

STEM CELL BIOLOGY

1	Course Title:	STEM CELL BIOLOGY
2	Course Code:	MBG4119
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	4
6	Semester:	7
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Dr. Öğr. Üyesi BURCU ERBAYKENT TEPEDELEN
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	Dr. Öğr. Üyesi Burcu ERBAYKENT TEPEDELEN e-posta: berbaykent@uludag.edu.tr 0 224 29 42847 Fen-Edebiyat Fakültesi, Moleküler Biyoloji ve Genetik Bölümü, Görükle Kampüsü, 16059 Bursa
17	Website:	
18	Objective of the Course:	The aim of this course is to examine the definition of stem cells, the use of stem cells in therapy and their application areas.
19	Contribution of the Course to Professional Development:	Providing the necessary theoretical knowledge for internship and work in research laboratories and companies working on stem cells,
20	Learning Outcomes:	
	1	Knowledge about the definition of stem cells
	2	To know the biology of stem cells
	3	Understanding stem cell types
	4	Knowledge about cancer stem cells
	5	Understanding stem cell differentiation
	6	Knowledge about stem cell therapies for different diseases
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Introduction and stem cell definitions	
2	Stem cell types	
3	Embryonic stem cells	
4	Adult stem cells	
5	Hematopoietic stem cells	

6	Mesenchymal stem cells	
7	Induced pluripotent stem cells	
8	Cancer stem cells	
9	Gene regulation in stem cell differentiation: Wnt signaling pathway	
10	Gene regulation in stem cell differentiation: Hedgehog signaling pathway	
11	Detection and imaging of stem cells	
12	Clinical use of stem cells	
13	Clinical use of stem cells	
14	Clinical use of stem cells	

22	Textbooks, References and/or Other Materials:	<p>1. Song Li, Nicolas L'Heureux, Jennifer Elisseeff, "Stem Cell and Tissue Engineering", World Scientific, 2011.</p> <p>2. Nadja M. Bilko (Editor), Boris Fehse (Editor), Wolfram Ostertag (Editor), Carol Stocking (Editor), Axel R. Zander (Editor), "Stem Cells and Their Potential for Clinical Application" (NATO Science for Peace and Security Series A: Chemistry and Biology) Springer, Netherlands, 2007.</p>
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23	Assesment
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TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	40.00

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	2	10.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	6.00	84.00
Homeworks	3	9.00	27.00
Projects	1	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	10.00	10.00
Others	0	0.00	0.00
Final Exams	1	10.00	10.00
Total Work Load			183.00
Total work load/ 30 hr			5.77
ECTS Credit of the Course			6.00

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	0	3	0	4	1	0	4	4	4	0	0	0	0	0	0
ÖK2	5	0	3	0	4	1	0	4	4	4	0	0	0	0	0	0
ÖK3	5	0	3	0	4	1	0	4	4	4	0	0	0	0	0	0
ÖK4	5	0	3	0	4	1	0	4	4	4	0	0	0	0	0	0

ÖK5	5	0	3	0	4	1	0	4	4	4	0	0	0	0	0	0
ÖK6	5	0	3	0	4	1	0	4	4	4	0	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			