ABDULLAH GUL UNIVERSITY
INSTITUTE OF SCIENCE AND TECHNOLOGY
BIOENGINEERING DEPARTMENT
INFORMATION OF COURSE INTRODUCTION AND PRACTICE

Course Name	CODE	SEMESTER	I+P Hour	CREDIT	AKTS
Current Topics in Molecular Biology	BENG505	Spring-Fall	3 + 0	3	10

Prerequisite Courses	BENG530, BENG535, BENG504

Course Type	Elective
Course Language	English
Course Coordinator	Mona El Khatib
Lecturers	Dr.Adan, Dr. Okhubo, Dr. Mona El Khatib
Course Assistants	-
Purpose of Course	Learn to search, analyze, interpret and criticize the current topics in molecular biology
Learning Outcome	1- Acquire a comprehensive knowledge of molecular biology 2- Be able to follow the recent advances in the field of molecular biology 3- Gain the ability to search the databases find articles and scientifically criticize the recent literature 4- Be able to perform a scientific search and present the recent data scientifically
Course Content	Introduction, eukaryotic and prokaryotic cells, DNA replication, DNA repair mechanisms, Recombinant DNA Technology, chromosome structure, functions and aberrations, translation, post-translational modifications, chromatin and gene expression, gene regulation and silencing mechanisms, the cytoskeleton, cell-cell and cell- ECM interactions, cell signaling pathways and cell death mechanisms.

WEEKLY SUBJECTS AND RELATED PRELIMINARY PAGES

Week	Subjects	Preliminary
1	Introduction to DNA	
2	Eukaryotic and Prokaryotic Cells	
3	DNA Replication	
4	DNA Repair Mechanisms	
5	Recombinant DNA Technology	
6	Chromosome Structure, Functions and Aberrations	
7	Transcription and RNA Splicing	
8	Translation	
9	Post-translational Modification	
10	Chromatin and Gene Expressions	
11	Gene regulation and Gene Silencing Mechanisms	
12	The Cytoskeleton	
13	Cell-Cell and Cell-ECM Interactions	
14	Cell Signaling Pathways	
15	Cell Death Mechanisms	

RESOURCES

Course Notes	notes and slides
Other Resources	To be announced

MATERIAL SHARING

Documents	Lecture notes
Homework	none
Exams	One midterm and one final

RATING SYSTEM		
SEMESTER WORKS	**NUMBER**	**CONTRIBUTION**
Midterm	1	20
Quiz	-	-
Homework	-	-
Presentations	2	50
Final	1	30
TOTAL		100
Success Rate of Semester		70
Success Rate of Final		30
TOTAL		100

Course Category	
Basic Sciences and Mathematics	%100
Engineering Sciences	
Social Sciences	

THE RELATIONSHIP BETWEEN THE LEARNING OUTCOMES AND PROGRAM COMPETENCE

No	Program Competence	Impurity Level				
		1	2	3	4	5
1	Understanding of Life Sciences, Mathematics and Engineering at the post-graduate level, and being able to implement of this knowledge into bioengineering problems				X	
2	Having the ability of developing a new scientific method or a technological product or process, and, designing experiments, implementing, collecting data and evaluating regarding these issues					X
3	Choosing technical equipment used in the applications related to bioengineering, having sufficient knowledge in adopting and using new technological equipment				X	
4	Having the ability of reaching the information, using resources, contributing to the literature by transferring the process and results of scientific studies as written or verbally in the national and international environments					X
5	Having the ability of working as an individual or a team, in the teams composed of discipline or different disciplines, gaining awareness of leadership and taking responsibility			X		
6	Having advanced level of foreign language knowledge to manage efficient verbal, written and visual communication in the major field			X		
7	Having the understanding of ethics in science and the responsibility in profession with the awareness of lifelong learning, being beneficial to society and sensitiveness to global issues					X
8	Being aware of the social impacts of the solutions and applications of the challenges regarding Bioengineering				X	

*From 1 to 5, it increasingly goes.

ECTS / WORK-LOAD TABLE			
Activities	Activites	Duration (Hour)	Total (Work-Load)
Course Duration (Including exam week: 16x total course hour)	16	3	48
Out of Class Exercise Time (Pre-study, reinforcement)	16	5	81
Reading	16	3	48
Scanning on Internet, library study	16	3	48
Material Designing, practice			
Preparation of report			
Preparation of presentation	15	2	30
Presentation	15	1	15
Homework			
Midterms	1	15	15
Final	1	15	15
Total Work-Load			300
Total Work-Load / 30			300/30
Course ECTS Credit			10