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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** | Faculty of Technology |
| **GENERAL INFORMATION** |
| Study program  | **Chemical technologies; Food technologies and biotechnology, Textile technologies** |
| Study Module (if applicable) | Food technology module, Biotechnology module, Pharmaceutical and cosmetic engineering module, Organic chemical technology and polymer engineering module, Ecological engineering module, Textile engineering module, Industrial design of textile products |
| Course title | Physics |
| Level of study | ☒Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | ☒ Obligatory☐ Elective |
| Semester  | ☒ Autumn ☐Spring |
| Year of study  | 1st |
| Number of ECTS allocated | 9 ECTS |
| Name of lecturer/lecturers | Marija Stojanović Krasić |
| Teaching mode | ☒Lectures ☐Group tutorials ☐ Individual tutorials☒Laboratory work ☐ Project work ☐ Seminar☐Distance learning ☐ Blended learning ☒ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *The aim of the course is to master the basic laws and principles of physical phenomena and processes, and acquisition of knowledge that can enable students to keep up with the courses on higher years of study and vocational subjects. Application of the acquired knowledge about physical phenomena and processes in other fields of science and technology.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Lectures:**1. **Translational and rotational motion kinematics (4); 2) Translational and rotational motion dynamics (4); 3) Forces in mechanics; Work, power and energy in translational and rotational motion (4); 4) Mechanics of fluids and gases; Hydrostatics and fluid dynamics (4); 5) Kinetic molecular theory of ideal and real gases (4); 6) Basics of thermodynamics; Special theory of relativity (4); 7) Electrostatics (4); 8) Electric current in metals, fluids and gases (4); 9) Electromagnetism (4); 10) Electromagnetic induction; Alternating current (4); 11) Oscillatory motion (mechanic and electromagnetic oscillations) (4); 12) Wave motion (mechanic and electromagnetic waves) (4); 13) Geometrical optics (4); 14) Wave optics; Quantum nature of electromagnetic radiation. Quantum optics (4); 15) Nucleus of atoms (4)**

**Calculation exercises: 1) Translational and rotational motion kinematics and dynamics (4); 2) Work, power and energy in translational and rotational motion (4); 3) Hydrostatics and fluid dynamics (4); 4) Kinetic molecular theory of an ideal gas; thermodynamics (4); 5) Electrostatics; Electric current (4); 6) Electromagnetism; Electromagnetic induction (3); Oscillations and waves (3); 8) Geometrical and wave optics; nucleus of atoms (4)** |
| **LANGUAGE OF INSTRUCTION** |
| ☒Serbian (complete course) ☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)☐Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** | **10** | **Written examination** | **15** |
| **Practical teaching** | **20** | **Oral examination** | **15** |
| **Teaching colloquia** | **40** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |