

Course title:	Physics
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Course code	Course status	Semester	Number of ECTS credits	Lecture hours
131001033	Mandatory	I	7.5	3+2+0.5

Study program:

Basic academic studies, ELECTRICAL ENGINEERING, study program: Power systems and Control (studies last for 6 semesters, 180 ECTS credits).

Prerequisites:

No prerequisites required.

Course aims:

Teaching physics as a fundamental natural science prepare students for studying natural phenomenon from the physics area, enable them to accept language and methods for studying physical phenomenon and introduce them with main outlines and theories which frame our knowledge about material world.

Teacher(s) and assistant(s):

PhD Mara Šćepanović – teacher, MSc Miroslava Slavković – assistant, MSc Gordana Jovanović - assistant

Teaching method:

Lectures (which include exercises), laboratory exercises. Continuous knowledge testing by oral examination. Studying and individual home works doing, consultations, tests.

Course synopsis:

Preliminary weeks	Recapitulation of the high school curriculum material necessary for course understanding.
I week	Detailed presentation of the teaching plan and exam organization. Introduction to physic mechanic, kinematics.
II week	Dynamics; Conservation laws; Oscillations; Oral examination; introducing to laboratory exercises.
III week	Oscillations; waves.
IV week	Waves; Fluids' and gases' mechanics.
V week	Fluids' and gases' mechanics. Introduction to thermophysics.
VI week	First test
VII week	Free week
VIII week	Thermophysics. Basics of the thermodynamics.
IX week	Geometric optic.
X week	Physics (wave) optic.
XI week	Introduction to the quantum physics.
XII week	Second test
XIII week	Postulates o the quantum mechanics.
XIV week	Introduction to the atomic physics.
XV week	Introduction to the nuclear physics.
XVI week	Final exam
Final week	Administrative procedures.
XVIII-XXI week	Additional lessons, correction of the final exam and administrative procedures.

STUDENT WORKLOAD

<u>per week</u>	<u>per semester</u>
7.5 credits x 40/30 = 10 hours	Teaching and the final exam: (10 hours) x 16 = 160 hours
Working hours structure:	Necessary preparation (before semester): 2 x (10 hours) = 20 hours
3 hours for teaching	Total work hours for the course: 7.5 x 30 hours = 225 hours
2 hours for exercises	Additional hours for preparing correction of the final exam, including the exam taking - up to 27 hours hours (the rest of the time from the firs two items, up to the total workhours for the course, 225 hours).
1 hour for laboratory exercises	Work hours structure:
4 hours for individual work, including consultations.	160 hours (lectures) + 20 hours (preparation) + 45 hours (additional work)

Lessons attendance is mandatory for students, as well as doing home exercises, laboratory exercises and both tests.

Literature: Halliday, Resnick and Walker: Fundamentals of Physics (7th edition);

Janjić, Bikit i Cindro: Opšti kurs fizike I i II;
 Traparić, Teterin i Vukčević: Zbirka zadataka iz fizike
 Dimić i Mitrović: Zbirka zadataka iz fizike D;
 Irodov: Zadaci iz opšte fizike
 Vučić: Osnovna mjerenja u fizici

The forms of knowledge testing and grading:

- 2 home exercises carry **2x1** points.
- 6 laboratory exercises carry **6** points (one point for each exercise).
- Each test carries **21** points (**42** points total).
- Final exam carries **50** points.

Student gets the passing grade by collecting 51 points at least.

Special remarks for the course: The teaching is organized for student groups with 30 students (recommendation) and laboratory exercises for groups with 12 students maximum. If needed, the course can also be taught in English.

Teacher who gave the information: PhD Mara Šćepanović

Remark: