AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Recombinant DNA Technology II								
Course Code	TBY402		Couse Level	First Cycle (Bachelor's Degree)					
ECTS Credit	4	Workload	100 *(Hours)*	Theory	2	Practice	0	Laboratory	2
Objectives of the Course	Aim of this Course is to familiarize students with the most frequently used methods in Recombinant DNA Technology and Genetic Engineering from both a theoretical and experimental point of view								
Course Content	Construction and Use of Genomic and cDNA Libraries, Production of Recombinant Proteins, Production of Vaccines and Hormones in Microorganisms, Transgenic Plants and their Applications, Transgenic Animals and their applications, Impacts of Recombinant DNA and Genetic Engineering								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Experiment, Discussion, Individual Study								
Name of Lecturer(s)	Lec. Murat Kemal AVCI								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading	
1	Principles of Gene Manipulation Sandy B., Primrose, Richard M. Twyman, Madlen, MA; Oxford: Blackwell Pub., (2006)
2	Gene Cloning and DNA Analysis An Introduction Fourth Edition T.A Brown
3	An Introduction to Genetic Engineering (Studies in Biology) (2002) Desmond S. T. Nicholl Cambridge University Press

Week	Weekly Detailed Course Contents	
1	Preparation Work	Having knowledge from source books
2	Theoretical	Recombinant DNA Technology and Their Applications
	Preparation Work	Having knowledge from source books
3	Theoretical	Construction and Use of Genomic and cDNA Libraries
	Preparation Work	Having knowledge from source books
4	Theoretical	Manipulating DNA in Microorganisms other than E. Coli 1
	Preparation Work	Having knowledge from source books
5	Theoretical	Manipulating DNA in Microorganisms other than E. Coli 2
	Preparation Work	Having knowledge from source books
6	Theoretical	Production of Recombinant Proteins 1
	Preparation Work	Having knowledge from source books
7	Theoretical	Production of Recombinant Proteins 2
	Preparation Work	Having knowledge from source books
8	Theoretical	General review
9	Theoretical	Production of Vaccines and Hormones in Microorganisms 1
	Preparation Work	Having knowledge from source books
10	Theoretical	Production of Vaccines and Hormones in Microorganisms 2
	Preparation Work	Having knowledge from source books
11	Theoretical	Production of Transgenic Plants
	Preparation Work	Having knowledge from source books
12	Theoretical	Areas of use of Transgenic Plants
	Preparation Work	Having knowledge from source books
13	Theoretical	Transgenic Animals and their Applications
	Preparation Work	Having knowledge from source books
14	Theoretical	Impacts of Recombinant DNA and Genetic Engineering on the Biological Sciences, Medicine and Industry
	Preparation Work	Having knowledge from source books
15	Theoretical	General evoluation

15	Preparation Work	Source books
16	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	1	2	45
Assignment	1	4	1	5
Laboratory	15	1	2	45
Final Examination	1	4	1	5
			Total Workload (Hours)	100
			[Total Workload (Hours) / 25*] = **ECTS**	4
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	At the end of this course students learn basic methods of gene cloning and manipulation for protein expression.
2	At the end of this course students learn how recombinant DNA technology is used in genetic engineering to modify prokaryotic and eukaryotic cells
3	Students gain information about practical and biotechnological applications of recombinant DNA technology
4	To be able to carry out a project consisting of basic techniques used in Recombinant DNA Technology alone.
5	To be able to create a target-oriented project, to be able to select, apply and interpret the results of laboratory experiments.

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