

SYLLABUS

1. Course title:

Application and processing of polymeric materials

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

1

4. ECTS credits:

6

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

NO

7. Class restrictions:**8. Duration / semester:**

1

8

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/Chemistry and Engineering of Materials

12. Lecturer:

Zoran Iličković, PhD., Associate professor

13. Lecturer's e-mail:

zoran.ilickovic@untz.ba

14. Web site:

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15. Course aims:

The aim of this course is to give students basic knowledge about applications and processing of polymeric materials. Students should be introduced with today's most common processing processes of polymeric materials, and their main characteristics, to master the basic principles of these processes, to be able to choose the most suitable polymeric material for specific application areas, and to be able to determine the types of procedures for the high-quality final disposal of polymeric waste from different areas of its application.

16. Learning outcomes:

By successfully completing of this course, students will be able to identify and determine the dominant principles and ways of implementing the polymerization processes, as well as the main characteristics and application of the most important polymers.

17. Course content:

Through the course Application and processing of polymeric materials, the students are introduced to the following curricula: Overview of production, processing and application of polymeric materials in the World, Review of phases in the technological process of polymeric material processing, Polymer processing techniques, Division of processing processes, Processing properties of polymers and polymeric materials, Extrusion processes, Molding processes, Calendering, Casting, Hot forming, Reinforced plastics, Polymer foams, New processing technologies, Polymeric material properties, Polymeric material selection and processing methods, Environmental and health regulations in certain areas of polymer application, The most significant manufacturers, Application of polymeric materials for packaging, medicine, construction, electronics and electrical engineering, textile fibers, communications and computer industries, machinery and agriculture, automotive industry, sports equipment and recreation. Polymer waste recycling.

18. Learning methods:

Auditorial lectures with the use of multimedia resources (power point presentation) favoring the active participation and discussion of students.

Practical work on the preparation and public presentation of individual and group seminar papers

Laboratory practice

Visits to industrial plants

19. Assessment methods:

Knowledge and skills are evaluated continuously throughout the semester through:

Partial exam-tests -T1 and T2, and final exam.

Students are required to approach all forms of knowledge checking during the semester.

Partial exam I, includes knowledge checking after the first 7 units adopted through lectures.

Partial exam II includes the knowledge gained through lectures (teaching units 8 to 15).

Partial exams I and II are in written form and consist of 10 questions. The student can earn maximum of 15 points on each partial exam.

As a part of the prerequisites, the student can conduct seminar work and can achieve a maximum of 5 points.

Regular attendance at lectures is evaluated with a maximum of 5 points.

After completing laboratory exercises students must pass a colloquium and can earn max.10 points.

At pre-exam activities, the student can maximally earn 50 points.

The final exam covers the entire course that was not subject of partial exam-tests. At the final exam, the student can earn a maximum of 50 points.

20. Assessment components:

The assessment of the exam is based on the total number of points the student has obtained by fulfilling the pre-requisites and the completion of the final exam, with a maximum of 100 points and is determined according to the following scale:

54-62 = 6

63-72 = 7

73-82 = 8

83-92 = 9

93-100 = 10

21. Required reading list:

1. Iličković Z. – materijal sa predavanja
2. Chanda M., (2009) Industrial polymers, specialty polymers, and their applications, CRC-Press.
3. Harper C.A. , (2000) Modern plastics handbook, McGraw-Hill,

22. Web sources:

<http://ocw.mit.edu/courses/materials-science-and-engineering/3-064-polymer-engineering-fall-2003/lecture-notes/>
(10.04.2015)

23. Applicable starting from the academic year:

2015/16

24. Adopted in the Faculty/Academy session: