



**AYDIN ADNAN MENDERES UNIVERSITY**  
**GRADUATE SCHOOL OF HEALTH SCIENCES**  
**HISTOLOGY AND EMBRYOLOGY**  
**HISTOLOGY AND EMBRYOLOGY (MEDICAL)**  
**HISTOLOGY AND EMBRYOLOGY (MEDICAL) MASTER'S WITHOUT THESIS**  
**COURSE INFORMATION FORM**

|  |  |              |             |        |                                |          |   |            |   |
|--|--|--------------|-------------|--------|--------------------------------|----------|---|------------|---|
| Course Title                                     | Microscopes and Digital Imaging  |              |             |        |                                |          |   |            |   |
| Course Code                                      | THE526   | Course Level |             |        | Second Cycle (Master's Degree) |          |   |            |   |
| ECTS Credit                                      | 6  | Workload     | 150 (Hours) | Theory | 2                              | Practice | 2 | Laboratory | 0 |
| Objectives of the Course                         | to learn and apply all steps in preparation of tissues which will be evaluated in different types of microscopes |              |             |        |                                |          |   |            |   |
| Course Content                                   | Microscope types and working principles, preparation of tissues  |              |             |        |                                |          |   |            |   |
| Work Placement                                   | N/A  |              |             |        |                                |          |   |            |   |
| Planned Learning Activities and Teaching Methods | Explanation (Presentation), Experiment, Demonstration, 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                               | Histoloji Konu Anlatımı ve Atlas |

| Week | Weekly Detailed Course Contents |   |
|------|---------------------------------|---|
| 1    | Theoretical                     | Introduction to microscopes   |
| 2    | Theoretical                     | Classification of microscope species  |
| 3    | Theoretical                     | light microscope  |
| 4    | Theoretical                     | preparation of tissue samples for light microscopy  |
| 5    | Theoretical                     | Light microscopic staining methods  |
| 6    | Theoretical                     | article discussion  |
| 7    | Intermediate Exam               | midterm exam  |
| 8    | Theoretical                     | Properties and applications of confocal microscope  |
| 9    | Theoretical                     | Dark field microscope features and usage areas  |
| 10   | Theoretical                     | Phase contrast microscope features and usage areas  |
| 11   | Theoretical                     | Fluorescence microscope properties and usage areas  |
| 12   | Theoretical                     | Inverted microscope properties and usage areas  |
| 13   | Theoretical                     | History of Scanning Electron Microscopy / development, working principles and application areas |
| 14   | Theoretical                     | article discussion  |
| 15   | Theoretical                     | article discussion  |
| 16   | Final Exam                      | final exam  |

| Workload Calculation |          |             |                                       |                |
|----------------------|----------|-------------|---------------------------------------|----------------|
| Activity             | Quantity | Preparation | Duration                              | Total Workload |
| Lecture - Theory     | 14       | 3           | 2                                     | 70             |
| Lecture - Practice   | 14       | 3           | 2                                     | 70             |
| Reading              | 10       | 0           | 1                                     | 10             |
|                      |          |             | Total Workload (Hours)                | 150            |
|                      |          |             | [Total Workload (Hours) / 25*] = ECTS | 6              |

\*25 hour workload is accepted as 1 ECTS

| Learning Outcomes |  |
|-------------------|--|
| 1                 | Explain and use light microscope types                     |
| 2                 | To be able to explain and use fluorescence microscope      |
| 3                 | To be able to define the principles of Electron Microscopy |



|   |   |
|---|---|
| 4 | To follow new imaging technologies and investigate the microscopes that are being developed |
| 5 | Defining a confocal microscope  |

**Programme Outcomes** (*Histology and Embryology (Medical) Master's Without Thesis*)

|   |   |
|---|---|
| 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  | 4  | 3  | 4  | 3  |
| P2 | 4  | 3  | 4  | 3  | 4  |
| P3 | 4  | 4  | 4  | 4  | 2  |
| P4 | 4  | 3  | 4  | 5  | 4  |
| P5 | 4  | 4  | 4  | 4  | 4  |

