SYLLABUS

1. Course title:

WASTE MATERIALS OF AGRICULTURAL PRODUCTION

2. Code:

3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

No prerequisites

7. Class restrictions:

No 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:

Agronomy

12. Lecturer:

13. Lecturer's e-mail:

14. Web site:

www.tf.untz.ba

15. Course aims:

Introducing students about waste materials, waste water management, and the management of the by-products of the food industry, the manner of using by-products and waste materials, and environmental protection.

16. Learning outcomes:

After fully implemented obligations, provided by the course syllabus, it is expected from successful students to:
- understand the concept of waste material whose origin comes from agriculture;
- understand the environmental aspect of management of waste materials,
- argument the processability of waste, depending on the agricultural production;
- identify and rank the agricultural waste with regard to the possibility of further treatment
- be able to constitute and implement a plan of treatment of waste from agriculture;
- be able to competently analyze ways of exploiting waste from agriculture;

17. Course content:

The basic principles of waste management
Waste and environment
Usable waste materials
Techniques of separate collection and classification of reusable waste materials
Type of waste in agricultural production
The regulations of the EU and BiH in the field of waste management in agriculture.
Chemical models of waste treatment and recycling.
Anaerobic and aerobic treatment of agricultural waste.
Mechanical biological treatment of agricultural waste.
Disposal of agricultural waste.
Burning of agricultural waste.
Special types of waste - packaging waste in agriculture, slaughterhouse waste, hazardous waste.
Field exercises.
Final exam.

18. Learning methods:

Lectures, laboratory work, field work, group and individual consultations. Lectures will be supported by multimedia where appropriate, with the expected active participation of students in the discussion. During the classes, exercises will be conducted in an interactive form, through the practices of the laboratory experiments. Visits to relevant commercial and other organizations will demonstrate the link between theory and practice. Consultations will facilitate and deepen understanding of the subject material.

19. Assessment methods:

Throughout the course, students are required to attend lectures and exercises on a regular basis, which the subject teacher and associates will continuously monitor and, on special forms, keep records of that. During the semester, the student can be absent from 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 throughout the semester. Each test consists of a maximum of 20 short theoretical questions related to the previously processed material and carries 20 points (for a passing grade, one should achieve a minimum of 11 points). Tests are usually conducted after every six weeks of instruction, whereby the subject teacher will announce them to the students at least two weeks before each test.

LABORATORY EXERCISES: the student is obliged to do all laboratory exercises, and based on activity in exercises can achieve a maximum of 25 points (for a passing grade should achieve a minimum of 13 points).

• FINAL PART OF THE EXAM - Students who have collected the minimum required number of points for the pass grade (54 points) by all criteria, have the right on deserved grade or to use 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 both tests.

20. Assessment components:

The final grade is based on the total number of points obtained through pre-requisites and the final exam, according to the quality of the acquired knowledge and skills. It contains a maximum of 100 points, according to the following scale:
Regularity of attendance (lectures and exercises): 5 points
Activity in laboratory exercises: 25 points
Tests (theory): 40 points
Final Exam: 30 points

21. Required reading list:

V. Selimbašić, N. Đonlagić (2004): Uticaj poljoprivrede i proizvodnje hrane na okoliš Ekološki standardi EU
Karagiannidis, A. (2012): Waste to energy. Springer-Verlag, London, UK
Vaughn J. (2009): Waste management handbook, AbcClio, Oxford, UK

22. Web sources:

23. Applicable starting from the academic year:

2016/2017

24. Adopted in the Faculty/Academy session: