



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Biochromatography							
Course Code		MBTK624		Couse Level		Third Cycle (Doctorate Degree)			
ECTS Credit	8	Workload	203 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of this lecture is to teach the basic steps of biochromatography, various biochromatographic methods esspecially affinity chromatography, industrial biochromatography and biomedical applications							
Course Content		Basic steps of biochromatography. Gel filtration. Ion-exchange biochromatography. Hydrophobic interaction chromatography of proteins. Dye-ligand affinity chromatography. Immobilized histidine ligand affinity chromatography. Immobilized metal-ion affinity chromatography. Thiophilic interaction chromatography, glicobiology and biochromatography. Imprinted polymers as a stationar phase for affinity purification. Industrial biochromatography. Biochromatography and biomedical applications							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, 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	Lecturer notes.
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Week	Weekly Detailed Course Contents	
1	Theoretical	Basic steps of biochromatography.
2	Theoretical	Gel filtration
3	Theoretical	Ion-exchange biochromatography.
4	Theoretical	Hydrophobic interaction chromatography of proteins.
5	Theoretical	Affinity chromatography
6	Theoretical	Dye-ligand affinity chromatography
7	Theoretical	Immobilized histidine ligand affinity chromatography.
8	Intermediate Exam	Midterm exam
9	Theoretical	Immobilized metal-ion affinity chromatography
10	Theoretical	Thiophilic interaction chromatography, glicobiology and biochromatography
11	Theoretical	Imprinted polymers as a stationar phase for affinity purification.
12	Theoretical	Industrial biochromatography.
13	Theoretical	Biochromatography and biomedical applications
14	Theoretical	Biochromatography and biomedical applications
15	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	0	3	39
Assignment	4	0	10	40
Term Project	6	0	6	36
Individual Work	13	0	4	52
Quiz	10	0	3	30
Midterm Examination	1	0	3	3



Final Examination	1	0	3	3
Total Workload (Hours)				203
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Be able to get knowledge about biochromatography applications
2	2. Be able to get knowledge about usage of biochromatography types
3	Be able to get knowledge about biomedical applications of biochromatography
4	Be able to get knowledge about biochromatography applications
5	Be able to get knowledge about biomedical applications of biochromatography

Programme Outcomes (Molecular Biotechnology(English) Interdisciplinary Doctorate)

1	Ability to identify, analyze and understand problems related to molecular biotechnology and finding valid conclusions with basic knowledge in biotechnology
2	Ability to appropriately use laboratories and their associated equipment as part of research and observation activities through various branches of sciences
3	Ability to understand and interpret biological processes at cell, tissue, organ, system and organism levels
4	Ability to decide and apply appropriate tools and techniques in biotechnological manipulation
5	Ability to comprehend fundamentals of genetics and molecular biology and carry out basic methods in relevant applications
6	Ability to apply the fundamentals of protein and DNA chemistry, and immunology to techniques in biotechnology
7	. Ability to understand and practice basics of applied biotechnology, with acquired knowledge on problem solving approaches
8	Ability to understand and interpret basics of molecular applications within medical, agriculture, veterinary and forensic sciences
9	Ability to perceive biological existence at the global and regional scales, together with comprehension of associated problems
10	Acquiring appropriate knowledge in the field of basic sciences to support perception, analysis and interpretation of biological facts, and ability to use and practice relevant methods for this goal
11	Ability to develop proficiency in laboratory management, including maintenance of an orderly work environment, inventory and ordering, and set up or maintenance of equipment
12	Ability to learn essential methods in microbiology and basic skills in a microbiology labortaory
13	Ability to demonstrate proficiency with standard techniques in liquid measurement, recombinant DNA technology, protein purification and identification, and cell culture

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

	L1	L2	L3
P1	5	5	5
P2	5	5	5
P3	3	3	3
P4	5	5	4
P5	5	5	4
P6	3	3	3
P7	4	4	5
P8	4	4	5
P9	4	4	5
P10	4	4	5
P11	3	3	3
P12	3	3	3
P13	5	5	5

