AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Protein Prufication Techniques								
Course Code	TBY414		Couse Level	First Cycle (Bachelor's Degree)					
ECTS Credit	4	Workload	100 *(Hours)*	Theory	2	Practice	0	Laboratory	2
Objectives of the Course	The aim of this course is to give the theoretical background of the methods used in protein purification. Isolation of the protein of interest from complex media is vital for the characterization of the function, structure and interactions of proteins or protein groups.								
Course Content	Protein structure and properties, Protein elution, Homogenization, Satrifugation, Gel filtration, Polyacrylamide gel electrophoresis (PAGE), SDS-PAGE, Protein staining in PAGE and SDS-PAGE gels, Isoelectric focusing (IEF), Protein determination								
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	40
Final Examination	1	70

Recommended or Required Reading	
1	Lehninger Principles of Biochemistry, David L. Nelson, Michael M. Cox (2012)
2	Temel ve İleri Moleküler Biyoloji Yöntemleri Genomik ve Proteomik Analizler, Güler Temizkan, Nazlı Arda, Nobel Tıp Kitabevleri (2018)

Week	Weekly Detailed Course Contents	
1	Theoretical	Structure ve properties of proteins
2	Theoretical	Extraction of proteins
3	Theoretical	Homogenisation
4	Theoretical	Santrifuge
5	Theoretical	Elektrophoresis methods
6	Theoretical	Gel filtration
7	Theoretical	Overview
8	Intermediate Exam	Midterm exam
9	Theoretical	Polyacrylamide gel electrophoresis (PAGE)
10	Theoretical	SDS-PAGE
11	Theoretical	Protein staining on PAGE and SDS-PAGE gels
12	Theoretical	Isoelectric focusing (IEF)
13	Theoretical	Protein determination
14	Theoretical	Overview
15	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	1	2	39
Assignment	5	2	2	20
Individual Work	5	2	2	20
Midterm Examination	1	9	1	10
Final Examination	1	10	1	11
			Total Workload (Hours)	100
			[Total Workload (Hours) / 25*] = **ECTS**	4
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Know the principles of homogenization
2	Knows centrifugation
3	Knows gel filtration
4	Know the structure of proteins
5	Knows PAGE Electrophoresis

Programme Outcomes *(Dairy Technology)*	
1	Having sufficient infrastructure in basic sciences and engineering subjects and ability to use the theoretical and applied info instantly in this field.
2	Determining the modern techniques, tools and information technologies required for applications related with his field and ability to use them efficiently
3	Ability for planning, projecting, and designing, following up, analyzing and finding target-driven solutions related with his field
4	Ability to have professional ethic and awareness.
5	Ability to work, decide, express opinions orally and in written individually
6	Ability to participate team studies, taking responsibility, making leadership.
7	Ability to conceive Ataturk's principles and reforms, to communicate in Turkish and foreign language.
8	Ability to comprehend the necessity to learn for a life time, to monitor developments in science and technology and continuously renew himself.
9	Having sufficient level of information about production and quality control of milk and dairy products and also product development, increasing product quality and food security fields.
10	Ability to detect, define, solve problems related with his field and to select and apply suitable methods and modeling techniques for this purpose.
11	To be conscious about workplace applications, worker health, work security and environment subjects, to have knowledge about legal results of the engineering applications related with his subject.

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

	L1	L2	L3	L4	L5
P8	4	4	4	4	4
P9	4	4	4	4	4