Faculty of Science and Mathematics / MATHEMATICS AND COMPUTER SCIENCE / PHYSICS

Course:	PHYSICS			
Course ID	**Course status**	**Semester**	**ECTS credits**	**Lessons** (Lessons+Exercises+Laboratory)
12066	Mandatory	1	5	2+2+0
Programs	MATHEMATICS AND COMPUTER SCIENCE			
Prerequisites	No prerequisites			
Aims	Getting to know the basic laws of physics that apply at the level of atoms and their nuclei			
Learning outcomes	Upon completion of this course, the student will be able to: 1. know how to solve the simplest examples of the one-dimensional Schrödinger equation 2. understand the statistical interpretation of the wave function and measurements 3. interpret the indeterminacy relation 4. know the basic properties of momentum in quantum mechanics 5. reproduce the basic properties of the spectrum of the hydrogen atom			
Lecturer / Teaching assistant	Professor Predrag Miranović, assistant Stevan Đuurđević			
Methodology	Lectures, exercises, consultations			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	The Schrödinger equation. Wave function.			
I week exercises				
II week lectures	Statistical interpretation. Normalization			
II week exercises				
III week lectures	Impulse. The uncertainty relation			
III week exercises				
IV week lectures	Time-independent Schrödinger equation. Stationary states			
IV week exercises				
V week lectures	A particle in an infinitely deep well			
V week exercises				
VI week lectures	Harmonic oscillator			
VI week exercises				
VII week lectures	Particle in finite depth well			
VII week exercises				
VIII week lectures	Free particle			
VIII week exercises				
IX week lectures	Delta-function shape potential			
IX week exercises				
X week lectures	Mathematical formalism of quantum mechanics			
X week exercises				
XI week lectures	Hilbert space. General statistical interpretation			
XI week exercises				
XII week lectures	Schrödinger and Heisenberg picture			
XII week exercises				
XIII week lectures	The Schrödinger equation in 3D			
XIII week exercises				
XIV week lectures	Angular momentum			
XIV week exercises				

XV week lectures	Hydrogen atom
XV week exercises	
Student workload	

Per week	**Per semester**
5 credits x 40/30=6 hours and 40 minuts 2 sat(a) theoretical classes 0 sat(a) practical classes 2 excercises **2 hour(s) i 40 minuts** of independent work, including consultations	Classes and final exam: **6 hour(s) i 40 minuts x 16 =106 hour(s) i 40 minuts** Necessary preparation before the beginning of the semester (administration, registration, certification): **6 hour(s) i 40 minuts x 2 =13 hour(s) i 20 minuts** Total workload for the subject: **5 x 30=150 hour(s)** Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) **30 hour(s) i 0 minuts** Workload structure: **106 hour(s) i 40 minuts (cources), 13 hour(s) i 20 minuts (preparation), 30 hour(s) i 0 minuts (additional work)**
Student obligations	Students are required to attend lectures and exercises
Consultations	Every week on student request
Literature	Introduction to quantum mechanics, D. J. Griffiths, Prentice Hall, New Jersey 2005
Examination methods	Tests (40 points), Homework (10 points), Final exam (50 points)
Special remarks	
Comment	

Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points