



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Enzyme Kinetics							
Course Code		KİM651		Couse Level		Third Cycle (Doctorate Degree)			
ECTS Credit	10	Workload	256 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		In this course following a brief historical review, a through discussion of enzyme kinetics is made							
Course Content		History, definition of enzyme and kinetics, analysis of kinetic data, types of enzyme inhibition, factors effected the enzymatic activity, application and examples.							
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	2	20

Recommended or Required Reading

1	Enzyme Kinetics, 1993. I.H. Segel , Wiley-Interscience, ISBN: 0471303097
2	Unpublished lecture notes of the instructor.

Week	Weekly Detailed Course Contents	
1	Theoretical	Enzymes: Historical perspective
2	Theoretical	Substrate specificity
3	Theoretical	Regulation of enzymatic activity. Allosteric enzymes.
4	Theoretical	Chemical kinetics.
5	Theoretical	Michaelis-Menten equation.
6	Theoretical	Analysis of kinetic data.
7	Theoretical	Enzyme inhibition.
8	Intermediate Exam	Midterm exam
9	Theoretical	Factors effecting enzyme activity.
10	Theoretical	Bisubstrate enzymatic reactions.
11	Theoretical	Cofactors and coenzymes.
12	Theoretical	Active site – catalytic site.
13	Theoretical	Determination and meaning of Km, Vmax and kcat.
14	Theoretical	Applications of enzyme kinetics.
15	Theoretical	Student presentations
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	2	55	0	110
Midterm Examination	1	50	2	52
Final Examination	1	50	2	52
Total Workload (Hours)				256
[Total Workload (Hours) / 25*] = ECTS				10

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To repeat the knowledge of enzyme.
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2	To learn the knowledge about enzyme kinetics.
3	To learn the applications related to enzyme kinetics.
4	to learn the determination of K_m , V_{max} and k_{cat} .
5	to learn the factors effecting enzyme activity.

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 interaction 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			5
P2	5	5			5
P3	5	5			
P4			5	5	5
P5			5	5	5
P6			5	5	5

