



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Genomes							
Course Code		MBTK621		Couese Level		Third Cycle (Doctorate Degree)			
ECTS Credit	8	Workload	200 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of this course is to train the students to understand genome structure and functions, gene regulation and some basic molecular genetic techniques that have common usage in molecular genetic studies							
Course Content		This course includes complete knowledge on the nature, structure, molecular forms, location, organization, packaging, recombination, damage, transposition, repair, protection of genetic material							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)		Assoc. Prof. Seda ÖRENAY BOYACIOĞLU							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Genomlar (TA Brown)
2	Lewin's Genes XII (Jocelyn E. Krebs, Elliott S. Goldstein, Stephen T. Kilpatrick)

Week	Weekly Detailed Course Contents	
1	Theoretical	Genomes, Transcriptomes and Proteoms
2	Theoretical	Working with DNA
3	Theoretical	Genome mapping
4	Theoretical	Genome sequencing
5	Theoretical	Eukaryotic nuclear genome
6	Theoretical	Prokaryotic genomes and eukaryotic organelle genomes
7	Theoretical	Virus genomes and transposable elements
8	Intermediate Exam	Midterm exam
9	Theoretical	How genomes function?
10	Theoretical	RNA synthesis and processing
11	Theoretical	Regulation of genome activity
12	Theoretical	Replication of genome
13	Theoretical	Mutation and DNA repair
14	Theoretical	Recombination
15	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	0	3	39
Assignment	7	0	13	91
Term Project	2	0	5	10
Laboratory	4	0	12	48
Quiz	2	0	3	6
Midterm Examination	1	0	3	3



Final Examination	1	0	3	3
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	To be able to understand principles of molecular genetics
2	To be able to understand basics of molecular genetics principles
3	To be able to recognize gene expression
4	To be able to understand Genome, transcriptome and proteom concepts
5	To be able to understand mutations
6	To be able to understand organelle and virus genome organizations

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

