AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Proteomics and Genomics Database								
Course Code	MBTK632		Couse Level		Third Cycle (Doctorate Degree)				
ECTS Credit	7	Workload	173 *(Hours)*	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	The basic information about proteomics and genomics database will be informed. The analysis/applications on sample data using microsatellite genotype analysis methods and DNA sequence analysis will be realized. The information obtained as a result of these analyses will be interpreted in consideration of ecological principles								
Course Content	Basic information on molecular ecology, conservation genetics, markers used in molecular ecology, based methods used in molecular ecology, Genetic variation, gen flow, microsatellite, mitochondrial DNA, single nucleotide polymorphism, DNA sequence analysis, fragment analysis, to used and analysis of microsatellite data, to comment of microsatellite analysis								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Demonstration, Discussion, Case Study								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	70

Recommended or Required Reading	
1	Lowe, A., Harris, S. and Ashton, P. Ecological Genetics: Design, Analysis, and Application. Blackwell publishing Ltd, 2004
2	Richard Frankham, Jonathan D. Ballou, David A. Briscoe. Introduction to Conservation Genetics, Cambridge University Press, 7th edition, 2007
3	Matthew B. Hamilton. Population Genetics, Wiley-Blackwell, UK. ISBN 978-1405-132-770, 2009

Week	Weekly Detailed Course Contents	
1	Theoretical	Genomics and proteomics
2	Theoretical	Markers and Sampling in Molecular Ecology
3	Practice	Hardy Weinberg Rules and Applications
4	Theoretical	Recombination, Linkage balance and Inequality
5	Theoretical	Natural selection I: Basic Models
6	Theoretical	Protection Genomic
7	Theoretical	Genetic diversity and differentiation-I
8	Theoretical	Genetic diversity and differentiation-II (Midterm exam)
9	Practice	Fragment analysis
10	Practice	Package Program Applications in Population Genetics
11	Practice	Naturel Selection II: Balanced Selectivity and Advanced Models
12	Practice	Quantitative Genetics
13	Practice	Evaluation of proteomic data
14	Practice	Use and analysis of mitochondrial DNA and microsatellite data

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28
Assignment	3	0	12	36
Term Project	3	0	6	18
Individual Work	13	0	3	39
Quiz	6	0	3	18
Midterm Examination	1	0	3	3

Final Examination	1	0	3	3
			Total Workload (Hours)	173
			[Total Workload (Hours) / 25*] = **ECTS**	7
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Learn basic information in molecular ecology
2	Learn molecular methods used to molecular ecology
3	Know the methods of obtaining species specific microsatellite loci
4	Learn to obtain the necessary data for DNA sequence analysis and microsatellite analysis
5	Know to create data files for analysis
6	Learn the properties and operation of computer programs that analyze microsatellite data
7	Interpret about results of microsatellite data analysis
8	Learn to interpret by combining ecolocical and phylogenetic data
9	Plan new studies about molecular ecology of various organisms

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	L4	L5	L6	L7	L8	L9
P1	5	5	5	5	5	5	5	5	5
P2	5	5	5	5	5	5	5	5	5
P3	3	3	3	3	3	3	3	3	3
P4	5	5	4	4	4	4	4	4	4
P5	5	5	4	4	4	4	4	4	4
P6	3	3	3	3	3	3	3	3	3
P7	4	4	5	5	5	5	5	5	5
P8	4	4	5	5	5	5	5	5	5
P9	4	4	5	5	5	5	5	5	5
P10	4	4	5	5	5	5	5	5	5
P11	3	3	3	3	3	3	3	3	3
P12	3	3	3	3	3	3	3	3	3
P13	5	5	5	5	5	5	5	5	5