SYLLABUS

1. Course title:

ENERGY PLANTS AND ENVIRONMENT

2. Code:

(max. 20 characters)

3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

None

7. Class restrictions:

None

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 Mechanical Engineering

11. Department/study program:

Mechatronics

12. Lecturer:

Indira Buljubašić, Associate Professor

13. Lecturer's e-mail:

indira.buljubasic@untz.ba

14. Web site:

www.mf.untz.ba

15. Course aims:

Acquisition of theoretical knowledge and practical skills in the field of thermal systems and principles of thermal power plants.

16. Learning outcomes:

At the end of the semester / course successful students, who during the whole educational period continuously perform their duties, will be able to: analyzing the energy situation in the world and BiH are classified power plants according to different criteria, carry out the design of part or all of the energy production facility according to a given type of energy source , analyze the impact of power plants on the environment and provide a proposal of measures for improvement.

17. Course content:

Energy sources and energy supply (occurrence of energy; the primary forms of energy; transformation of energy);
Non-renewable and renewable energy sources;
Technology for the production of electrical energy-classical, innovated and technologies in the future;
Classical thermal power and advanced technology, classification, elements of the equipment, the technological scheme; steam and gas power plants, the power plants, co-generation;
Nuclear elektrane- principle of operation, classification, the basic elements of the equipment, technology;
Hidroelektrane- classification, working principle, the elements of the plant, the role of the power system;
The impact of emissions of power plants on the physical and chemical processes in the atmosphere
Greenhouse gas emissions
The solid and liquid waste from energy plants
Safe operation of power plants
Technology to reduce emissions from power plants
The regularity of operation of power plants-Legislation to protect the environment.

18. Learning methods:

Lectures and laboratory exercises.

19. Assessment methods:

Teaching units of this course the students will be presented through classical lectures with video presentations. Analysis and calculation of new or existing plants will be made in the laboratory exercises, to be implemented in a laboratory or real objects (eg. Tuzla).

20. Assessment components:

The presence in classes (lectures 2.5 + practice 2.5) -5 points,
• Test with issues of theory 1x 10 points (7.sedmica)
• Test with 25 points zadacima1x (13.sedmica),
• Seminar work- 20 points (mandatory defense before taking the final exam)
• Final exam- 40 points.
Note: If the student has not passed the test with the tasks within pre-exam, in time of the final exam will further lay and tasks together with the oral part of the exam, as well as their installation mandatory.

21. Required reading list:

1. Požar H.: Osnove energetike I i II, Zagreb, 1992.
2. Bogner M.: Termotehničar I i II, Beograd, 2004.

22. Web sources:

(max. 687 characters)

23. Applicable starting from the academic year:

2015/16

24. Adopted in the Faculty/Academy session:

01.06.2015