

SYLLABUS

1. Course title:

BIOFUELS

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

1

4. ECTS credits:

3

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

NO

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

1

6

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 Technologies/Ecological Engineering

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 the course is to provide students with basic information on different generations of biofuels , clarify the reasons because biofuels have emerged and provide students with the basic knowledge about the principles and methods of production and application of biofuels. Students should consider biofuels from different aspects; (technical, ecological, economic and social) and to analyze the reasons why biofuels has a lower negative impact on the environment than fossil fuels.

16. Learning outcomes:

By successful completion of the course, students will be able to identify the principles and techniques of obtaining biofuels (biodiesel, bioethanol, biogas) and also to, independently or in a team, work on solving problems related to the production, analysis and the use of biofuels.

17. Course content:

Through the course Biofuels, students are introduced to the following curricula: The history of biofuels and the reasons for their application, Biomass as a source of biofuels, Briquetting and pelleting of biomass, First generation of biofuels , Plant oils, Biodiesel, Bioethanol, Biogas, Biobuthanol, Second generation of biofuels ; Cellulose ethanol, Biomethanol, Biohydrogen, Third and fourth generation of biofuels, Biofuels from algae, Biorefineries, LCA biofuels.

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 exercises and visits to industrial plants.

19. Assessment methods:

Knowledge and skills are evaluated continuously throughout the semester through:

Partial exam-tests -T1 and T2, Colloquium after laboratory exercises-K 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).

The students take the output colloquium after performing laboratory exercises and can maximally earn 10 points.

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 (lectures 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.ličković , (2014) Biogoriva, IN SCAN - Tuzla
2. A. Demirbas, (2009) Biofuels-Securing the Planet's Future Energy Needs, Springer
3. R.Luque et al. (2011) Handbook of biofuels production, Woodhead publishing.

22. Web sources:

<http://www.biofuelstp.eu/index.html> (20.04.2015)

23. Applicable starting from the academic year:

2015/16

24. Adopted in the Faculty/Academy session: