

SYLLABUS

1. Course title:

THERMAL ENERGY PLANTS

2. Code:

(max. 20 characters)

3. Cycle of study:

1

4. ECTS credits:

5

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

None

7. Class restrictions:

None

8. Duration / semester:

1

7

9. Weekly contact hours:

9.1. Lectures:

3

9.2. Seminars:

1

9.3. Laboratory/Practice classes:

0

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

Energy Engineering

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 energy systems and principles of thermal power plants.

16. Learning outcomes:

At the end of the semester/course successful students, who during the semester continuously perform their duties, will be able to:

- analyze the energy situation in the world and Bosnia and Herzegovina;
- classify thermal power plants according to different criteria,
- carry out the design of a part or whole thermal power plant according to a given fuel type,
- calculate utilization efficiency of the whole or part of the existing thermal power plants and give the proposed measures for its improvement,
- analyze the negative impact of the plant on the environment and measures to reduce them.

17. Course content:

- Energy sources and energy supply (occurrence of energy; the primary forms of energy; transformation of energy);
- Primary conventional forms of energy (coal, oil and gas, water, wood, waste, biomass, nuclear fuel);
- Classification of power plants by type of fuel and working fluid.
- Heat balance and technological scheme of thermal power plants
- Utilization efficiency;
- Steam production,
- Consumption of heat and condensing fuel in the district heating system;
- Elements of thermal schemes;
- Energy and environment (development of sustainable technologies; new technologies in thermal power supply, ecology).

18. Learning methods:

Teaching units of this course will be presented by:

- conventional lectures using video presentations,
- analysis of group and individual presentations of seminar/essay papers

19. Assessment methods:

During the semester, students continually attend lectures. Testing is done twice in semester . Student must win at least 50% of points per test. As part of the pre-exam students are required to make individual or group work, which will cover a specific subject. Paper is submitted in written form for a teacher's review and assessment and presented orally. Group work involves all students and the evaluation is given for each student individually. The final exam is oral and written.

20. Assessment components:

Assesment is based on the following scale:

- Presence at lectures - 2.5 points
- Presence at exercises - 2.5 points
- Seminar/ essay paper- 15 points
- Tests (10+20)- 30 points
- The final exam - 50 points

21. Required reading list:

1. Požar H.: Osnove energetike I i II, Zagreb, 1978.
2. Smajević, Hanjalić K.: Toplotne turbomašine, Sarajevo, 2007
3. Đonlagić M.: Energija i okolina, Tuzla, 2005.

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