SYLLABUS

1. Course title:

MICROBIOLOGY

2. Code:

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

(●) Mandatory ( ) Elective

6. Prerequisites:

7. Class restrictions:

8. Duration / semester:

1 3

9. Weekly contact hours:

9.1. Lectures: 3

9.2. Seminars: 0

9.3. Laboratory/Practice classes: 2

10. Faculty:

Faculty of Technology

11. Department/study program:

Agronomy

12. Lecturer:

PhD Snježana Hodžić, Associate Professor

13. Lecturer's e-mail:

snjezana.hodzic@untz.ba

14. Web site:

www.untz.ba

15. Course aims:

15.1. Introduce a student with morphology, physiology, ecology of microorganisms (bacteria, fungi, protozoa, monoclonal algae and viruses) and their beneficial and harmful effects on nature and for humans.15.2. To introduce students to the role of microorganisms in the circulation of matter in nature.15.3. To introduce students to the processes of decay, the emergence of plant and animal diseases of importance in agronomy, as well as to familiarize themselves with the sensitivity of microorganisms to physical and chemical agents.

16. Learning outcomes:

After successfully mastering the course, students will be able:
16.1. To differentiate the prokaryotic from the eukaryotic type of cell organization;
16.2. To analyze the properties of viruses, bacteria, fungi, algae and protozoa as both pathogenic and useful species;
16.3. To organize the necessary conditions for work in the microbiological laboratory, to prepare materials for sterilization and disinfection and to perform the same;
16.4. To analyze native and dyed preparations; Microscopy with a dry and immersion lens; Application methods for identification and interpret and comment on the results obtained.

17. Course content:

Through the course Microbiology students are introduced to the general terms in microbiology, structure and function of prokaryotic and eukaryotic cells, general characteristics of mo, microbial metabolism and systemics of microorganisms. Microbiology of the natural environment (water, food, air and soil) encompasses the influence of environmental factors on the growth and dissemination of microorganisms, as well as the presence and role of microorganisms in these environments. The basic knowledge of microbiology enables the student to gain insight into the practical significance of microorganisms in these areas.
Laboratory exercises are designed to familiarise students with basic microscope techniques and preparation of microbiological tools, enabling the study of morphological characteristics of major groups of microorganisms (bacteria, fungi, protozoa, single-cell algae), as well as familiarisation with the basic techniques for detection of bacteria, fungus, protozoa and viruses and quantitative and qualitative designation of microorganisms in the air and the soil.

18. Learning methods:

The following activities of successful learning are planned: theoretical lectures with the use of visual teaching aids, concrete experience, observation and reflection, methods of presentation and discussion, active learning techniques and active participation and discussion between students in lectures and laboratory exercises.

19. Assessment methods:

Knowledge and skills are evaluated continuously during the semester through: partial test -T1 and T2, colloquium-K from laboratory exercises, final exam, seminar work and attendance and activity in exercises and lectures. Students are obligated to undertake all forms of exams during the semester. The exam of laboratory exercises is passed through the test and is organized after the exercises are completed. The colloquium consists of a test of 20 questions (open questions, questions with multiple answers, tome/false questions, recognition of microscope slides). The student can achieve a maximum of 10 points.
Partial exam I and includes review of knowledge acquired through lectures (teaching units 1 to 5).
Partial exam II reviews the knowledge acquired through lectures (teaching units from 5 to 10).
Partial exams I and II are in written form and consist of 40 questions. The student can have a maximum of 15 points on each partial exam.
Within the scope of the exam pre-requisites, the student can conduct seminar work on the contents of the subject, which he submits in written form for examination and evaluation, and can achieve a maximum of eight points.
Attendance at lectures and exercises is evaluated with a maximum of two points (lectures and exercises are mandatory). During pre-exam activities, the student can achieve a maximum of 50 points.
The final exam is organized in writing and oral exam and covers the entire course. The requirement for the oral exam is the written exam. The written final test contains 60 questions, and the student can achieve a maximum of 20 points. The written exam is 50% of the test points earned. On the oral part of the exam, the student draws three questions, each question worth ten points. The oral exam is passed if the student answers all three questions so that he can achieve a minimum of 18 or a maximum of 30 points.
The maximum number of points a student can achieve through the written and oral final exam is 50 points.
In order for a student to complete the course, they must have a minimum of 54 cumulative points, of which at least 28 points (10 in the written and 18 in the oral) 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 exam score is based on the total number of points the student has obtained by fulfilling the pre-requisites and completing the final exam, and it contains a maximum of 100 points and is determined according to the following scale:
Attendance at lectures and exercises 2 points;
Seminar work 3 points;
Colloquium I and II 15 points (7,5+7,5);
Partial test I and II 30 points (15+15);
Final Exam 50 points.

21. Required reading list:

1. Duraković S. (1996) General Microbiology; Medical Biochemists Zagreb
2. Durakovic S., Redžepovic S. (2003) Introduction to General Microbiology, Kugler
3. Duraković S. Duraković L. (1997) Manual for Laboratory of Microbiological Laboratory, Part I of Zagreb

22. Web sources:

23. Applicable starting from the academic year:

2016/17

24. Adopted in the Faculty/Academy session: