

**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	7,5

**Prerequisite Courses**

<b>Course Type</b>	Elective
<b>Course Language</b>	English
<b>Course Coordinator</b>	Asst. Prof. Dr. Sebiha ÇEVİK-KAPLAN
<b>Lecturers</b>	Sebiha ÇEVİK-KAPLAN
<b>Course Assistants</b>	-
<b>Course Objectives</b>	Investigation of Human genetics and human diseases
<b>Learning Outcomes</b>	Learning of human genetics at the molecular level
<b>Course Content</b>	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**

<b>Course Notes</b>	Lecturer notes and slides
<b>Other Resources</b>	

**MATERIAL SHARING**

<b>Documents</b>	Lecturer notes and slides
<b>Homework</b>	Article presentation.
<b>Exams</b>	Midterm and final exams

**RATING SYSTEM**

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

<b>Success Rate of Final</b>		%50
<b>TOTAL</b>		% 100

<b>Course Category</b>		
Basic Sciences and Mathematics		% 100
Engineering Sciences		
Social Sciences		

<b>THE RELATIONSHIP BETWEEN THE LEARNING OUTCOMES AND PROGRAM COMPETENCE</b>						
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.

<b>ECTS / WORK-LOAD TABLE</b>			
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
<b>Total Work-Load</b>			303
<b>Total Work-Load / 30</b>			303/10
<b>Course ECTS Credit</b>			7,5