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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** | | | | | | |