SYLLABUS

1. Course title:

Processes of polymer production and processing

2. Code:

3. Cycle of study:

1

4. ECTS credits:

4

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

No prerequisites

7. Class restrictions:

8. Duration / semester:

1 8

9. Weekly contact hours:

9.1. Lectures: 2

9.2. Seminars: 0

9.3. Laboratory/Practice classes: 1

10. Faculty:

Faculty of Technology

11. Department/study program:

Chemical Engineering and Technology

12. Lecturer:

Zoran Iličković, associated professor

13. Lecturer's e-mail:

zoran.ilickovic@untz.ba

14. Web site:

www.tf.untz.ba

15. Course aims:

The aim of the course is to give students the knowledge of polymers primarily about their properties, the structure / properties relationship, the types and techniques of the polymerization processes and the ways of production and processing. Students should gain insight into some of the most important polymer materials used today.
Within laboratory exercises, students should become familiar with the basic methods of performing the polymerization process and to become familiar with the basic methods of processing and recycling certain types of polymers.

16. Learning outcomes:

By successfully mastering this course, students will gain the knowledge about the principles and techniques of performing polymerization processes as well as the basics of polymer production and processing so that they will be able to work alone or in a team to solve problems related to this area.

17. Course content:

Through the course Processes of polymer production and processing, students are introduced to the following curricula: General concepts related to polymers, polymers history and basic polymers division; Natural polymers; Basic properties of polymers and polymer materials, structure/properties relationship; Polymerization reactions; Types and techniques of polymerization processes (homogeneous and heterogeneous); Polymer processing (extrusion, pressing, casting, etc.), polymeric materials and products (plastics, films, coatings, composites, etc.); Processes of production and application of certain polymeric materials; Polyolefin (PP, PE), Vinyl Polymers (PS, PVC), Polyester (PET), Polyurethane (PUR), Polycarbonate (PC); Impact of polymer production and processing on the environment, (Biodegradable Polymers).

18. Learning methods:

Auditorial lectures and power point presentations favoring active participation and student discussion
Practical work on the design and public presentation of seminar papers
Experimental exercises in the laboratory

19. Assessment methods:

Knowledge and skills are evaluated continuously throughout the semester through:
Partial exam-tests -T1 and T2, colloquium - K from Laboratory exercises, and final exam.
Students are required to approach all forms of knowledge checking during the semester.
After performing laboratory exercises, the examination will be carried out through the the final colloquium.
The student can win a maximum 10 points from laboratory exercises.
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 do a seminar work from the content of the course, which he submits in written form for examination and evaluation, and can achieve a maximum of 5 points.
The attendance of lectures and exercises is evaluated with a maximum of 5 points (lectures and exercises are mandatory). At pre-exam activities, the student can maximally earn 50 points.
The final exam covers the entire course. 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. Z. Iličković – materijal sa predavanja
2. Z. Janović, Polimerizacije i polimeri, HDKI-Kemija u industriji, Zagreb, 1997
3. F.Rodriguez, Principles of polymer systems, Taylor & Francis, London, 2005

22. Web sources:

http://www.bpf.co.uk/Plastipedia/default.aspx
http://ocw.mit.edu/courses/materials-science-and engineering
http://www.doitpoms.ac.uk/

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session: