



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Applied Molecular Genetics							
Course Code		TBY208		Course Level		First Cycle (Bachelor's Degree)			
ECTS Credit	4	Workload	105 (<i>Hours</i>)	Theory	2	Practice	0	Laboratory	2
Objectives of the Course		The lecture studied science of genetics at the molecular level provides the basic knowledge and skills .							
Course Content		Introduction to molecular genetics Nucleic acid metabolism Structure and replication of DNA DNA repair mechanisms and enzymes Genes and mutations RNA Transcription and Translation mechanisms Regulation of gene expression in prokaryotes Regulation of gene expression in eukaryotes Genetic recombination The creation and analysis of DNA clones Chromosome analysis Molecular markers							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Demonstration, Discussion					
Name of Lecturer(s)		Lec. Zühal GÜNDÜZ							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Final Examination	1	110

Recommended or Required Reading

1	Moleküler Genetiğin Esasları. H. Ümit Lüleyap, Adana Nobel Kitabevi
2	GENETİCS (A Molecular Approach), Peter J. RUSSELL

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to molecular genetics
2	Theoretical	Nucleic acid metabolism
3	Theoretical	Structure and replication of DNA
4	Theoretical	DNA repair mechanisms and enzymes
5	Theoretical	Genes and mutations
7	Theoretical	Transcription and Translation mechanism
8	Theoretical	Regulation of gene expression in prokaryotes
9	Theoretical & Practice	Central Dogma General Review
10	Theoretical	Regulation of gene expression in eukaryotes
11	Theoretical	Genetic recombination
12	Theoretical	The creation and analysis of DNA clones
13	Theoretical	Chromosome analysis
14	Theoretical	Molecular markers
15	Theoretical	Molecular markers
16	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	2	56
Lecture - Practice	14	1	2	42
Final Examination	1	6	1	7
Total Workload (Hours)				105
[Total Workload (Hours) / 25*] = ECTS				4

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To gain theoretical and practical knowledge about Molecular Genetics to the students.
2	Gaining the ability to use the solution of problems faced by the molecular genetic information
3	Have knowledge about cell and cell organization



4	Have knowledge about DNA replication
5	Have information about gene expression

Programme Outcomes (Agricultural Biotechnology)

1	To be able to develop skills in identifying, modeling and solving problems in agricultural biotechnology
2	To be able to synthesize life and engineering sciences for the effective resource planning of agricultural biotechnology applications
3	To be able to interpret about living organisms structure, metabolic and physiological processes in order to propose biotechnological solutions to the agricultural problems
4	To be able to analyze genomic, metabolomic and proteomic information via bioinformatic tools.
5	To have the ability to analyze collected data and interpret the results.
6	To have the ability of individual working ability and to make independent decisions, to work in inter-disciplinary and interdisciplinary teamwork, to communicate by expressing their ideas orally and in writing, clearly and concisely
7	To have the awareness of professional liabilities and ethics
8	To be able to follow current national and international problems

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	4	4
P2	5	5	5	4	4
P3	5	5	5	4	4
P4	5	5	5	5	5
P5	4	4	4	4	4
P6	4	4	4	4	4
P7	3	3	3	2	2
P8	3	3	2	2	2

