[Medicinski fakultet u Rijeci]

Curriculum
2024/2025

[Za kolegij]

Applied microbiology

Study program:	**Medical Studies in English (R)** (elective) [Sveučilišni integrirani prijediplomski i diplomski studij]
Department:	**[Zavod za mikrobiologiju i parazitologiju]**
Course coordinator:	**prof. dr. sc. Šantić Marina, dipl. sanit. ing.**
Year of study:	**3**
ECTS:	**1.5**
Incentive ECTS:	**0 (0.00%)**
Foreign language:	**Possibility of teaching in a foreign language**

Course information:

The course Applied Microbiology is an elective course in the third year of the Integrated Undergraduate and Graduate University Study of Medicine in Englesh and consists of 25 hours of seminars (1.5 ECTS). The course is conducted in the lecture halls of the Faculty of Medicine, in the premises of the Department of Microbiology and Parasitology through MS teams and through the platform "Merlin".

This course aims to introduce students to the many areas of application of microbiological knowledge in drug production, cosmetic and food industry, decomposition of toxic waste, genetic engineering, etc. During this course students develop oral communication skills teamwork, solve problems and draw logical conclusions.

Each student is expected to actively participate in discussions and seminar assignments.

List of assigned reading:

All chapters that the student needs to know in detail will be listed in class.

List of optional reading:

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Curriculum:

[Seminari] list (with titles and explanation):

S1. Introduction to applied microbiology and food microbiology

Show the course curriculum. Define student obligations during the course. Explain why food is a potential substrate for microorganisms. Be able to define and explain the mechanisms of food spoilage and the parameters that affect food spoilage. Understand and explain the metabolic pathways of microorganisms. Distinguish and explain diseases caused by food-borne microorganisms.

S2. Water microbiology

Distinguish contaminated from uncontaminated aquatic environment, state and explain the types of water contamination. List and describe individual microorganisms that are used as indicators of water pollution. List and describe the procedures and methods used to prevent waterborne infections.

S3. Bioremediation

Be able to explain wastewater treatment procedures and water and sludge treatment procedures to obtain drinking water. Recognize the latest achievements in the field of bioremediation, ie the latest procedures for wastewater treatment through microorganisms.

S4. Emergent microorganisms

Distinguish and explain diseases caused by emergent microorganisms. Explain the pathogenesis of the disease, prevention and treatment.

S5. Biological agents

Distinguish and enumerate biological agents or bioweapon. Explain the pathogenesis of the disease, prevention and treatment.

Student obligations:

Each student is expected to attend all teaching units, actively participate in discussions. A student may be absent from a total of 30% of teaching solely for health reasons, which justifies with a medical certificate. If a student justifiably or unjustifiably misses more than 30% of teaching, he / she cannot continue to follow the course and loses the opportunity to attend the final exam. In doing so, he earned 0 ECTS credits and was rated with mark F.

Exam (exam taking, description of the written/oral/practical part of the exam, point distribution, grading criteria):

ECTS grading system:

Student assessment is carried out in accordance with the current regulations of the University of Rijeka, adopted by the Faculty Council of the Faculty of Medicine in Rijeka.

Students' performance will be evaluated during the course and at the final exam. Out of a total of 100 credits, a student can earn 50 credits during the course, and 50 credits at the final exam.

The maximum of 50 credit points can be earned during the course, and at least 50% (25 credit points), are necessary in order to take the final exam. Students who earn 0-49.9% (0-24.9 credit points) during the course, earn an F (fail) grade, no ECTS credits, and must re-enroll in the course.

During the course, the student can earn a maximum of 50 credit point by actively participating in classes, completing seminar assignment.

I. During the course, the following are evaluated:

a) Seminar assigment. Maximun of 50 points.

Final Exam (50 credit points in total)

Who MAY take the final exam: Students who have scored 25 or more credits during the course will take the final exam, where they can additionally earn a maximum of 50 credits.

Who MAY NOT take the final exam: Students who have earned less than 24.9 points during the course are not eligible for the final exam (they re-enroll in the following academic year).

The final exam consists of a written part. The student in the final exam must pass at least 55% of the written test. The scoring method for the final exam is shown in Table 2.

Table 2. Assessment method at final written (55% pass threshold) and oral examination

Written exam

55%-neprolazno

55 – 59,99% = 10

60 – 64,99% = 22

65 – 69,99% = 28

70 – 74,99% = 30

75 – 79,99% = 34

80 – 84,99% = 36

85 – 89,99% = 46

90 – 94,99% = 48

95 – 100% = 50

Assessment in the ECTS system is done by absolute distribution, ie on the basis of final achievement
(credit points earned during the course are added to the points from the final exam):
A = 90 - 100%
B = 75 - 89,9%
C = 60 - 74,9%
D = 50 - 59,9%
F = 0 - 49,9%

The grades in the ECTS system are translated into the numerical system as follows:
A = escellent (5)
B = very good (4)
C = good (3)
D = sufficient (2)

F = insufficient (1)

Other notes (related to the course) important for students:

The course contents and all course related information are available on the web pages of the Faculty of Medicine, University of Rijeka and the Department of Microbiology and Parasitology or at Merlin and MS teams.

COURSE HOURS 2024/2025

Applied microbiology

[Seminari] (Place and time or group)
17.04.2025
S1. Introduction to applied microbiology and food microbiology: • [ONLINE] (10:00 - 15:00) [1468]   ○ AM
prof. dr. sc. Šantić Marina, dipl. sanit. ing. [1468]
25.04.2025
S2. Water microbiology: • [ONLINE] (09:00 - 14:00) [1468]   ○ AM
prof. dr. sc. Šantić Marina, dipl. sanit. ing. [1468]
28.04.2025
S3. Bioremediation: • [ONLINE] (12:00 - 17:00) [1468]   ○ AM
prof. dr. sc. Šantić Marina, dipl. sanit. ing. [1468]
29.04.2025
S4. Emergent microorganisms: • [ONLINE] (13:00 - 18:00) [1468]   ○ AM
prof. dr. sc. Šantić Marina, dipl. sanit. ing. [1468]
05.05.2025
S5. Biological agents: • [ONLINE] (13:00 - 18:00) [1468]   ○ AM
prof. dr. sc. Šantić Marina, dipl. sanit. ing. [1468]

List of lectures, seminars and practicals:

[SEMINARI] (TOPIC)	Number of hours	Location
S1. Introduction to applied microbiology and food microbiology	5	[ONLINE]
S2. Water microbiology	5	[ONLINE]
S3. Bioremediation	5	[ONLINE]
S4. Emergent microorganisms	5	[ONLINE]

S5. Biological agents	5	[ONLINE]

EXAM DATES (final exam):
