

# RECOMBINANT DNA TECHNOLOGY AND GENETIC ENGINEERING

1	Course Title:	RECOMBINANT DNA TECHNOLOGY AND GENETIC ENGINEERING	
2	Course Code:	MBG5436	
3	Type of Course:	Optional	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	2	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	-	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. AYDIN TÜRKEÇ	
15	Course Lecturers:	Prof. Dr. Aydın Türkeç	
16	Contact information of the Course Coordinator:	Prof. Dr. Aydın Türkeç B.U.Ü. Moleküler Biyoloji ve Genetik Bölümü aturkec@uludag.edu.tr 02242942861	
17	Website:		
18	Objective 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, to illustrate creative use of modern tools and techniques for manipulation and analysis of genomic sequences, to expose students to application of recombinant DNA technology in biotechnological research, to train students in strategizing research methodologies employing genetic engineering techniques.	
19	Contribution of the Course to Professional Development:	Student will have learned recombinant DNA technology and genetic engineering and will be able to apply them in experiments	
20	Learning Outcomes:		
		1	At the end of this course students learn basic methods of recombinant DNA and manipulation in biotechnological researches
		2	At the end of this course students learn how recombinant DNA technology is used in genetic engineering to modify organisms
		3	Students gain information about practical and biotechnological applications of recombinant DNA technology and application of genetic engineering techniques in basic and applied experimental biology
		4	At the end of this course students gain the skills proficiency in designing and conducting experiments involving recombinant DNA and genetic manipulation and ability to discuss in ethical perspective
		5	At the end of this course students learn the principles of advanced techniques in recombinant DNA technology and interpretation of results obtained by these techniques and adapt these data to everyday life
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21	Course Content:		
	Course Content:		
Week	Theoretical	Practice	
1	Introduction to recombinant DNA technology		
2	Basic techniques in recombinant DNA technology		
3	Gene cloning strategies		
4	Gene cloning and expression vectors		
5	Analyses of gene expression and function		
6	Genomic and cDNA libraries		
7	Manipulating DNA in Microorganisms other than E. coli		
8	Genome mapping		
9	Methods for genetic transformation		
10	Application of genetic engineering		
11	Production of recombinant proteins		
12	Transgenic plants and animals		
13	Genetically modified organisms and GMO		
Activities		Number	Duration (hour)
Theoretical			Total Work Load (hour)
Biotechnology and principle of biometrics and biosafety		14	3.00
Practicals/Labs		0	0.00
Self study and preparation		3	14.00
Homeworks		4	7.00
Projects		0	0.00
Field Studies		0	0.00
Midterm exams		1	25.00
Others		1	18.00
Final Exams		1	25.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00
		Biotechnology An introduction G. Ignadomachi, ISBN 13:978-1842657546 Biotechnology for Biomedical Applications, Bronzino, ISBN : 0849318114	
23	Assesment		
TERM LEARNING ACTIVITIES		NUMBE R	WEIGHT
Midterm Exam		1	40.00
Quiz		0	0.00
Home work-project		0	0.00
Final Exam		1	60.00
Total		2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00	

Contribution of Final Exam to Success Grade									60.00								
Total									100.00								
Measurement and Evaluation Techniques Used in the Course									The system of relative evaluation is applied								
24	ECTS / WORK LOAD TABLE																
25		CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16	
ÖK1	4	5	4	4	4	4	4	4	4	5	0	0	0	0	0	0	
ÖK2	4	3	4	5	5	3	4	4	4	4	0	0	0	0	0	0	
ÖK3	5	5	4	4	4	3	4	4	5	5	0	0	0	0	0	0	
ÖK4	4	3	4	4	4	3	3	4	4	5	0	0	0	0	0	0	
ÖK5	4	4	4	4	4	4	3	4	3	4	0	0	0	0	0	0	
LO: Learning Objectives    PQ: Program Qualifications																	
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High				