SYLLABUS

1. Course title:

RENEWABLE ENERGY SOURCES

2. Code:

3. Cycle of study:

1

4. ECTS credits:

5

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

No 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:	1

10. Faculty:

Faculty of Technology

11. Department/study program:

Chemical Engineering and Technologies / Ecological Engineering

12. Lecturer:

Franc Andrejaš, associated professor

13. Lecturer's e-mail:

franc.andrejas@untz.ba

14. Web site:

www.tf.untz.ba

15. Course aims:

The main objective of this course is to provide students with theoretical knowledge according to the content of the course; Encourage and support the development of intellectual skills in students in terms of applying acquired knowledge; Improve students' abilities for continuous work, Enable students to actively participate in all teaching activities and commitments through an interactive teaching approach. The development and increase awareness about reducing energy sources, then the need to use renewable energy sources, environmental conservation and compliance with international standards.

16. Learning outcomes:

Understand the global importance of renewable sources in competitiveness with conventional energy sources, in terms of their: undeniable environmental advantages, technical and technological characteristics and legislative and economic and financial indicators and problems in the preparation and realization of the project.

17. Course content:

Generally about energy, types, transformation of utilization rate, impact of production on environment.
Primary and secondary energy sources; Place and role of alternative energy sources; European and World conventions and environmental directives; Energy sources in the future; Geothermal energy; Hydropower; Sea energy; Solar energy; Wind energy; Nuclear energy; Biomass as a source of energy; Biodiesel and its application; Fuel cells; Heat pumps.

18. Learning methods:

For the purpose of efficient teaching and achievement of the expected course objectives and competences of students at the end of the semester, different curricular methods are used:
1. lectures,
2. experimental exercises,
3. seminar papers,
4. consultations.

19. Assessment methods:

Throughout the course, students are required to regularly attend lectures and exercises. Students' attendance records will be regularly kept. On a special form, the subject teacher will continuously monitor the presence of each student. During the semester, the student can be absent with a maximum of three lectures and three exercises, being obliged to bring proof of justification of absence (medical certificate, etc.). In the case of more unexcused absences, the student loses the right to the signature of the teacher.
• TESTS - Two tests per semester for the oral exam and two tests for the written part of the exam, ie a total of 4 tests. Each test for the oral part of the exam consists of 20 short theoretical questions related to the previously processed material and carries 15 points (for a passing grade, one should achieve a minimum of 8 points). Each test for the written part of the exam consists of four tasks related to the previously processed material and carries 15 points (for a passing grade, one should achieve a minimum of 8 points). Tests are usually conducted after every six weeks of lectures, whereby the subject teacher will announce them to the students at least two weeks before each test.
• FINAL PART OF THE EXAM - Students who have collected the required number of points by all criteria (54 points), have the option of additional (verbally or in writing exam) for a higher final grade. The maximum number of points that can be obtained on the final exam is 30. The minimum number of points, which must be reached on the final exam is 18.
All the students who did not meet the conditions in one of the tests or who are not satisfied with the grade, but who have completed all other obligations of the course (have the signature of the subject teacher in the index) take the final exam. The student can not get a final grade if he has not passed all the tests.
• SEMINAR WORK OF STUDENTS: student has the opportunity to do one seminar work. Successfully prepared and verbaly performed seminar work is evaluated with a maximum of 5 points (minimum 3 points), which are added to the total number of points achieved on other bases, in the formation of the final grade.

20. Assessment components:

The final grade is based on the total number of points obtained through prerequisites and the final exam, according to the quality of the acquired knowledge and skills. It has a maximum of 100 points, according to the following scale:
Regularity of teaching attendance (lectures + exercises): 5 points
Activity in laboratory exercises: 30 points
Tests (theory): 30 points
Tests (tasks): 30 points
Seminar paper: 5 points
Final exam: 30 points

21. Required reading list:

Đonlagić M (2003). Energija i okolina, Univerzitet u Tuzli.
Đonlagić M i sar, (2005). Alternativni izvori energije-Biomasa, Univerzitet u Tuzli.
Fay J, Gobson D (2003). Energy and Environmen, Oxford Press

22. Web sources:

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session: