Course Syllabus

Code - Course Title	**BİY124 - Medical Biology and Genetics**
Course Type	II. SEMESTER
Laboratory + Practice	3+0
ECTS	**3.0**
Language of Instruction	Türkçe
Course Type	Required Courses
Course Instructor(s)	ÖĞR. GÖR. DR. EMRE ÇÖMLEKÇİ

Mode of Delivery	This course will only face-to-face training.
Place of Delivery	On Campus
Used Educational Platforms	Face-to-face
Prerequisites	There are no prerequisites for this required course.
Courses Recomended	None.
Recommended Resources	Tıbbi Biyoloji Ders Kitabı, Cerrahpaşa Tıp Fakültesi Yayın No:275, İstanbul, 2009.Prof. Dr. Hasan Veysi Güneş, Moleküler Hücre Biyolojisi, İstanbul Tıp Kitabevi, 3. Baskı, 2013.Bruce Alberts, Dennis Bray, Karen Hopkin, Alexander D Johnson, Julian Lewis, Martin Raff, Keith Roberts, PeterWalter. Essential Cell Biology, Fourth Edition, Garland Science Publishers, USA, 2013.Robert L. Nussbaum, Roderick R. Mcinnes, Huntington F. Willard. Thompson and Thompson Tıbbi Genetik, Güneş tıp Kitabevi, 2005.Başaran Ayşe. Tıbbi Biyoloji Ders kitabı. Pelikan Yayıncılık Ltd. Şti.,2009.
Work Placement	Not applicable
Aims of the Course	The purpose of the course is to provide students with fundamental knowledge in the fields of biology and genetics, and to teach them about genetic material, cells, and cellular processes.

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Introduction to medical biology, historical approach, general cell properties, cell examination methods.	
Week - 2		Cell organization (prokaryote-eukaryote comparison), cell membrane and properties.	
Week - 3		Cell structure and functions.	
Week - 4		Energy metabolism.	
Week - 5		Nature and function of genetic material, DNA-RNA, gene organization and regulation of gene expression.	
Week - 6		DNA packaging and structure of chromosome, cell cycle and DNA replication, transcription and translation.	
Week - 7		RNA structure, synthesis and function.	
Week - 8		Genetic code and protein synthesis, chromosomal structure and number anomalies, mutation and polymorphism.	

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 9		DNA damage and repair mechanisms, cell senescence, apoptosis and cancerization mechanisms.	
Week - 10		Basic principles of heredity and Mendelian inheritance in single gene diseases in humans.	
Week - 11		Cell cycle and cell division.	
Week - 12		Mutation, nutritional genes and the importance of biotechnological products.	
Week - 13		Molecular biology techniques.	
Week - 14		Genetics of inherited metabolic diseases.	

Learning Outcomes

#	Learning Outcome
1	Comprehends the structure of the cell, its organelles and the relations of cells with each other.
2	Learns the structural properties and replication mechanism of genetic material.
3	Comprehends the importance of genetic code and genetic control mechanisms for the cell.
4	Comprehends the types and characteristics of human inheritance models.
5	Understands the importance of genetics in nutritional disorders and in the creation of biotechnological products.

Sustainable Development Goals

✓ Health and Quality of Life

Course Theme

✓ Biotechnology and Genetics

AKTS Workload

Activity	Duration (Hour)	Count	Workload
Teorik Derse Katılım	3.00	14	42
Sınıf Dışı Çalışma (Ön Hazırlık & Pekiştirme Amaçlı)	1.00	14	14
Ödevler	0.00	0	0
Proje - Rapor - Sunum Hazırlama	0.00	0	0
Ara Sınav Hazırlığı (sınav süresi dahil)	1.00	1	1
Final Sınavı Hazırlığı (sınav süresi dahil)	1.00	1	1
Uygulama (Laboratuvar, Müzik/Enstrüman Uygulaması, Atölye/Saha Çalışması vb.)	1.00	14	14
Staj Uygulaması	0.00	0	0
		Calculated ECTS	**3.0**

Assessment Method and Passing Requirements

✓ Open-Ended Test ✓ Multiple Choice Test