SYLLABUS

1. Course title:

Heating devices and appliances

2. Code:

3. Cycle of study:

1

4. ECTS credits:

5

5. Type of course:

Mandatory

6. Prerequisites:

7. Class restrictions:

8. Duration / semester(s):

I VI

9. Weekly contact hours and student workload:

	Semester (1)	Semester (2)	(for two-semester courses)		Workload: (hours)
9.1. Lectures	2			Classes:	45,00
9.2. Seminars	1			Individual work:	93,83
9.3. Laboratory / Practice classes	1			In total:	138,8

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

ETFI

12. Lecturer:

dr.sci. Izet Alić, professor

13. Course aims:

The goal of the course is to train the student to independently construct a heating device for the needs of thermotechnics and process engineering from the idea to the implementation documentation..

14. Learning outcomes:

At the end of the semester/course, successful students, who continuously performed their duties during the entire teaching period, will be trained to independently solve simpler problems in the field of thermotechnics and process engineering, i.e. they will be able to independently construct a heating device from idea to implementation documentation

15. Course content:

1.Introduction to the course syllabus. Introduction. Types of thermal appliances and devices.
2. Calculation and design of process plants and processes.
3. Apparatus in process technology. Unit operations of process technology.
4. Pressure vessels. Materials for making vessels.
5.Construction and calculation of vessels. Testing and control of containers before use and during exploitation.
6. Heat exchangers: recuperative, regenerative and mixing. Thermal and hydraulic calculations of exchangers.
7. Material and energy balance. Basic characteristics of individual design versions of exchangers.
8. Test
9. Basics of heat pumps. Energy sources for heat pumps.
10. Basic elements of heat pumps. Application examples.
11. Dryers, construction and division. Statics of the drying process.
12. Kinetics of the drying process. Basic types of dryers.
13. Columns, basic functions.
14. Gas absorption columns. Rectification columns.
15. Basics of designing heat appliances in the process industry.

16. Learning methods:

Lectures and exercises with the use of multimedia tools, active learning techniques and with the active participation and discussions of students. In addition, students have the opportunity to consult with the subject teacher and assistant.

17. Assessment methods:

1 test-written check
programming task
final exam – written examination

The test is done from the first three areas covered in the lectures. The student must score at least 50% of the points on the test in order for the points scored on the test to be recognized.
At the final exam, students who did not pass the test first take the failed test. Completion and defense of the program assignment is mandatory. Those who passed the test on the final exam take the theory from the remaining areas that are not covered by the test. At the same time, it is necessary to win a minimum of 30% of points (12 points) in order to be able to receive a passing grade (if this is sufficient in the aggregate with the points from the pre-examination requirements).
The grade is formed according to the number of accumulated points, and according to the rules for grading. The grade is formed according to the number of accumulated points, and according to Article 107 of the law on higher education of the TK.

Grade	Described	Letter	Points
5 (five)	Does not meet minimum criteria	F, FX	<54
6 (six)	Meets minimum criteria	E	54-64
7 (seven)	Generally good, but with significant shortcomings	D	65-74
8 (eight)	Average, with noticeable errors	C	75-84
9 (nine)	Above average, with occasional errors	B	85-94
10 (ten)	Exceptional achievement with no errors or with minor errors	A	95-100

18. Assessment components:

Class attendance: max. 5 points (the maximum number of points for attendance is obtained for a minimum of 90% attendance at lectures and exercises; with an increase in the number of absences, the number of points decreases proportionally).
Test - 30 points
Programming assignment - 25 points
Pre-exam requirements total 60 points

Final exam - 40 points

19. Mandatory reading list:

1. S. Sebastijanović, S. Dobrosavljević: Procesna aparatura i prerada nafte, Banja Luka, 2001.
2. S. Rozogaj: Procesni aparati i uredjaji, Sarajevo 1980.god.

20. Additional reading list:

21. Web sources:

22. Applicable from the academic year:

2023/2024

23. Adopted in the Faculty/Academy session: