

## SYLLABUS

**1. Course title:**

SUSTAINABLE PHARMACY

**2. Code:****3. Cycle of study:**

1

**4. ECTS credits:**

2

**5. Type of course:** Mandatory  Elective**6. Prerequisites:**

No prerequisites

**7. Class restrictions:**

No class restrictions

**8. Duration / semester:**

1

3

**9. Weekly contact hours:**

9.1. Lectures:

2

9.2. Seminars:

0

9.3. Laboratory/Practice classes:

0

**10. Faculty:**

Faculty of Pharmacy

**11. Department/study program:**

Pharmacy

**12. Lecturer:**

Franc Andrejaš, Ph.D., associate professor

**13. Lecturer's e-mail:**

franc.andrejas@untz.ba

**14. Web site:**

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**15. Course aims:**

Getting acquainted with the ecological aspects of production and application of pharmaceuticals, the basic postulates of sustainable development and measures for reduction the impact of pharmaceutical activity on all environmental components.

**16. Learning outcomes:**

After successfully passing the course, the student will be familiar with the basics of sustainable development and able to:

- Fully understand the interaction between anthropogenic and natural factors in the environment;
- Develop and conduct activities toward to of economic development of pharmaceutical activities, with full respect to the other aspects of sustainable development.

**17. Course content:**

Introduction to the subject. Presentation of the study area; History and concept of sustainable development; Sustainable development: concept and structure (2 lectures); Ecological aspect of sustainable development; The basics of environmental management: waste streams management; Cleaner production. Industrial Ecology; Recapitulation. TEST; Pharmaceutical products and environment: from problems to solutions; Reduction of ecological "fingerprint" of the use of pharmaceuticals (2 lectures); Use of pharmaceuticals and disposal of pharmaceutical waste (2 lectures); Pollution emission management; Recapitulation. TEST

**18. Learning methods:**

Lectures, group and individual consultations. Lectures will be multimedia supported when appropriate, with the expected active participation of students in the discussion. Consultations will facilitate and deepen understanding of the subject matter.

**19. Assessment methods:**

Throughout the course, students are required to attend lectures and exercises on a regular basis, which will be monitored by the teacher and, on a dedicated form, keep records. During the semester, the student can be absent from a maximum of three lectures. In the case of more unexcused absences, the student loses the right to the signature of the teacher.

- TESTS - Two tests throughout the semester. Each test consists of a maximum of 20 short theoretical questions related to the previously processed material and carries 45 points (for a passing grade, one should achieve a minimum of 24 points). Tests are usually conducted after every six weeks of teaching, whereby the subject teacher will announce them to the students at least two weeks before each test.
- FINAL EXAM - Students who have collected the minimum required number of points for the pass grade (54 points) by all criteria, have the right on deserved grade or to use the option of additional (verbally or in writing exam) try to get a higher final grade.

All the students who did not pass one of the tests (or both) or who are not satisfied with the grade, but who have completed all other obligations of the course (have the signature of the subject teacher in the index) take the final exam. The student can not get a final grade if he did not pass both tests.

**20. Assessment components:**

The final grade is based on the total number of points obtained through pre-requisites (regularity of teaching attendance: 10 points; tests: 90 points)

**21. Required reading list:**

1. K.Kümmerer, M.Hempel (eds.) Green and Sustainable Pharmacy, Springer-Verlag, Berlin – Heidelberg, 2010.
2. Authorized lectures

**22. Web sources:****23. Applicable starting from the academic year:**

2015/2016

**24. Adopted in the Faculty/Academy session:**