UNIVERSITÀ DI PAVIA

Anno Accademico 2018/2019

INTRODUCTION TO QUANTUM MECHANICS

Enrollment year	2018/2019
Academic year	2018/2019
Regulations	DM270
Academic discipline	FIS/03 (MATERIAL PHYSICS)
Department	DEPARTMENT OF ELECTRICAL,COMPUTER AND BIOMEDICAL ENGINEERING
Course	ELECTRONIC ENGINEERING
Curriculum	Microelectronics
Year of study	1°
Period	1st semester (01/10/2018 - 18/01/2019)
ECTS	3
Lesson hours	23 lesson hours
Language	English
Activity type	WRITTEN AND ORAL TEST
Teacher	BAJONI DANIELE (titolare) - 6 ECTS
Prerequisites	Calculus, Linear Algebra, Classical Mechanics, Electromagnetism
Learning outcomes	Fundamental concepts of quantum mechanics. Principles of operations of the main quantum technologies.
Course contents	Introdiction to Quantum Mechanics: - Shroedinger equation. - Wavefunction. - Simple systems: tunneling, harmonic oscillator. - Hydrogen atom. - Heisember uncertainty principle. - Crystals and Bloch theorem. - Energy bands in Crystals. Introduction to Quantum Technologies:

	- Qubits. - Entanglement. - Teleportation. - Quantum Cryptography. - Quantum Computing.
Teaching methods	45 hours of lectures.
Reccomended or required readings	Griffiths, “Introduction to Quantum Mechanics”
Assessment methods	Oral Exam
Further information	
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile