SYLLABUS

1. Course title:

ACTIVE PRINCIPLES FROM PLANTS

2. Code:

3. Cycle of study:

1

4. ECTS credits:

2

5. Type of course:

○ Mandatory ◉ Elective

6. Prerequisites:

Student does not have to pass any subject before this.

7. Class restrictions:

No restrictions

8. Duration / semester:

1 4

9. Weekly contact hours:

9.1. Lectures:	2
9.2. Seminars:	0
9.3. Laboratory/Practice classes:	0

10. Faculty:

Faculty of Farmacy

11. Department/study program:

Farmacy (integrated I and II cycle)

12. Lecturer:

dr. sc. Ermina Cilović Kozarević, assoc. prof.

13. Lecturer's e-mail:

ermina.cilovic@untz.ba

14. Web site:

www.frmf.untz.ba

15. Course aims:

- To acquaint students with modern medicines that originate from plants.
- Familiarize yourself with the active principles from plants that are responsible for a positive effect on human health and get to know the preliminary analytical methods for their detection.

16. Learning outcomes:

Students who continuously performed their duties during the entire teaching period will be able to:
- recognize the importance of plants in modern human treatment
- know the pharmacological properties of certain active principles from plants (phenolic compounds, essential oils...)
- application of a simple method of confirming the identity of active principles.

17. Course content:

The role and importance of bioactive natural substances in drug discovery.
Modern drugs of natural origin (morphine - Papaver somniferum, cardioactive heterosides - Digitalis sp., cocaine - Erythroxylum sp., colchicine - Colchicum autumnale, vinblastine, vincristine - Vinca minor, Vinca major)
Phenolic compounds (flavonoids, phenolic acids, tannins) - their antioxidant significance
Essential oils - their antimicrobial significance
Plant extracts - cytotoxic activity
Application of thin-layer chromatography in the detection of bioactive natural substances.
Chemical characterization of bioactive natural substances.
Modern testing of bioactive natural substances.
Seminars.

18. Learning methods:

Teaching methods: lectures (theoretical teaching) and seminars. The lectures include the entire material provided by the curriculum and are conducted ex cathedra. Work material from lectures is available to students.
The student's seminar work is a mandatory group team project.

19. Assessment methods:

Knowledge testing methods: final exam, seminar paper. The final exam is written and/or oral in the scheduled exam times and contains essay questions, questions with short answers, and questions with multiple choice answers. Topics for seminar papers are assigned by the teacher at the beginning of the semester. Seminar papers are done in groups and defended publicly during lectures.
The exam grade is determined according to the following scale:

Student obligations	Points
Seminar paper	50 (minimum 28 points)
Final test	50 (minimum 27 points)

20. Assessment components:

The final success of the student is evaluated using the grading scale as follows:
10 (A) - outstanding performance without errors or with minor errors, 95-100 points
9 (B) - above the average, with some errors, 85-94 points
8 (C) - average, with noticeable errors, 75-84 points
7 (D) - generally good, but with significant shortcomings, 65-74 points
6 (E) - meets the minimum criteria, 55-64 points
5 (F, FX) - does not meet the minimum criteria, below 55 points
The grade 6 (E) is the lowest passing grade.

21. Required reading list:

1. Authorized lectures by teachers.
2. Šarić-Kundalić B, Ademović Z, Mazić M (2019). Introduction in Pharmacognosy 2, Tuzla (34-103).
3. Bioactive natural products, detection, isolation and structural determination, Second Edition, 2008.

22. Web sources:

1.Canell RJP. How to approach the isolation of a natural product.
https://catbull.com/alamut/Bibliothek/How_to_Approach_the_Isolation_of_a_Product.pdf

23. Applicable starting from the academic year:

2023/2024.

24. Adopted in the Faculty/Academy session:

17.11.2025.