



**AYDIN ADNAN MENDERES UNIVERSITY**  
**GRADUATE SCHOOL OF HEALTH SCIENCES**  
**STEM CELL AND REGENERATIVE MEDICINE (INTERDISCIPLINARY)**  
**STEM CELL AND REGENERATIVE MEDICINE INTERDISCIPLINARY**  
**STEM CELL AND REGENERATIVE MEDICINE INTERDISCIPLINARY MASTER**  
**COURSE INFORMATION FORM**

Course Title	Relations Between Cells and Micro Environment								
Course Code	KHÜ525		Course Level		Second Cycle (Master's Degree)				
ECTS Credit	6	Workload	153 (Hours)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course	Information will be given about the relationships between the stem cells and the place-organ.								
Course Content	Side face connections, cancer initiator cell, niche concept in stem cell, extracellular matrix, microenvironment of the stem cell and its relationship with the cells will be examined.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Demonstration, Discussion, Individual Study								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	60
Assignment	1	20

Recommended or Required Reading	
1	Sell S, Stem Cells Handbook, Humana Press, second edition, 2013
2	Alberio R, Epiblast Stem Cells, Humana Press, Methods and protocols, Wiley Blackwell, 2013
3	Regad T, Sayers TJ, Rees R, Principle of Stem Cell Biology and Cancer,
4	Healy L, Ruban L, Atlas of Human Pluripotent Stem Cells in Culture, Springer, 2015
5	Rich IN, Stem Cell Protocols, Humana Press, 2015

Week	Weekly Detailed Course Contents	
1	Theoretical	Course description and introduction
2	Theoretical	Side face connections
3	Theoretical	Communication mechanisms in the cell
4	Theoretical	Contact inhibition
5	Theoretical	The concept of niche in stem cells
6	Theoretical	Cancer initiator cell
7	Theoretical	Circulating cancer cell concept
8	Intermediate Exam	Mid-term exam
9	Theoretical	The concept of niche in cancer
10	Theoretical	Microenvironment and fibroblasts
11	Theoretical	Microenvironment and immune cells
12	Theoretical	Cellular stress
13	Theoretical	Extracellular matrix
14	Theoretical	Reverse Warburg effect
15	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	1	2	39
Assignment	2	18	1	38
Midterm Examination	1	24	2	26



Final Examination	1	48	2	50
			Total Workload (Hours)	153
			[Total Workload (Hours) / 25*] = ECTS	6
*25 hour workload is accepted as 1 ECTS				

### Learning Outcomes

1	Examine the intercellular relationship in stem cells
2	Discuss the concept of niche in stem cells
3	Have knowledge about microenvironment relations in stem cells
4	Have knowledge about the concept of circulating cells
5	Have an idea about the inverse Warburg effect

### Programme Outcomes (*Stem Cell and Regenerative Medicine Interdisciplinary Master*)

1	To have comprehensive and in-depth knowledge of Stem Cell and Regenerative Medicine
2	To have information about stem cell production and characterization
3	To learn stem cell sources, stem cell types and their differences
4	To understand the molecular and genetic structure of stem cells
5	To be able to learn and make stem cell culture methods
6	To be able to adapt the knowledge in the field of stem cells to research in line with current developments
7	To be able to use molecular laboratory methods used in stem cell research
8	Learning in vitro disease models and in vivo experiments related to stem cells
9	To have knowledge about stem cell therapies and clinical use
10	Conduct independent research in accordance with the principles of research and publication ethics

### Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	2	2	3	3	3
P4	2	2	2	2	2
P6	2	3	3	3	3

