



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	Stem Cell-specific Immunohistochemistry and Imaging Methods								
Course Code	KHÜ532		Course Level		Second Cycle (Master's Degree)				
ECTS Credit	6	Workload	153 (Hours)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course	The aim of this course is to teach immunofluorescence-immunohistochemistry methods used in stem cell studies and to explain imaging methods for stem cell tracking in the clinic								
Course Content	Microscopes used in stem cell studies, immunofluorescence imaging, marking and imaging methods used to follow stem cells in the body after clinical use will be explained.								
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 general information
2	Theoretical	Types of microscopes
3	Theoretical	Immunofluorescence staining
4	Theoretical	Immunohistochemical staining
5	Theoretical	Pluripotent stem cell-specific immunohistochemistry
6	Theoretical	Mesenchymal stem cell-specific immunohistochemistry
7	Theoretical	Immunohistochemistry in cancer stem cells
8	Intermediate Exam	Mid-term exam
9	Theoretical	Molecular imaging in stem cells
10	Theoretical	Stem cell marking
11	Theoretical	In vivo stem cell tracking
12	Theoretical	Stem cell imaging in clinical trials
13	Theoretical	Review of articles-I
14	Theoretical	Review of articles-II
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	Knows immunofluorescence-immunohistochemistry methods used in stem cell studies
2	Explain in vivo imaging methods used in root studies
3	Examine the imaging methods used in the follow-up after stem cell applications.
4	Knows molecular imaging in stem cells
5	Understand stem cell imaging in clinical studies

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	3	3	3	3	3
P2	3	3	3	3	3
P3	4	4	4	4	4
P4	3	3	3	3	3
P5	5	5	5	5	5
P7	4	4	4	4	4
P8	3	3	3	3	3
P9	3	3	3	3	3

