8
Quiz	4	0	2	8
Midterm Examination	1	0	2	2
Final Examination	1	0	2	2

Total Workload (Hours) 200

[Total Workload (Hours) / 25*] = ECTS 8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to learn the Enzyme structure
2	To be able to classify the enzymes
3	To be able to learn the mechanisms of catalysis
4	To be able to get the Enzyme kinetics
5	To be able to analyze Activation and inhibition of enzymes
6	To be able to get Information about the measurement of enzyme activity and kinetic characterization

Programme Outcomes (Field Crops Master)

1	To be able to improve and deepen the level of expertise in field crops on the basis of the departments licenses qualifications.
2	To be able to recognize the subjects related to field crops, to be able to solve these and make interpretation.
3	To be able to have the skills of acting independently, to have power to decide and to create.
4	To be able to work in teams between departments
5	To be able to give briefing about latest information of Field Crops in written, oral and visual ways.
6	To be able to take responsibility for developing the new approaches and to formulate a solution facing unforeseen complex situations of applications,
7	To be able to defend the original opinions in both Turkish and in foreign languages by using these languages and communicating effectively.
8	To be able to contribute to science by producing knowledge for the aim of improving quality, efficiency and sustainability
9	To be able to apply breeding methods in order to improve new varieties for Field Crops.
10	To be able to maintain and select the appropriate statistical methods within the framework of the study, evaluation of scientific ethics; to convert the results into a report/dissertation and to offer them by producing scientific publications.

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5	L6
P1	4	3	4	3	4	3
P2	4	3	4	3	4	3
P3	4	3	4	3	4	3
P4	4	3	4	3	4	3
P5	4	3	4	3	4	3
P6	4	3	4	3	4	3



P7	4	3	4	3	4	3
P8	4	3	4	3	4	3
P9	4	3	4	3	4	3
P10	4	3	4	3	4	3

