Medicinski fakultet u Rijeci

**IZVEDBENI NASTAVNI PLAN**
**2021/2022**

Za kolegij

# Histological Techniques

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| Studij: | **Medical Studies in English (R)** (izborni) |
| | Sveučilišni integrirani prijediplomski i diplomski studij |
| Katedra: | **Zavod za histologiju i embriologiju** |
| Nositelj kolegija: | **Doc. dr. sc. Lenartić Maja, dipl. ing.** |
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| Godina studija: | **2** |
| ECTS: | **1.50** |
| Stimulativni ECTS: | **0.00 (0.00%)** |
| Strani jezik: | **Mogućnost izvođenja na stranom jeziku** |

## Podaci o kolegiju:

Course Description: The primary objective of this course is to familiarize students with the process of preparing tissue samples for histological examination, which holds significant importance in contemporary medical diagnosis. Additionally, the course aims to provide students with hands-on experience in working with human tissues in a laboratory setting, teaching them the necessary procedures for accurate diagnosis and effective treatment approaches.

Requirements for enrollment of courses:

The mandatory prerequisites for enrolling in the course include having attended the classes for Histology and Embryology Courses.

Anticipated Learning Outcomes for the Subject:

Upon successful completion of the course, students are expected to grasp the significance of specific histological techniques used in contemporary laboratory diagnostics, essential for the functioning of clinical medicine. Their prior knowledge of the microscopic structure of the human body and expertise in presenting individual substances and antigens will foster a deeper comprehension of pathomorphological alterations.

Acquiring knowledge of histological laboratory procedures, tissue preparation techniques for analysis, and contemporary methods of displaying individual tissues, cells, and antigens, including molecules on both the cell surface and inside cells, will enhance the ability to identify diverse diagnostic requirements encountered in clinical medicine.

Subject Contents: The course covers the following topics:

1. Preparation and Processing of Samples in the Histological Laboratory:

- Detailed procedures involving materials, chemicals, and laboratory utensils.

1. Paraffin Preparation of Histological Preparations:

- Techniques for embedding tissue samples in paraffin for sectioning and staining.

1. Preparation of Frozen Preparations:

- Techniques for freezing tissue samples for immediate sectioning and examination.

1. Classic Histological Staining:

- Overview of traditional staining methods to visualize tissue structures.

1. Histochemical Techniques:

- Methods for demonstrating specific chemical substances in tissues.

1. Immunohistochemical Techniques:

- Various immunofluorescent and immunoenzymatic techniques for detecting antigens in tissues.
- Direct and indirect staining methods.
- Signal amplification techniques.
- Antigen retrieval techniques.

By the end of the course, students will have a comprehensive understanding of these subject contents, enabling them to proficiently work in a histological laboratory and effectively utilize these techniques in clinical medicine for diagnostic purposes.

## Popis obvezne ispitne literature:

1. Anthony L. Mescher: Junqueira's Basic Histology (Text and Atlas), 14 <sup>th</sup> Edition, 2016 (selected chapters)

## Popis dopunske literature:

Supplement Literature:

2) Shafie Abdulkadir Hassan: Practical Histopathology (Made easy for laboratory professionals), 1st Edition

3) Thomas Boenisch et al. : Immunochemical Staining Methods, 3rd Edition, 2001.

4) S. Anil and R. Rajendran: Routine Histotechniques, Staining and Notes on Immunohistochemistry

In addition to the textbooks, students will be provided with relevant scientific papers related to the topics covered in the course. These papers will further enhance their understanding of histological techniques and their application in modern laboratory diagnostics and clinical medicine.

## Nastavni plan:

## Obveze studenata:

Students' Obligations:

1. Active Participation in Practical Sessions: Students are expected to actively engage in the production of histological preparations under the guidance of teachers. They will learn to apply advanced histochemical and immunohistological staining techniques, gaining hands-on experience in modern medical diagnostics.
2. Seminar Paper: With the guidance of teachers, students will be required to prepare a seminar paper on a specific topic within the scope of the course. They should utilize information from literature and reliable online sources to present a well-researched and comprehensive paper.

By fulfilling these obligations, students will develop practical skills in histological techniques and gain a deeper understanding of the challenges and advancements in the field of modern medical diagnostics.

## Ispit (način polaganja ispita, opis pisanog/usmenog/praktičnog dijela ispita, način bodovanja, kriterij ocjenjivanja):

Exam Conditions: In order to be eligible to take the exam, students must fulfill the following obligations:

1. Attendance: Regular attendance in classes is required.
2. Active Participation: Students are expected to actively participate in seminars and exercises.
3. Seminar Paper: Each student must prepare and present a seminar paper on a topic related to the course.

Evaluation: The student's performance will be assessed and evaluated based on the following criteria:

1. Class Performance: The evaluation of student's work during classes, including participation in exercises and the quality of the presented seminar paper, will contribute to up to 70% of the final grade.
2. Final Exam: The final exam will be a written examination and will account for 30% of the final grade.

By fulfilling the above requirements and performing well in both class activities and the final exam, students will have the opportunity to achieve a favorable overall grade in the course.

## Ostale napomene (vezane uz kolegij) važne za studente:

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## SATNICA IZVOĐENJA NASTAVE 2021/2022
Histological Techniques

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## Popis predavanja, seminara i vježbi:

**ISPITNI TERMINI (završni ispit):**