SYLLABUS

1. Course title:

Pharamceutical biotechnology

2. Code:

3. Cycle of study:

3

4. ECTS credits:

15

5. Type of course:

○ Mandatory ◉ Elective

6. Prerequisites:

7. 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:

Pharmaceutical sciences

12. Lecturer:

Dr. sc.Selma Berbic, full prof.

13. Lecturer's e-mail:

selma.berbic@untz.ba

14. Web site:

www.farmacy.untz.ba

15. Course aims:

Obtaining general knowledge in the field of protein engineering and application of protein engineering in biopharmaceutical design and protein research; Knowledge related to biotechnological production of recombinant proteins; Special knowledge of carrier systems for targeted delivery of recombinant biological drug proteins and nanotechnology prospects in therapy and diagnosis of disease; Mastering experimental methods of spectrofluorimetry application in protein stability and electrophoretic protein characterization methadone studies.

16. Learning outcomes:

Competences for work and research in the field of pharmaceutical biotechnology

17. Course content:

Protein Engineering in Functional Research. Protein Stability and Biopharmaceutical design. Production of recombinant proteins in cell cultures. Investigation of protein formation and protein stability on a protein model. Biological drugs and carrier systems for the delivery of biologically active components. Perspectives of nanotechnology and chemical biology in therapy and diagnosis of diseases (cancer, rheumatoid arthritis, etc.). Biomimetic sensors for detection of microorganisms. Vaccine: design and modern vaccine technology.

18. Learning methods:

Lectures using multimedia
Students prepared essays on given topics

19. Assessment methods:

After the course is completed students are obliged to take an exam which covers the material presented during the course. The test consists of the section with multiple choice questions, and the section with the essay questions. Correct answer is worth 5 points, for multiple choice question, and 10 points for essay question.

20. Assessment components:

The exam is worth 100 points total, with 90 points worth for questions and 10 points worth for student's activity during lectures.

21. Required reading list:

Daan JA Crommelin and Robert D Sindelar » Pharmaceutical Biotechnology» (An introduction for Pharmacists and Pharmaceutical Scientists), Second Edition, 1997 Taylor&Francis, London/New York; Gary Walsh « Pharmaceutical Biotechnology» John Wiley&Son

22. Web sources:

23. Applicable starting from the academic year:

2012/13.

24. Adopted in the Faculty/Academy session: