

Syllabus
Introduction to Waves and Quantum Physics
Phys A 240-001
MO 156: MWF 8:30-9:20
Fall 2008

Instructor: Dr. Armin Kargol
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Office hours by appointment

Textbooks:

1. Randall D. Knight “Physics for scientists and engineers with modern physics”, Addison Wesley
2. Stephen T. Thornton, Andrew Rex “Modern physics for scientists and engineers”, Thomson, 3rd ed.

Course information and policies

- **Course overview:** This course is an introduction to quantum physics for science students. Prerequisites include an introductory course in mechanics (PHYS A101 or equivalent), in E&M (PHYS A102 or equivalent) and calculus (MATH A257). We will begin with waves (based on Knight’s book) and then discuss experimental basis and theoretical foundations of quantum mechanics (using Thornton’s book).
- **Tentative list of topics:** Waves and wave properties. Experimental basis of quantum theory. Structure of atom. Wave properties of matter and quantum mechanics. Hydrogen atom. Atomic physics. Statistical physics. Molecules and solids. Atomic nucleus. Nuclear interactions and applications. Elementary particles. Not all topics in every chapter will be covered and changes to this list may be made as the course progresses.
- **Grading:** Your grade will be determined by the number of points earned throughout the semester:
90% and up – A; 85-89.9% – B+; 80-84.9% – B; 75-79.9% – C+; 70-74.9% – C; 65-69.9% – +; 60-64.9% – D; 59.9% and below – F.

You will earn point from a midterm exam (20), final exam (40) and a number of homework assignments throughout the semester (30 pts total). The midterm exam will be held on Oct. 6, and the final exam – as scheduled in the university calendar. The deadlines for the homework will be announced for each assignment. Additional 10 pts (for a total of 100 for the course) will be added for attendance and participation in class.

- **Attendance:** Every student is allowed two excused and two unexcused absences. A student with more than two excused absences and two unexcused absences can expect that his/her final grade will be severely reduced.
- **Students with disabilities.** Student with disabilities that qualify for accommodations should contact Sarah Mead Smith, Director of Disability Services at 865-2990 (Academic Resource Center, MO 405). A student wishing to receive test accommodations (e.g., extended test time) should provide the instructor with an official Accommodation Form from Disability Services in advance of the scheduled test date.