

COURSE DESCRIPTION FORM	
Course Code and Name	DHF190 Medical Biology and Genetics
Course Semester	1,2
Catalogue Data of the Course (Course Content)	It is about the chemistry of life, the structure and function of large biological molecules, cell structure, organelles and related disorders, stem cell biology, cell communication, cell cycle and control, cancer genetics, Mendel inheritance in humans, non Mendelian genetics, molecular genetics, central dogma and molecular basis of inheritance, DNA mutations and repair mechanisms, chromosomal abnormalities, cytogenetics, mitochondrial genome, mitochondrial diseases, genetics of bacteria and viruses, human genome, DNA technology and applications and immunogenetics.
Course Textbooks	<ul style="list-style-type: none"> • Lecture notes and the resource books • Biology Campbell, Neil A., and Jane B. Reece. "Biology, AP edition." (2008): 1231. • Medical Biology and Genetics Prof.Dr. Halil Kasap. 3. Edition. Akademisyen Press. 2020.
Supplementary Textbooks	<ul style="list-style-type: none"> • Molecular Cell Biology Lodish, H., Berk, A., Kaiser, C. A., Kaiser, C., Krieger, M., Scott, M. P., & Matsudaira, P. (2008). Macmillan. • Medical Cell Biology Goodman, S. R. (Ed.). (2007). Academic Press. • Brock Biology of Microorganisms Brock, T. D., Madigan, M. T., Martinko, J. M., & Parker, J. 15th edition (2018). Pearson. • Medical Cell Biology Goodman, Steven R., ed. Academic Press, 2007. • Concepts of Genetics Klug, W. S., Cummings, M. R., Spencer, C. A., Palladino, M. A., & Ward, S. M. (2009) Pearson. • Fenner and White's Medical Virology Burrell, Christopher J., Colin R. Howard, and Frederick A. Murphy. (2016). Academic Press.
Credit (ECTS)	5
Prerequisites for the Course (Attendance Requirements)	It is mandatory to attend the course.
Course Type	Professional/Technical Lesson
Language of Instruction	Turkish
Course Objectives	To teach basic rules in Medical Biology and Genetics, living chemistry, biological molecules, their structures and functions, cell structure and organelles, diseases related to these organelles, stem cell biology. To teach DNA replication, transcription and RNA processing, translation and posttranslational modifications, DNA mutations and repair mechanisms. To provide information about cell division and control, cancer genetics, mendel inheritance in humans, non Mendelian genetics, mitochondrial genome, mitochondrial diseases, chromosome anomalies, cytogenetics, molecular genetics, human genetics, genetic diseases and diversity, bacteria and virus genetics, immunogenetics, DNA technologies and to make all this information available in the field of Dentistry.
Course Learning Outcomes	1-Understanding and learning skills of basic medical concepts 2- Knows the potential of biological molecules to be used in dentistry and can follow up-to-date on the subject 3-Knows the structure, types and organelles of cells. Knows diseases related to organelles and formation relate to the mechanisms 4-Knows stem cells and their applications in dentistry 5-Relates cancer and its molecular mechanisms 6-Knows mendel genetics in humans and establishes a relationship 7-Knows the non Mendelian genetics and molecular mechanisms of related diseases 8-Knows chromosomal diseases and formation mechanism and can explain

	<p>9-Knows the diagnostic methods in genetic diseases 10-Knows genetic diseases and relate them with their causes 11-Knows causes of diseases and factors and their genetics 12-Defines the problems in the field of medical biology and genetics, correctly makes hypotheses and solves problems 13-İnsan genetiğini bilir 13-Knows human genetics 14-Knows genetics of bacteria and viruses 15-Can make interdisciplinary team work 16-Knows modern methods and techniques in Medical Biology and Genetics 17-Explain the relationship between immune system and genetics 18-Explain its potential Use of DNA technologies in dentistry</p>		
Instruction Method (Face-to-face, Distance education etc.)	Face to face oral lecturing		
Weekly Schedule of the Course	<ol style="list-style-type: none"> 1. Introduction to the Medical Biology and Genetics 2. The Chemistry of Life 3. The Structure and Function of Large Biological Molecules 4. The Structure and Organelles of Cell 5. Disorders Related to Organelles 6. Biology of Stem Cell and Cell-Based Regeneration 7. Cell Surfaces and Junctions 8. Cell Communication and Signaling 9. The Cell Cycle and Control Mechanisms 10. Genetics of Cancer 11. Mechanisms of Cell Death 12. Molecular Mechanisms of Aging 13. Mendel's Genetics and Mendel's Inheritance in Humans 14. Non-Mendelian Genetics 15. Mitochondrial Genome- Mitochondrial Disease 16. Cytogenetics 17. Chromosome Abnormalities 18. The Molecular Basis of Inheritance 19. Replication and Repair 20. Transcription and RNA Processing 21. Translation and Posttranslational Modifications 22. Mutation and Repair of DNA 23. Genetics of Bacteria 24. Transposable Elements 25. Regulation of Gene Expression in Prokaryotes 26. Genetics of Viruses 27. The Organization and Control of Eukaryotic Genomes 28. Immunogenetic and Immunity 		
Teaching Activities (The time spent for the activities listed here will determine the amount of credit required)	<p>Weekly theoretical course hours Weekly practical course hours Reading activities Internet search and library work Designing and implementing materials Making a report Preparing and making presentations Midterm and revision for midterm Final exam and revision for final exam</p>		
Assessment Criteria		Number(s)	Weight (%)
	Midterm exam	2	60
	Assignment		
	Application		
	Project		
	Practice		
Quiz			

	Final exam	1	40				
	Total	3	100				
Workload of the Course	Activity	Number of Weeks	Duration (Weekly Hour)	End of Semester Total Workload			
	Weekly theoretical course hours	28	3	84			
	Weekly practical course hours						
	Reading activities						
	Internet search and library work	28	1	28			
	Designing and implementing materials						
	Making a report						
	Preparing and making presentations						
	Midterm and revision for midterm	2	4	8			
	Final exam and revision for final exam						
	Total workload			124			
	Total workload/ 25			4,96			
	Course Credit (ECTS)			5			
Contribution Level between Course Outcomes and Program Outcomes	No	Program Outcomes	1	2	3	4	5
	1	PO1					x
	2	PO2			x		
	3	PO3	x				
	4	PO4					x
	5	PO5	x				
	6	PO6	x				
	7	PO7	x				
	8	PO8	x				
	9	PO9	x				
	10	PO10	x				
	11	PO11	x				
	12	PO12		x			
	13	PO13	x				
	14	PO14	x				
Lecturer(s) and Contact Information	Lecturer's First/Last Name: Prof. Dr. Aysel UĞUR						
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