

RECOMBINANT DNA TECHNOLOGY AND GENETIC ENGINEERING

1	Course Title:	RECOMBINANT DNA TECHNOLOGY AND GENETIC ENGINEERING
2	Course Code:	BYT5010
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 BUÜ Fen Edebiyat Fakültesi Moleküler Biyoloji ve Genetik Bölümü Kat:1 no:110 Tel: 02242942861 E:posta: aturkec@uludag.edu.tr
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
19	Contribution of the Course to Professional Development:	At the end of this course students gain the competence to prepare projects and to strive to meet the country's requirements by using recombinant DNA methods.
20	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.
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21	Course Content:	

Course Content:			
Week	Theoretical	Practice	
1	Recombinant DNA Technology and Genetic Engineering and Their Applications		
2	DNA Restriction Enzymes		
3	Cloning and Expression Vectors		
4	Gel Electrophoresis of DNA and Proteins and Hybridization Techniques		
5	Gene Transfer Techniques		
6	DNA Sequence Analysis		
7	Polymerase Chain Reaction		
8	Construction and Use of Genomic and cDNA Libraries		
9	Manipulating DNA in Microorganisms other than E. coli		
10	Production of Recombinant Proteins		
11	Production of Vaccines and Hormones in Microorganisms		
12	Use of Transgenic Plants		
13	Transgenic Animals and their Applications		
14	Impacts of Recombinant DNA and Genetic Engineering on the Biological Sciences, Medicine and Industry		
22	Textbooks, References and/or Other Materials:		
23	Assesment		
TERM LEARNING ACTIVITIES		NUMBER	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		

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	3	14.00	42.00
Homeworks	4	7.00	28.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	25.00	25.00
Others	1	18.00	18.00
Final Exams	1	25.00	25.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

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	5	5	5	5	5	4	4	4	4	4	0	0	0	0	0	0
ÖK2	3	4	4	4	5	4	4	5	4	5	0	0	0	0	0	0
ÖK3	4	4	5	4	4	4	5	3	4	5	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				