PHYS CS 36 **Spring 2008**

Quantum Physics

College of Creative Studies
University of California, Santa Barbara

This is the sixth of 6 courses in the CCS Physics sequence and is required for all CCS Physics majors. Topics to be covered include:

- Blackbody Radiation, Photoelectric effect, photons
- Compton Effect
- Rutherford Scattering
- Bohr Atom, atomic spectral lines
- De Broglie Waves, wave packets
- Uncertainty principle
- Quantization of energy, momentum, and angular momentum
- Wave mechanics, phase velocity and group velocity
- Schrödinger Equation, time-independent and time-dependent solutions
- Potential wells and barriers, tunneling
- Eigenvalues and eigenfunctions
- Quantum harmonic oscillator
- Hydrogen atom

Prerequisites: PHYS CS 35 or consent of instructor

Lecture:

Time: Tues/Thurs 3:30 - 4:50 p.m.
Place: PHELPS 1445
Instructor: Dr. Ilan Ben-Yaacov, ESB Room 2213, ext 5295, ilan@engineering.ucsb.edu
Office Hours: Tuesday 1:15-3:15pm in ESB 2213

Problem Sessions:

Time / Place: Thurs 11:00am - 12:50 p.m., PHELPS 1448
Thurs 1:00 - 2:50 p.m., PHELPS 1448
Instructor: Sathya Guruswami, sathya.guruswamy@ccs.ucsb.edu
Office Hours: Wed 10:30am-12:30pm in Bldg 322 room 1005

Teaching Assistant: Justin Lowrey, justin@lowreys.net
TA office hours: Wednesday 1:00-3:00pm, CCS Building

Grader: Ryan Hazelton, rhazelton@umail.ucsb.edu
Grader office hours: Wednesday 6:00-8:00pm, CCS Building

Required Texts: *Modern Physics*, 2nd edition, by Ohanian, 1995, ISBN 0-13-124439-6

Class Web Page: http://my.ece.ucsb.edu/PHYSCS36_S2008