

Quantum Mechanics_Course Description

Faculty: Faculty of Natural Sciences

Study program: Bachelor in Physics

Course Title: Quantum Mechanics

Course Credits: 7 (ECTS)

Language of Instruction: Albanian

Course Description: The subject "Quantum Mechanics" is a module of the discipline "Fundamentals of Quantum Mechanics". The object of this course is that, at the end of the course, the student will have the basic knowledge of Quantum Mechanics and its basic methodologies. Through this program, students will be introduced to the limits of classical physics, and the theory of physics, which is based on the wave-particle duality of matter, a theory which also explains phenomena unexplained by classical physics. The student will know the mathematical structure of quantum mechanics, the Schrödinger equation, and its applications in physical systems. Also, it will recognize and represent operators of various physical quantities in coordinate and impulsive representation. A special place is occupied by the presentation of accurate and approximate methods for the calculation of energy states and levels.

Course Goals: Knowledge and use of the basic concepts and laws of Quantum Mechanics. Knowledge of particular importance with energy levels and electron states in the Hydrogen atom.

Course Requirements: The assessments which contribute to course score are listed below:

- Participation: 5 points
- Activation: 5 points
- Assignment 1: 10 points
- Assignment 2: 10 points
- Final Exam: 70 points

Grading: The above activities constitute a quantity of 100 points which are converted into the respective grades:

- 0-44 points -> grade 4;
- 45-54 points -> grade 5;
- 55-64 points -> grade 6;
- 65-74 points -> grade 7;
- 75-84 points -> grade 8;
- 85-94 points -> grade 9;
- 95-100 points -> grade 10

Course Schedule: The course takes place in the first semester of the third year of study for 8 weeks. Student will have the opportunity to attend 5 hours of lectures and 4 hours of seminars per 8 weeks.

Attendance:

- Lectures are optional
- Seminars should be attended to 75% (when the student participates less than 75% does not have the right to attend the exam but passes in the next season)