ABDULLAH GUL UNIVERSITY
GRADUATE SCHOOL OF ENGINEERING & SCIENCE
BIOENGINEERING DEPARTMENT
COURSE DESCRIPTION AND SYLLABUS

Course Name	CODE	SEMESTER	T+L Hour	CREDIT	ECST
Human Molecular Genetics	BENG507	Fall-spring	3+0	3	10

Prerequisite Courses	

Course Type	Elective
Course Language	English
Course Coordinator	Asst. Prof. Dr. Sebiha ÇEVİK-KAPLAN
Lecturers	Sebiha ÇEVİK-KAPLAN
Course Assistants	-
Course Objectives	Investigation of Human genetics and human diseases
Learning Outcomes	Learning of human genetics at the molecular level
Course Content	Genomics, population genetics, human diseases, animal models for human diseases.

WEEKLY SUBJECTS AND RELATED PRELIMINARY PAGES

Week	Subjects	Preliminary
1	Gene and heredity	-
2	Mendelian genetics, pedigree analysis	-
3	Genetics, human diseases, population genetics	-
4	Meiosis, gender determination, non-Mendelian genetics, article presentation.	-
5	Generating diversity: Mutations and recombination	-
6	Single nucleotide polymorphism	-
7	Genomics and sequence, Midterm exam	-
8	Gene regulation and developmental biology, article presentation.	-
9	Monogenic human diseases	-
10	Genomic studies for complex diseases	-
11	Gene expression and functional genomics	-
12	Animal model for human diseases, article presentation	-
13	Genetic testing, gene therapy	-
14	Embryonic stem cell	-
15	Personal medicine / drugs, Article presentation.	-
16	Final exam	-

RESOURCES

Course Notes	Lecturer notes and slides
Other Resources	

MATERIAL SHARING

Documents	Lecturer notes and slides
Homework	Article presentation.
Exams	Midterm and final exams

RATING SYSTEM

SEMESTER WORKS	NUMBER	CONTRIBUTION
Midterm	1	% 30
Homework	4	%20
TOTAL		%50
Success Rate of Semester		%50

Success Rate of Final		%50
TOTAL		% 100

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

THE RELATIONSHIP BETWEEN THE LEARNING OUTCOMES AND PROGRAM COMPETENCE

No	Program Outcomes	Contribution 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	Activities	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)	15	4	60
Reading	15	3	45
Searching on Internet, library study	8	4	32
Material Designing, practice	16	1	16
Preparation of report	4	4	16
Preparation of presentation	4	8	32
Presentation	4	3	12
Homework	4	3	12
Midterms	1	15	15
Final	1	15	15
Total Work-Load			303
Total Work-Load / 30			303/10
Course ECTS Credit			10.1