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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Science and Mathematics |
| **GENERAL INFORMATION** |
| Study program  | **Physics** |
| Study Module (if applicable) |  |
| Course title | Atomic and Molecular Structure |
| Level of study | ☐Bachelor ☐ Master’s ☒ Doctoral |
| Type of course | ☐ Obligatory ☒ Elective |
| Semester  |  ☒ Autumn ☐Spring |
| Year of study  | I |
| Number of ECTS allocated | 15 |
| Name of lecturer/lecturers | Ljiljana T. Stevanović |
| Teaching mode |  ☒Lectures ☐Group tutorials ☒ Individual tutorials ☐Laboratory work ☐ Project work ☒ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| Student should master  the basic ideas of theory and should be able to apply mentioned ideas to study a given system (atom or molecule). |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Irreducible tensorial operators. Atomic multiplets. Self-consistent field approximation. Density functional theory. Atomic multiplets. Atom in  external field. Born-Oppenheimer approximation. Electronic, vibrational and rotational states of diatomic and polyatomic molecules. |
| **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** |  | **Written examination** |  |
| **Practical teaching** |  | **Oral examination** | **60** |
| **Teaching colloquia** | **40** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |