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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | **Faculty of Sciences and Mathematics** |
| **GENERAL INFORMATION** |
| Study program  | **Physics** |
| Study Module (if applicable) |  |
| Course title | **Fundamentals of Atomic and Molecular Physics** |
| Level of study | [x] Bachelor [ ]  Master’s [ ]  Doctoral |
| Type of course | [x]  Obligatory [ ]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  |  3 |
| Number of ECTS allocated | 7 |
| Name of lecturer/lecturers | Ivan Mančev |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [ ]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| To provide knowledge which is necessary for other subjects such as solid state physics, nuclear physics, physics of ionized gases and plasmas etc. Development of skills for solving theoretical and experimental problems.   |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
|  Millikan experiment. Moving of particles in electric and magnetic field. Black-body radiation.  [Planck's law of black-body radiation](https://en.wikipedia.org/wiki/Black-body_radiation#Planck.27s_law_of_black-body_radiation),  [Wien's displacement law](https://en.wikipedia.org/wiki/Black-body_radiation#Wien.27s_displacement_law),  [Stefan–Boltzmann law](https://en.wikipedia.org/wiki/Black-body_radiation#Stefan.E2.80.93Boltzmann_law). Photoelectric effect, Compton effect. X-ray. Rutherfordscattering, Bohr Atomic model, Sommerfield's model. De Broglie hypothesis. Wave nature of particle. Schrodinger equation. Motion in a central symmetric potential. Multi-electron atoms. Introduction to molecular physics.  |
| **LANGUAGE OF INSTRUCTION** |
| [x] 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** | **5** | **Written examination** | **30** |
| **Practical teaching** | **15** | **Oral examination** | **40** |
| **Teaching colloquia** | **10** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |