



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Meccanica Quantistica

1920-3-E3001Q072

Aims

Introduction to Quantum Mechanics

Contents

Fundamentals of Quantum Mechanics

Detailed program

The crisis of Classical Physics

The Schrödinger equation and its probabilistic interpretation

Heisenberg uncertainty relations

General properties of the Schrödinger equation

The general principles of quantum mechanics

Unidimensional problems, the harmonic oscillator

Angular momentum and spin

Tri-dimensional problems

Motion in a central potential; the hydrogen atom

Interaction with a classic electromagnetic field

Identical particles

Perturbation theory

Introduction to Relativistic Quantum Mechanics

Quantization of the electromagnetic field

Prerequisites

Good knowledge of Classical Physics

Teaching form

Lessons, 12 credits

Textbook and teaching resource

D.J. Griffiths, "Introduction to Quantum Mechanics"

S. Forte, L. Rottoli "Fisica Quantistica"

S. Gasiorowicz, "Quantum Physics", III ed

J.J. Sakurai, J. Napolitano, "Modern Quantum Mechanics"

L.D. Landau, E.M. Lifshitz, "Quantum Mechanics"

F. Schwabl, "Quantum Mechanics"

"The Feynman Lectures on Physics", Vol III. Free access website <http://www.feynmanlectures.caltech.edu>

Semester

First semester

Assessment method

Written and oral examination

During the course, two optional intermediate written examinations will be proposed. If both of them are passed, final written examination is waived.

Office hours

On student request, at agreed time
