

## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title	Human Genetics						
Course Code BYL434		Couse Leve	el l	First Cycle (Bachelor's Degree)			
ECTS Credit 3	Workload 76 (Hours)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course	This course aims to teach the fundamental components of human genetics, including the structure of the human genome and chromosomes, as well as the causes and inheritance patterns of genetic disorders. It aims to develop students' abilities to analyze genetic diseases based on principles of Mendelian and non-Mendelian inheritance, and to construct and interpret pedigrees. Additionally, the course provides a understanding of somatic cell mutations and the genetic mechanisms underlying cancer, enabling students to evaluate the relationship between human genetics and disease scientifically.			ure of the sorders. an and ovides an ng			
Course Content	mental knowl osomes, none Mendelian ared, and mitocl etic diseases mutations and ship between	edge on th disjunction nd non-Me hondrial inl and to per the geneti genetic ma	e history of hu events, and th ndelian inherita heritance. Stud form and interp c mechanisms aterial, chromos	man genetics, e classification ance patterns, lents will deve oret pedigree a of cancer, wit somal structur	the structure of n and analysis o including autoso lop skills to idem analyses. Additio h a focus on e, and disease.	the f related omal tify onally, the	
Work Placement	N/A						
Planned Learning Activities	Explanation (Presentation), Discussion, Individual Study						
Name of Lecturer(s)							

Assessment Methods and Criteria				
Method		Quantity	Percentage (%)	
Midterm Examination		1	40	
Final Examination		1	60	

## **Recommended or Required Reading**

Klug, W.S., Cummings, M.K., 2000. Concepts of genetics, Prentice Hall, USA
Sudbery, P., 1998. Human molecular genetics, Longman, USA
Russell, P. J., 2000. Fundamentals of genetics, Addison Wesley, USA
Strachan T, Read AP, 1999, Human Molecular Genetics, Wiley and Sons Press
Haines JL, Pericak-Vance, 1998, Approaches to gene mapping and complex human diseases, Wiley-Liss Press
Wegner RD, 1999, Diagnostic Cytogenetics, Springer Verlag Press
Massimini K ,2000, Genetic Disorders Sourcebook, Omnigraphics Press

Week	Weekly Detailed Course Contents				
1	Theoretical	Principles of human genetics and history			
2	Theoretical	Structure of the human genome			
3	Theoretical	Cell division and fertilization			
4	Theoretical	Structure of the human chromosome			
5	Theoretical	The results of chromosome non-disjunction			
6	Theoretical	Classification of genetic diseases			
7	Theoretical	Analysis of genetic diseases			
8	Theoretical	Chromosomal (cytogenetic) diseases (Midterm Exam)			
9	Theoretical	According to the principle of Mendelian inherited single gene disorders			
10	Theoretical	Pedigree analysis and X-linked dominant and recessive inheritance			
11	Theoretical	Autosomal dominant and autosomal recessive inherited diseases			
12	Theoretical	Multifactorial hereditary diseases			
13	Theoretical	Diseases due to mutations in mitochondrial DNA that do not follow Mendelian rules			
14	Theoretical	Somatic genetic diseases and cancer			
17	Final Exam	Final Exam			



Workload Calculation					
Activity	Quantity		Preparation	Duration	Total Workload
Lecture - Theory	14		2	2	56
Midterm Examination	1		8	1	9
Final Examination	1		10	1	11
Total Workload (Hours)			76		
			[Total Workload (	Hours) / 25*] = <b>ECTS</b>	3

\*25 hour workload is accepted as 1 ECTS

## Learning Outcomes

1	Explains the basic principles of human genetics and the structure of the human genome.
2	Describes the structure of human chromosomes and evaluates the consequences of chromosomal nondisjunction.
3	Classifies genetic disorders and explains their general characteristics.
4	Explains the causes and effects of chromosomal (cytogenetic) disorders.
5	Identifies single-gene disorders inherited according to Mendelian principles.
6	Performs pedigree analysis and interprets inheritance patterns.
7	Compares and explains autosomal dominant, autosomal recessive, and X-linked inheritance types.
8	Recognizes mitochondrial DNA mutation-related disorders and explains their inheritance features.
9	Explains genetic disorders in somatic cells and the genetic mechanisms involved in cancer development.

## Programme Outcomes (German Language and Literature)

1	Students will have advanced knowledge in the field of German Language and Literature in the field of German Language and Literature.
2	To be able to understand the concepts, ideas and data related to German Language and Literature through scientific methods in which he / she has learned and learned; It provides suggestions that can be proved by scientific evidence, evidence or evidence.
3	To inform the German audience about the issues related to German Language and Literature; expresses his / her own thoughts, problems, solution suggestions and methods in written and verbal way.
4	Students will be able to produce scientific studies to be accepted by the experts in the field of Languages, Literatures and Cultures.
5	It carries out advanced studies independently with learning, learning skills and critical thinking.
6	Develops strategic management and implementation plans in the field of German Language and Literature and evaluates the obtained results within the framework of quality processes and uses the obtained data in interdisciplinary studies.
7	Plans and manages the activities and projects for the professional development of the people he works with in the sense of social responsibility.
8	Students will be able to follow and use the German Language and Literature knowledge and gain the competency with their colleagues.
9	It has the competence to observe social, scientific and ethical values ??in the stages of collecting, interpreting and announcing data about German Language and Literature.
10	Uses and develops information and communication technologies with the knowledge of computer software and hardware required by German Language and Literature.
11	She is able to translate from German to Turkish and from German to German so that she can speak an equivalent language and grammar.
12	Obtains the basic professional knowledge related to the learning area.

