SYLLABUS

1. Course title:

Thermodynamics I

2. Code:

do not fill

3. Cycle of study:

1

4. ECTS credits:

5

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

no

7. Class restrictions:

no

8. Duration / semester:

1 4

9. Weekly contact hours:

9.1. Lectures:	2
9.2. Seminars:	2
9.3. Laboratory/Practice classes:	0

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

Department of Production, Mechatronics, 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:

Getting of theoretical knowledge and practical skills from the base of Thermodynamics. To familiarize students with the basic thermodynamic laws of ideal and real gases and thermodynamic processes. It serves as a basis for subject Thermodynamics II which students listen to in the V semester at the energy department and as the basis subjects of Introduction to Energy at the other Department of production.

16. Learning outcomes:

At the end of completion of the course is expected to know how to differentiate between ideal and real gases, describe some simple thermodynamic problems, solve simple tasks from basic thermodynamic processes, draw diagrams of water vapor and make simpler schemes from the process with steam.

17. Course content:

-Introduction. Thermodynamic conditions (main parameters of state).
-Basic laws of ideal and real gases.
-Ideal gas mixtures.
-First Law of Thermodynamics. The internal energy and specific heat.
-Work, power and works p-v diagram. Enthalpy.
-Changes of states in ideal gases.
-Second Law of Thermodynamics. Entropy.
-Circular thermodynamic cycles and thermal efficiency.
-Maximal work and exergy.
-Water vapor. The size of the state of water vapor.
- h-s diagram of steam. Processes with steam.

18. Learning methods:

Lectures and exercises.

19. Assessment methods:

The first mid-exam (tasks and theory) in the 8 week of semester and the second test (of tasks and theory) is in the 15 week of semester, that is the last week of the semester. For those who do not pass through the test, written examination of the tasks is on the date the first final and second final exam. After that is 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. Galović, 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