

REGENERATIVE MEDICINE AND GENE THERAPY

1	Course Title:	REGENERATIVE MEDICINE AND GENE THERAPY
2	Course Code:	TIP2109
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	3
7	ECTS Credits Allocated:	3.00
8	Theoretical (hour/week):	1.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. ŞEHİME GÜLSÜN TEMEL
15	Course Lecturers:	Yok
16	Contact information of the Course Coordinator:	sehime@uludag.edu.tr 05322361646 Bursa Uludağ Üniversitesi Tıp Fakültesi Temel Tıp Bilimleri Binası Histoloji ve Embriyoloji Anabilim Dalı 16059 Nilüfer, BURSA
17	Website:	http://bilgipaketi.uludag.edu.tr/Ders/IndexENG/1116595
18	Objective of the Course:	The aim of this course is; 1. To teach the theoretical principles of regenerative medicine applications in tissues and organs in stem cell sciences and basic knowledge necessary to develop applications for new treatment approaches. 2. To provide the ability to develop new clinical treatment methods by targeted modifications of stem cells, cancer stem cells, cancer microenvironment and / or the immune system in the direction of basic research data by explaining the principles and laboratory applications to the participants. 3. To introduce the concept of gene therapy, nonintegrative and integrative vector systems and the new Crispr / Cas9 gene editing technique to the students. Discussing the different methods used for gene targeting and follow-up, teaching the rules and regulations for the use of gene therapy in the clinic
19	Contribution of the Course to Professional Development:	To teach the different methods used for gene targeting and tracking, from the laboratory to the clinic, the rules and regulations of the use of gene therapy.
20	Learning Outcomes:	
	1	At the end of this course students will 1. Know the theoretical bases of the regenerative medicine concept and discuss the cause and effects in relation of tissue and organ failure
	2	Discuss the application areas of tissue engineering and bioreactors in developing artificial tissue and organs.
	3	Know the theoretical bases of targeted treatment, understand and discuss the cause and effects in other targeted cell treatments, especially cancer cells.
	4	Understand the bases of hematopoietic and mesenchymal stem cells and gene therapy and know the different methods used in gene therapy

		5	Understand the bases of hematopoietic and mesenchymal stem cells and gene therapy and know the different methods used in gene therapy reactions associated with gene therapy and how to prevent them		
		6	reactions associated with gene therapy and how to prevent them		
		7			
		8			
		9			
		10			
21	Course Content:				
	Course Content:				
Week	Theoretical		Practice		
1	Definition of embryonic, adult and induced pluripotent stem cells				
2	Embryonic and Adult stem cell types				
3	Regenerative Medicine Concept				
4	Regeneration with Stem Cells Targeted Therapy				
5	Definition and strategies of targeted therapy				
6	Definition and Strategies of Tissue				
Activities			Number	Duration (hour)	Total Work Load (hour)
8	Definition and strategies of Gene Therapy		14	1.00	14.00
9	Nonintegrative Vector Systems in Gene				
Practicals/Labs			0	0.00	0.00
10	Study of integrative Vector Systems in Gene Therapy		14	4.00	56.00
Homeworks			0	0.00	0.00
11	CRISPR/CAS9 Gene Editing		0	0.00	0.00
Field Studies			0	0.00	0.00
Midterm Exams			1	10.00	10.00
Others			0	0.00	0.00
12	Gene Therapy and Clinical Trials		1	10.00	10.00
Total Work Load					100.00
Total work load/ 30 hr					3.00
14	Legal Regulations and Ethical Rules in				
ECTS Credit of the Course					3.00

23	Assesment	
TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		There is a multiple choice midterm and a final exam.

24	ECTS / WORK LOAD TABLE
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25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	5	5	0	5	0	5	4	0	5	0	0	0	0	0	0	0
ÖK2	5	0	5	0	0	5	4	0	5	0	5	0	5	0	0	0
ÖK3	5	5	0	0	5	0	3	0	5	5	5	0	0	0	0	0
ÖK4	5	0	5	0	0	5	0	5	0	5	0	5	0	0	0	0
ÖK5	5	0	5	0	5	0	0	5	0	5	0	5	0	0	0	0
ÖK6	5	0	5	0	5	0	5	0	5	0	5	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																

Contribution Level:	1 very low	2 low	3 Medium	4 High	5 Very High
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