



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Pluripotent Stem Cell							
Course Code		KHÜ531		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	6	Workload	145 ( <i>Hours</i> )	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		To give an in-depth understanding of pluripotent stem cells and to give information about the potential of clinical use.							
Course Content		Human and mouse pluripotent stem cell sources, differences, pluripotent stem cell production, identification, markers are explained. Information about reprogramming, induced pluripotent stem cell definition, production and clinical use is provided.							
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	Pluripotent stem cells in mice
2	Theoretical	Pluripotent stem cell in human
3	Theoretical	Production of pluripotent stem cells
4	Theoretical	Pluripotent stem cell characterization
5	Theoretical	Pluripotent stem cell and signal transduction
6	Theoretical	Development of pluripotent stem cells and germ layers
7	Theoretical	The concept of naive and primed pluripotent stem cells
8	Intermediate Exam	Mid-term exam
9	Theoretical	History and definition of induced pluripotent stem cells (IPS)
10	Theoretical	Cell culture media for IPS
11	Theoretical	Reprogramming
12	Theoretical	Genome regulation technologies in pluripotent stem cells
13	Theoretical	IPS and differentiation
14	Theoretical	Pluripotent stem cell and clinical applications
15	Final Exam	Final exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	1	2	39
Assignment	2	14	1	30
Midterm Examination	1	24	2	26



Final Examination	1	48	2	50
Total Workload (Hours)				145
[Total Workload (Hours) / 25*] = <b>ECTS</b>				6
*25 hour workload is accepted as 1 ECTS				

### Learning Outcomes

1	Learns the sources of pluripotent stem cells and their production.
2	Gains knowledge of pluripotent stem cell markers.
3	Learns the definition and production of induced pluripotent stem cells.
4	Discuss the clinical use potential of pluripotent stem cells.
5	Know cell culture media for IPS

### 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	4	3	4	4	4
P2	5	5	5		5
P3	4	3	4		4
P4	2	3	3		2
P6	3	3	3	3	3
P9				4	

