SYLLABUS

1. Course title:

RECYCLING OF POLYMER MATERIALS

2. Code:

3. Cycle of study:

1

4. ECTS credits:

3

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:

Environmental Protection Engineering

12. Lecturer:

Zoran Iličković, Associate 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 knowledge about the recycle possibilities of today's most widely used polymer materials and to introduce them to new approaches, methods and procedures for recycling polymer materials. Students should be able to analytically review the concept of recycling of polymers with different aspects; Technical, ecological, economic and social.

16. Learning outcomes:

By successfully mastering this course, students will will have knowledge about the possibilities and ways of recycling polymer materials and be able to work alone or in a team to solve problems related to the collection, sorting and recycling of certain types of polymer materials.

17. Course content:

Through the course Recycling of polymer materials, students are introduced to the following curricula:
Generally on Polymers, division, Impact of polymers on the environment, Methods and procedures for selection and classification of PO, Processes for recycling of non-selective PO, physical recycling of PO, Thermal and energy recycling of PO, Chemical recycling of PO, Methods and procedures for recycling various polymer materials (PET, PUR, polyolefins, rubber)
Alternative ways to recycle polymer materials (RDF, RPF, high furnace, Coke plants)

18. Learning methods:

Oral lectures using multimedia resources (power point presentations) favoring the active participation and discussion of students.
Practical work on the preparation and public pesentation of individual and group seminar papers.
Laboratory exercises and visits to industrial plants.

19. Assessment methods:

Knowledge and skills are continually evaluated throughout the semester, through: partial exams - tests - T1 and T2, colloquium after laboratory exercises - K and final exam. Students are obliged to approach all forms of knowledge checking during the semester.
Partial exam I includes knowledge checking after the first seven teaching units, adopted through lectures.
Partial exam II includes knowledge checking, adopted through lectures (teaching units from 8 to 15).
Partial exams I and II are in written form and each consists of 10 questions. At each partial exam, the student can win a maximum of 15 points.
Students take the exit Colloquium after performed laboratory exercises and can score up to 10 points.
As part of the prerequisites, the student can prepare a seminar work on the topics of the course content, which he submits in written form for review and assessment and can achieve a maximum of 5 points.
The presence at lectures is evaluated with a maximum of 5 points (lectures are mandatory). The student can earn up to 50 points on pre-exam activities.
The final exam covers the entire course. At the final exam, the student can win 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 passing the final exam, and it contains 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 , (2014) Materijal sa predavanja
2. F.P. La Mantia, (2002) Handbook of Plastic recycling, Rapra technology limited, UK.
3. J.Schiers, W. Kaminskey, (2007)Feedstock Recycling and Pyrolysis of Waste Plastics, W&S.

22. Web sources:

www.plasticsrecycling.org (20.04.2015)

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session: