SYLLABUS

1. Course title:

STRUCTURE AND PROPERTIES OF POLYMERS

2. Code:

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

(●) Mandatory ( ) Elective

6. Prerequisites:

7. Class restrictions:

8. Duration / semester:

1 7

9. Weekly contact hours:

9.1. Lectures:	3
9.2. Seminars:	0
9.3. Laboratory/Practice classes:	2

10. Faculty:

Faculty of Technology

11. Department/study program:

Chemical Engineering and Technologies

12. Lecturer:

dr. sc. Zahida Ademović, assoc. prof.

13. Lecturer's e-mail:

zahida.ademovic@untz.ba

14. Web site:

www.tf.untz.ba

15. Course aims:

The aim of this course is to enable students to master the basic principles and fundamental knowledge in the structure-properties characteristic of polymers. Students will acquire specifics knowledge of the polymer structure in relation to the methods of synthesis, selection, optimization and design of polymeric materials. Furthermore, the importance of polymers structure and their application will be emphasised.

16. Learning outcomes:

After finishing the course, students will be able to identify, the basic principles and techniques for working with polymers and linking those skills in solving modern engineering problems, examine the behavior of polymeric materials in the special products and consumer goods, use professional literature in the scientific field of macromolecular chemistry, and solve practical problems in the field of polymer materials.

17. Course content:

Introduction and importance of polymers in modern engineering. The structure and chemical composition of the polymer. Molecular and supermolecular structure. Chain-like structure of the polymer molecules, the parameters describing the influence of the material properties. The influence of covalent bonds to polymer properties. Structural levels of polymeric material and the effect on properties. Methods for the production of polymeric materials and their impact on the structure of materials. Characterization of the structure, composition and properties of polymer materials. Classification and selection of the polymer structure and properties of the function. Designing the properties of polymeric materials.

18. Learning methods:

Lectures - through interactive lectures introduce students to the basic concepts and principles of synthesis reactions of various macromolecules and through practical examples and problems explain structure and properties relation.
Experimental - through practical experiments, students will demonstrate the level of acquired knowledge through lectures and acquire skills for practical and scientific and research work.
Consultation - through consultations, students can deepen the knowledge acquired in classes.

19. Assessment methods:

Activity - for activity in lectures and exercises students can obtain 0-5 points.
Colloquium: colloquium of experimental work which consists of a theoretical basis and conducted experimental exercises. For the colloquium student can obtain a maximum of 15 points, the minimum number of points that a student must achieve is 5.
Colloquium and completion of the experimental work is a prerequisite for obtaining a signature.
Written assessment during the semester (Test I and II) - Test I and Test II include problem-solving tasks. The maximum number of points on each test is 15th
Final exam - assessment implies the unification of the entire matter handled.
In order to pass the courses, student must achieve a minimum of 51 points, of which a minimum of 25 points on the final exam.

20. Assessment components:

Rating exam is based on the total number of points a student has obtained by completing pre-exam requirements and exams, according to the quality of the acquired knowledge and skillsand contains a maximum of 100 points. It is determined according to the following scale:

Obligations	Points
Presence in classes	0-5
Experimental work	5-15
Test I	0-15
Test II	0-15
Final Exam	25-50

21. Required reading list:

1) H.G. Elias, Macromolecules, Wiley 2009
2) S.I. Rosen, Fundamental principles of polymeric materials, Wiley, New York, 1993
3) D.W. Clegg, Structure and properties of polymeric materials, The Institute of Materials, London, 1994

22. Web sources:

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session: