

Physics 109 QUANTUM REALITY
Fall 2014, University of Rochester

Course instructor: Prof. Regina Demina
profdemina@gmail.com
Phone: 275-7357
Office: B&L 367
Office hours: TBD or by appointment.

This is an introductory course for non-physics major students who want to learn some basic principles of quantum mechanics. We plan to approach these concepts by relating them to human experience in everyday life. The course is designed with a lot of demonstrations, in many of which the students play a role of either quantum objects or the observers. The course is conceptual and the use of mathematics is limited to bare minimum. We plan to cover:

- Properties of waves
- Double-slit diffraction experiment
- Particle in a box and quantization of states
- Heisenberg's uncertainty principle
- Pauli principle and how to build an atom
- The birth of new particles and the birth of the universe

There are no prerequisites and no background knowledge is required.

The class URL is http://www.pas.rochester.edu/~regina/Phy109_2014F/

Textbook and readings

Quantum Physics for Poets by Leon M. Lederman, Christopher T. Hill

Course goals:

Quantum Physics sounds scary to many people. This course aims to overcome this fear and demonstrate that based on our everyday experience we know more about the quantum nature of things than we realize. The performance in this class is evaluated based on an essay on a topic chosen from several predefined subjects.