SYLLABUS

1. Course title:

Pharmaceutical technology II

2. Code:

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3. Cycle of study:

1

4. ECTS credits:

9

5. Type of course:

(●) Mandatory ( ) Elective

6. Prerequisites:

There are no prerequsites for studing this subject.

7. Class restrictions:

None.

8. Duration / semester:

1 8

9. Weekly contact hours:

	Semester (1) 8	Semester (2) 8
9.1. Lectures:	5	
9.2. Seminars:	0	
9.3. Laboratory/Practice classes:	4	

10. Faculty:

Faculty of Pharmacy

11. Department/study program:

Pharmacy (integrated 1st and 2nd cycles)

12. Lecturer:

Merima Ibišević, phD; Assistant professor

13. Lecturer's e-mail:

merima.ibisevic@untz.ba

14. Web site:

www.frmf.untz.ba

15. Course aims:

The aim of the Pharmaceutical Technology II course at the Faculty of Pharmacy is to introduce students to the basic principles of industrial production of pharmaceutical forms and to acquire knowledge about the latest technological procedures for the production and testing of medicinal forms.

16. Learning outcomes:

Student can recognize and apply legal guidelines and good practice rules in the development, production, and testing of medicines on an industrial scale. The student can compare and select pharmaceutical-technological operations in manufacturing, as well as anticipate problems and propose solutions during the production process. The student is able to prepare a proposal for the development of pharmaceutical dosage forms (aerosols, inhalation powders, tablets, controlled-release forms, matrix and reservoir systems).

17. Course content:

Procedure for obtaining a marketing authorization for a medicinal product;Documentation required for obtaining a marketing authorization for human medicinal products.Good practices (GMP, GMP API, GSP, GQCLP, GLP, GPP); Pharmacovigilance;Preformulation studies and quality assurance.Sterilization, sterility testing;Microbiological quality of pharmaceutical products.Water for pharmaceutical use (distillation, ion exchangers, reverse osmosis)Parenteral dosage forms (injections, infusions).Ophthalmic dosage formsInhalants, aerosols. Capsules. Tablets (manufacturing, excipients used in tablet production, tablet testing).Coated solid dosage forms (tablets, dragees, film-coated tablets, capsules).Oral dosage forms with controlled, prolonged, and delayed release.Homeopathy.Packaging materials and technology.Incompatibilities, stability, and stabilization of dosage forms.Blood, blood derivatives, serums, vaccines. Biotechnological drugs.Nanotechnology

18. Learning methods:

The lectures will cover the entire material provided by the curriculum. Attendance of students at the lecture is mandatory. Work material from lectures will be available to students.Experimental exercises will be held in two cycles, each of which ends with a colloquium. In principle, the experimental exercises follow the corresponding teaching units from the lectures.During the lectures, students will also have workshops where they will discuss recipes, dose corrections and different formulation

19. Assessment methods:

Activity - through attendance at lectures and exercises, a student can earn 0-10 points.
I and II colloquium - are done as part of laboratory exercises, and include the theory and recipes covered in the exercises. Colloquies carry a maximum of 20 points each.
The final exam - the knowledge check implies the consolidation of the entire material covered. The maximum number of points that a student can get on the final exam is 50, and 30 points are required to pass. The exam is held in writing and/or orally.

The number of points is determined according to the following scale:
Activity 0-10
I colloquium 12-20 points
II colloquium 13-20 points
Final exam 30-50 points

20. Assessment components:

10 (A)-95-100 -outstanding performance without errors or with minor errorss
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)-55-64 -meets the minimum criteria
5 (F,FX)<55 -does not meet the minimum criteria

21. Required reading list:

1. Mark Gibson (2012). Preformulacija i formulacija lijekova, Beograd
2. Sabira Hadžović (2005). Farmaceutska tehnologija: Industrijska farmacija, Sarajevo
3. Romana Senjković (1994). Osnovi oblikovanja lijekova, Školska knjiga, Zagreb

22. Web sources:

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23. Applicable starting from the academic year:

2023/2024.

24. Adopted in the Faculty/Academy session:

17.11.2025.