AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Electron-microscopic Tecniques								
Course Code	THE522		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	4	Workload	98 *(Hours)*	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	Learning of electron microscopy techniques								
Course Content	It includes the techniques required to examine a biological material in the electron microscope.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading	
1	Electron Microscopy

Week	Weekly Detailed Course Contents	
1	Theoretical	Transmission electron microscopy (TEM) working principles
2	Theoretical	Scanning electron microscope (SEM) working principles
3	Theoretical	Preparation of the electron microscopy laboratory
4	Theoretical	to be considered issues in the electron laboratory P laboratory
5	Theoretical	Points to be considered during tissue removal for animal or human electron microscope, Fixation (fixation), fixative selection, detection period and chemical substances used in detection solutions, Important aspects of tissue detection
6	Theoretical	tissue washing, dehydration, transparency
7	Intermediate Exam	midterm exam
8	Theoretical	Introduction to the tissue of plastic material and embedding in plastic (blocking)
9	Theoretical	Preparation of glass blades, trimming, semi-thin sectioning (ultramicrotomy), painting and examination of semi-thin sections
10	Theoretical	Properties of grids, cleaning of heaters, film coating of heaters
11	Theoretical	Important points in taking thin sections, taking the sections into the heater, contrasting the sections
12	Theoretical	Examining and evaluating the sections and taking pictures
13	Theoretical	Fixation preparation errors and results in electron microscopy
14	Theoretical	Follow-up errors and results in electron microscopy
15	Theoretical	Evaluation errors and results in electron microscopy
16	Final Exam	final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	2	56
Lecture - Practice	14	1	2	42
			Total Workload (Hours)	98
			[Total Workload (Hours) / 25*] = **ECTS**	4
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Electron microscopic follow-up of tissues
2	Semi-thin and thin sections
3	Be able to prepare knives for cross section

4	To be able to make electron microscopic examination of the sections and necessary evaluations
5	interpretation of the errors encountered in electron microscopy

Programme Outcomes *(Histology and Embryology (Medical) Master)*	
1	To have detailed information about cell structure and function at microscopic level
2	To have theoretical and practical knowledge about experimental methods used in histology
3	To know the ethical rules for publishing and presenting a scientific study
4	To have sufficient knowledge about the laboratory methods used in fertilization and assisted reproduction
5	to have enough knowledge about the general characteristics of human embryology

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	3	4
P2	3	4	4	4	3
P3	3	4	3	4	4
P4	5	3	4	3	3
P5	3	4	3	4	4