Program	Level of studies		First cycle		
	Program name		Physics		
Course name	QUANTUM MECHANICS I				
Course ID	Semester	Course status	ECTS credits		L+E
PTH5711	**V**	**MANDATORY**	**6**		**3+2**
Lecturer	**Prof. dr. Dejan Milošević**				
Aims and intended learning outcomes	The objective of the course is to introduce students to the basic concepts of quantum mechanics, as well as to enable them to solve tasks from this fundamental field of theoretical physics independently, using new mathematical methods. After presenting the physical basics and mathematical apparatus of quantum mechanics, the developed formalism will be applied to simple quantum mechanical systems. The learning outcome is mastering theoretical knowledge from the basis of quantum mechanics, the adoption of the quantum mechanics formalism, and the acquisition of the ability to understand and independently solve quantum-mechanical problems, which is important for a large number of subjects that a student will encounter during the course of studies.				

Course content

Historical introduction and physical basics of quantum mechanics. Mathematical basics of quantum mechanics. Schrödinger equation. Harmonic oscillator. Transition from classical to quantum mechanics. Spherical symmetric potential. Hydrogen atom. The representation theory.

Student workload (hours)		Grading	
Lectures and Exercises	75	Assessment method	Points
Exam preparation	75	Partial exam	50
Assignments		Final exam	50
Other			
Total	150		
		Total	100

Literature

Mandatory:
1. D. Milošević, Kvantna mehanika I, 2015. (available at e-learning)

Recommended:
1. L. I. Šif, Kvantna mehanika, Vuk Karadžić, Beograd, 1968.
2. Supek, Teorijska fizika i struktura materije, II dio, Školska knjiga, Zagreb, 1977.
3. W. Greiner, Quantum mechanics. An introduction, Springer, Berlin, 1989.

Remarks