SYLLABUS

1. Course title:

Physics

2. Code:

(max. 20 characters)

3. Cycle of study:

1

4. ECTS credits:

5

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

7. Class restrictions:

that the student approached the final exam it is necessary to previously colloquiums lab

8. Duration / semester:

1 1

9. Weekly contact hours:

9.1. Lectures:	2
9.2. Seminars:	1
9.3. Laboratory/Practice classes:	1

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

Production, Energy Engineering and Mechatronics

12. Lecturer:

Prof. dr. sc. Izet Gazdić

13. Lecturer's e-mail:

izet.gazdic@untz.ba

14. Web site:

www.pmf.untz.ba

15. Course aims:

One of the main objectives is that students expand their knowledge of the basic laws of physics of oscillatory and wave motion, optics and the structure of atoms and to know to establish causal relationships among these phenomena. If they establish quantitative relationships between the relevant physical parameters that define this phenomenon, that these laws. To develop skills for independent and team work.

16. Learning outcomes:

At the end of the semester / course successful students, who during the entire period of teaching continuously perform their duties, will be able to:
understand the emergence of mechanical and electromagnetic oscillations and their extensive application in science and technology, know how to explain and apply the laws of optical, optical instruments, and to know the wave and particle graphic distribution of light and its dualism. Also, the oslušanom course students should know how to analyze a variety of physical problems related to that and successfully solve physical tasks. Successfully verified physical laws envisaged by this plan.

17. Course content:

Lectures include 4 sections:
1. Mechanical oscillations and waves, 2. Optics,
3. Foundations of quantum physics, 4. Fundamentals of nuclear physics,

On Exercises solved computational tasks set out in those chapters. It is anticipated that students in laboratory experimental method do the following exercise:
1. Determine the frequency source using the air column,
2. Determination of the acceleration of gravity using mathematical pendulum,
3. Determination of the third wavelength laser light using optical gratings,
4. Determining the Rydberg constant,
5. Acquisition of Planck's constant using the photoelectric effect,
6. Designate focal length lenses - direct methods
7. Determining the focal length of the lens -Besselov methods
8. Determination of elemental charge electrolysis copper sulfate,
9. Determination of the absorption coefficient γ - ray using GM counter,
10. Checking the law of radioactive decay by computer simulation.

18. Learning methods:

The most significant learning methods to be applied in this case are:
- Lectures using multimedia means, and active learning techniques with the active participation and discussion of students;
Theoretical exercises (calculation problem solving) with the use of logical-mathematical learning styles and specific knowledge and experience,
An experimental exercise, experimental preparation with constant activity observation and consideration, and the creation of abstract concepts by the active experimentation.

19. Assessment methods:

After half of the semester, students take the writing test (the first term exam), which includes previously treated topics with lectures and auditory exercises. The test consists of computational tasks and theoretical questions. Computing tasks will be scored, with 10 points, a theory also with 10 points, so that a student on the first partial exam can win 20 points. In the last week of the semester students take the writing test (the second term exam) which covers the prepared topics with lectures and exercises in the second part of the semester. The concept and the scoring of the test is the same as the first, so that students on the second partial exam can win 20 points. During the semester, students are given homework assignments (a total of five tasks). Each task is scored with 1 point, respectively, a student at the tasks can achieve a maximum of 5 points. 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. Also, for continuous activity on laboratory exercises in the course of the semester, the student can achieve from 0 to 5 points. After experimentally done during each laboratory exercise individually colloquiums. The final exam is oral. The right exit on the final exam is given to students who are kolokvirali Laboratory exercises. The final exam consists of written and oral part (4 computational task and 4 theoretical questions). Computing tasks carry 25 points, a theory also 25 points. The maximum number of points a student can achieve the final exam is 50.
In order for the student to pass the subject must achieve a minimum of 54 cumulative points

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:
Obligations Student Body
Homework 5
Laboratory exercises 5
The first partial exam 20
The second partial exam 20
Total prerequisites given 50
Final exam 50

21. Required reading list:

1. I. Gazdić, Fizika-odabrana poglavlja za tehničke fakultete, Ars grafika, Tuzla, 2009
2. V. Vučić, D. Ivanović: Fizika I, II i III, Beograd 1998.
3. G. Dimić, I. Mitrinović, Zbirka zadataka iz fizike (D), 7 izdanje, Naučna knjiga, Beograd,1998

22. Web sources:

All references that follow the education provided for the authorities provided for in this plan.

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session:

01.06.2015