# SYLLABUS

**1. Course title:**

Cell and Tissue Cultures

**2. Code:**

**3. Cycle of study:**

1

**4. ECTS credits:**

3

**5. Type of course:**

Mandatory

**6. Prerequisites:**

/

**7. Class restrictions:**

/

**8. Duration / semester(s):**

1 2

**9. Weekly contact hours and student workload:**

| | Semester (1) | Semester (2) | (for two-semester courses) | Workload: (hours) |
|---|---|---|---|---|
| 9.1. Lectures | 2 | | Classes: | 22,50 |
| 9.2. Seminars | 0 | | Individual work: | 54,17 |
| 9.3. Laboratory / Practice classes | 0 | | In total: | 76,67 |

**10. Faculty:**

Faculty of Pharmacy

**11. Department/study program:**

Cosmetology

**12. Lecturer:**

Dr.sc. Esmeralda Dautović°°°

**13. Course aims:**

The aim of the course is to acquire fundamental knowledge and understanding of the principles of in vitro research on cell and tissue cultures, with an emphasis on their application in modern cosmetology research.

## 14. Learning outcomes:

**Upon completion of the lectures and successful examination, students will be able to:**

- **Understand the basic characteristics of cell and tissue cultures and their application in in vitro research**
- **Identify the conditions required for cell growth and maintenance in culture**
- **Become familiar with basic techniques of cell isolation and separation**
- **Recognize sources of contamination and apply preventive measures when working with cell cultures**
- **Acquire knowledge of methods for analyzing the cell cycle, proliferation, viability, and cell death**
- **Comprehend the importance of cell cultures in testing the safety and efficacy of bioactive substances, particularly in the context of the cosmetic industry**

## 15. Course content:

**Introduction to cell and tissue cultures: definition, history, and applications**

- **Basic characteristics of cell and tissue cultures**
- **Equipment and fundamental conditions for cultivation and maintenance of cell cultures (sterility, temperature, $CO_2$ incubators, growth media)**
- **Techniques for cell isolation and separation**
- **Contamination of cell cultures: types, detection, and prevention**
- **Methods for analyzing the cell cycle, proliferation, viability, and cell death**
- **Application of cell cultures in testing bioactive components and in the development of dermocosmetic products**
- **Cell cultures in the production of biopharmaceuticals and cosmetic raw materials**

## 16. Learning methods:

**Lectures, seminars, consultations, workshops, independent assignments**

## 17. Assessment methods:

**Quality assurance and achievement of learning outcomes:**
**Continuous monitoring of student performance during lectures, seminars, and project assignments, preparation of essays, evaluation of presentations, and tests.**
**Theoretical knowledge will be assessed through paetial exams during the course, as well as final, remedial, and additional remedial exams.**
**As part of pre-exam requirements, students are required to prepare an individual or group seminar paper covering a selected topic within the course content, which will be separately evaluated. The seminar paper must be submitted in written form to the course instructor for review and grading, and it may also be presented orally. In the preparation and presentation of a group seminar paper, all members of the group are required to participate, and each student's contribution will be evaluated individually.**
**The final exam may be written and/or oral. All students have the right to take the final exam. During the final exam, students retake any parts of the mid-term exam/test that have not been passed.**
**All forms of assessment are recognized as part of the cumulative exam if the achieved result is positive in each individual assessment and amounts to at least 54% of the total required knowledge and skills.**
**To successfully pass the course, a student must achieve a minimum of 54 cumulative points.**
**If a student is found cheating during an exam, they will not be allowed to take the exam in the next examination period.**
**Student obligations / Minimum and maximum number of points:**

- **Attendance and active participation: 5–10 points**
- **Seminar paper (on an assigned topic): 11–20 points**
- **Partial exam / Test: 38–70 points**

## 18. Assessment components:

**10 (A) -95-100- outstanding performance without errors or with minor errors**
**9 (B) - 85-94-above the average, with some errors**
**8 (C) - 75-84- average, with noticeable errors**
**7 (D) - 65-74 generally good, but with significant shortcomings**
**6 (E) - 54-64- meets the minimum criteria**
**5 (F, FX) <54- does not meet the minimum criteria**

## 19. Mandatory reading list:

**Softić A., Smajlović A., Srabović N. Ćelijske kulture u biohemijskim istraživanjima. OFFSET. Tuzla, 2021.**

## 20. Additional reading list:

**21. Web sources:**

**22. Applicable from the academic year:**

**2025/2026**

**23. Adopted in the Faculty/Academy session:**