SYLLABUS

1. Course title:

FLUID MECHANICS II

2. Code:

(max. 20 characters)

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

(max. 110 characters)

7. Class restrictions:

(max. 150 characters)

8. Duration / semester:

1 5

9. Weekly contact hours:

9.1. Lectures: 3

9.2. Seminars: 1

9.3. Laboratory/Practice classes: 1

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

Energy engineering

12. Lecturer:

dr.sc. Izet Alić, professor

13. Lecturer's e-mail:

izet.alic@untz.ba

14. Web site:

www.mf.untz.ba

15. Course aims:

The aim of the course is to provide students with the basic theoretical and practical knowledge about the flow of compressible fluids, and to master the application of dimensional analysis and similarity theory to solve practical problems.

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: independently solve simple problems in the field of flow of compressible fluids, using the theory of similarity, independently solve simple problems of Fluid Mechanics by using CFD.

17. Course content:

Gas Dynamics:
- Basic equations of the ideal gas flow
- Flow through nozzles
- De Laval nozzle
- Shock waves
- Two-dimensional flow of ideal fluid:
- Two-dimensional incompressible potential flow
- Axisymemetric flow
- Flow of compressible fluid
-Similarity.
- Dimensional analysis.
- Computer Fluid Dynamics.

18. Learning methods:

The most important learning methods in the subject are:
- Lectures with the use of multimedia resources, active learning techniques and with active participation and discussion of students;
- Auditorial exercises
- Laboratory exercises

19. Assessment methods:

In the sixth week of the semester students take the writing test No. 1, which includes previously treated topics with lectures and exercises. The test consists of theoretical questions and two tasks, where each issue contain the number of points that carries a specific question. The maximum score on the test is 25. In the twelfth week of the semester students take the writing test number 2, which includes processed topics with lectures and exercises after the test the first test consists of theoretical questions and two tasks, where each issue contain the number of points as bears specific question. The maximum score on the test is 25. In the framework of pre-exam students are required to independently develop programming task in the field of CFD. Program task to a written submission concerned assistant and at the same time it is presented orally what has been done. Program task carries a maximum of 15 points. The student must receive at least 50% of points on each test in order to apply for a points earned on the test. If not satisfied in one of the tests in the time of the final exam again lays nepoložen test. The final exam is taken orally (when laid continuously through tests) through a brief questioning. Be sure to achieve a minimum of 10 points on the final exam. Students who do not pass through the test, the time of the final examination shall take only jobs, but when the same pass the theory lay in writing, if necessary, with an oral explanation.

20. Assessment components:

Rating exam is based on the total number of points a student earned by completing pre-exam requirements and exams, according to the quality of the acquired knowledge and skills, and contains a maximum of 100 points, and is determined according to the following scale:
The presence continues 5 points
2 tests (tasks + theory) x 25 = 50 points
Programming example 15 points
Total pre-exam 70 points
Final exam 30 points

21. Required reading list:

1. S. Delalić, I.Alić : Mehanika fluida I, Tuzla 2005.
2. Pečornik, M.: Tehnička mehanika fluida, Školska knjiga Zagreb, 1989.
3. I. Demirdžić: Mehanika fluida I dio Osnove, Mašinski fakultet Sarajevo, 1990.

22. Web sources:

(max. 687 characters)

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session:

01.06.2015