

SYLLABUS

1. Course title:

BIOLOGY

2. Code:

3. Cycle of study:

4. ECTS credits:

5. Type of course:

☒ Mandatory ☐ Elective

6. Prerequisites:

There is no prerequisites;

7. Class restrictions:

No access restrictions;

8. Duration / semester:

9. Weekly contact hours:

9.1. Lectures:

2

9.2. Seminars:

0

9.3. Laboratory/Practice classes:

2

10. Faculty:

Faculty of Technology

11. Department/study program:

Food Technology, Engineering Environmental Protection

12. Lecturer:

13. Lecturer's e-mail:

14. Web site:

--

15. Course aims:

The aim of the course is that students adopt:

- basic knowledge of the morphology, structure and function of the cell as the basic unit of life;
- basic knowledge of the types of plant and animal tissues;
- the principle of dynamic linkage between structure and function in the station,
- knowledge of the continuity of cellular processes in plant and animal organisms.

16. Learning outcomes:

After successfully mastering the course students will:

- acquire knowledge about fundamental biological concepts and principle of life;
- have a basic knowledge of the structure and dynamics of animal and plant cells and tissues;
- master practical skills in working with a light microscope and microscopic sample preparation methods;
- be able to distinguish between different plant and animal tissues;
- Understand the importance of research into cell biology and histology and their application;y.

17. Course content:

Introduction to Cell Biology; Methods in cell biology; Basic Plan of Cellular Organization; Prokaryotic and eukaryotic cells; The chemical composition of the cell; Biology of the cell membranes; Intercellular interactions. Organization of the cell and its organelles; Cytoskeletal and cell viability. Cellular signaling; communication between cells and the environment; Organelles of cells and their role; Energy flow in cell; Cellular respiration; Photosynthesis; Nucleus and chromosomes, DNA replication; Genetic code, transcription and translation of genetic code. Cell division: mitosis and meiosis. Cytogenetics. Recombinant DNA and genetic engineering. Introduction to histology: organization of plant and animal tissues. Ecology and ecogenetics, man as ecological factor, radiation and inheritance. Laboratory exercises are based on theoretical basis of cellular biology and histology and microscopic observation of different types of cells and tissue organization.

18. Learning methods:

Learning methods in the course are:

- Lectures using multimedia resources, techniques of active learning with active participation and discussion of students;
- Preparation and presentation of group and individual seminar papers.
- Laboratory exercises

19. Assessment methods:

After half a semester (in the 8th week) students writing test (the first mid-term), which includes previously treated topics with lectures. The test consists of multiple-choice tasks, tasks simple recall or essay assignments, and picture / diagram of certain processes. A student on the first prelim assignments can achieve a maximum of 15 points. In the 13th week of the semester students take the writing test (second mid-term) covering the treated topics with lectures from the second part of the semester. Student on the second prelim assignments can achieve a maximum of 15 points. Both tests taken by all students in the course at the same time thereby achieving uniformity of the level of knowledge that is being tested, as well as the conditions under which the student takes the exam. As part of the pre-exam students are required to make individual or group seminar that will cover specific topics from the contents of the subject. The seminar paper is submitted to the subject teacher in writing form on review, and then presented orally. All group students whose participation is valued individually participate in the creation and presentation of group seminar work. The student can achieve 0 to 6 points for the seminar work. Colloquium exercise is organized at the end of the semester. The maximum number of points a student can earn is 10 points. For continuous activity and presence in lectures and exercises throughout the semester the student can achieve 0 to 4 points. Final exam is in written or oral form. All students have the right to go to the final exam. The maximum number of points a student can achieve on the final exam is 50. The minimum number of points on the final exam is 25. Checks on all forms of knowledge are recognized as a cumulative test if the result is positive after each individual check and is at least 50% of the total of the predicted and / or required knowledge and skills. In order for a student to pass the subject must have at least 54 cumulative points of which at least 25 points on the final exam. The student's final success is expressed in numeric, descriptive or letter assessment to the following scale:

Number of points	Grade	Letter grade
0-53	5 (five)	F
54-64	6 (six)	E
65-74	7 (seven)	D
75-84	8 (eight)	C
85-94	9 (nine)	B
95-100	10 (ten)	A

20. Assessment components:

The assessment of the exam is based on the total number of points the student has obtained by fulfilling the pre-requisites and passing the exam and is determined according to the following scale:

Student Obligations	Points
Presence and activity in class	4
Seminar paper and presentation	6
Practical Exam	10
Mini tests	30
Total prerequisites	50
Final Exam	50

21. Required reading list:

1. Hercegovac A, Hodžić S., Halilović E. (2016): Osnovi biologije: Sorelli, Tuzla.
2. Cooper M. G., Hausman R.: Stanica: molekularni pristup, Medicinska naklada, Zagreb, 2010.

22. Web sources:

According to the professor instructions, and in accordance with teaching units.

23. Applicable starting from the academic year:

2015/16

24. Adopted in the Faculty/Academy session: