

SYLLABUS

1. Course title:

Thermodynamics II

2. Code:

do not fill

3. Cycle of study:

1

4. ECTS credits:

6

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

no

7. Class restrictions:

no

8. Duration / semester:

1

5

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 department

12. Lecturer:

Ph.D. Sandira Eljsan, professor

13. Lecturer's e-mail:

sandira.eljsan@untz.ba

14. Web site:

www.untz.ba

15. Course aims:

The subject Thermodynamics II is a continuation of earlier completion of the course Thermodynamics I (IV semester). Course objectives are to expand their knowledge in the field of heating and cooling cycles, solving tasks of circular cycle for example: IC engines (Otto and Diesel), solving processes in gas turbines and comparisons with steam plants...

16. Learning outcomes:

At the end of completion of the course is expected to know how to differentiate between processes in steam and gas turbines and IC engines, compressors plants, solve tasks of thermodynamic processes occurring in thermal power and nuclear facilities, describe some of the processes of combustion of solid and liquid fuels, solve simple problems in compressors, draw diagrams of steam ...

17. Course content:

- The energy cycle of the steam in energy plants. (Classic power plants, nuclear power, solar plants)
- Cooling plants and process.
- The heat pump.
- Process of combustion.
- Thermodynamic cycles in IC engine.
- The processes in gas turbines.
- Processes in compressors. (one- stage and multistage compression)
- The wet air. Mollierov h-x diagram of air. Process with wet air.
- Evaporation.

18. Learning methods:

- Lectures using multimedia resources, techniques of active learning and with the active participation and discussion of students;
- Exercises.

19. Assessment methods:

- After half a semester i.e. in 8 week students writing test (the first mid-term), which includes previously treated topics with lectures and exercises. The test consists of tasks and simple theoretical questions without complex equations and performance. A student on the first prelim and homework assignments can achieve a maximum of 22 points. After the end of the semester students take the writing test (second mid-term) covering the treated topics with lectures and exercises in the second part of the semester. Both tests taken by all students in the course at the same time thereby achieving uniformity of the level of knowledge that is being tested, as well as the conditions under which the student takes the exam. Final theoretical exam is oral. The right exit on the final exam is given to students who have passed 50% in both tests. At the oral exam students answer three questions drawn from the program of the subject treated in lectures and exercises. Oral exam can be taken if a student answers to all three questions. The maximum number of points a student can achieve at the oral exam is 50.

Check the expressions of knowledge are recognized as the examination if the cumulative result is achieved upon positive verification of the individual and is at least 50% of the scheduled and / or the required knowledge and skills.

For those who do not pass through the test, a written exam is taken out tasks in the time of the first final and second exam, after which it lays theory (oral exam).

20. Assessment components:

Exam consists of up to 50 points:

- The attendance of teaching :3 points of lectures and 3 points of exercises = 6 points
- Test I: 22 points
- Test II: 22 points
- The first final exam or second exam: 50 points

21. Required reading list:

1. Martinovic D., H.Lulic i grupa autora: Termodinamika i termotehnika, Sarajevo, 2014
2. Galovic, A: Termodinamika I, FSB, Zagreb, 2002
3. Fabris O.: Osnove inženjerske termodinamike, Pomorski fakultet u Dubrovniku, Dubrovnik 1994

22. Web sources:**23. Applicable starting from the academic year:**

2015/16

24. Adopted in the Faculty/Academy session:

01.06.2015