



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Enzyme Kinetics							
Course Code		GMP520		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	200 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		It is aimed to investigate the enzymes catalyzed reactions kinetically.							
Course Content		Course summary includes Basic concepts; Structure of enzymes, bioenergetic, Kinetics of enzyme; Equations of Michealis Menten, Lineweaver-Burk ve Eadie-Hofstee, effects of temperature and pH, inhibition, competitive, noncompetitive-uncompetitive inhibitors, inhibition of substrat and product, activation, sigmoid kinetics and allosteric enzymes, immobilized enzymes, methods and applications, experimental measurement of enzyme activity; initial velocity measurements; mechanism of enzymatic catalysis							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), 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	Kenneth B. Taylor, Enzyme Kinetics and Mechanisms (Electronic Resource), Kluwer Academic Pub., Boston, 2002
2	Bisswanger Hans (Translated by Leonie Bubenheim), Enzyme Kinetics – Principles and Methods, John Wiley-VCH, NY, 2002

Week	Weekly Detailed Course Contents	
1	Theoretical	Basic concepts, Structure of enzymes, bioenergetic
2	Theoretical	Kinetics of enzyme; Single substrate, Equations of Michealis Menten, Lineweaver-Burk ve Eadie-Hofstee
3	Theoretical	Inhibitors, Competitive, noncompetitive-uncompetitive inhibitors, Inhibition of substrat and product, activation
4	Theoretical	Activation, effects of temperature and pH
5	Theoretical	Kinetics of enzyme; Two/multi substrate
6	Theoretical	Inhibition
7	Intermediate Exam	Midterm exam
8	Theoretical	Activation, effects of temperature and pH
9	Theoretical	Sigmoid kinetics
10	Theoretical	immobilized enzymes
11	Theoretical	The effect of immobilization on kinetic parameters
12	Theoretical	Experimental measurement of enzyme activity, initial velocity measurements, analysis methods
13	Theoretical	Enzymes in Food Applications
14	Theoretical	Seminar

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	9	3	168
Midterm Examination	1	15	1	16
Final Examination	1	15	1	16
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	
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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	L6
P1	5	5	5	5	5	5
P2	5	5	5	5	5	5
P3	1	1	1	1	1	1
P4	1					
P5	4	4	4	4	4	4

