

# COLLEGE OF CHEMISTRY COURSE GUIDE (../INDEX.HTML)

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## **PHYS 130 - QUANTUM AND NONLINEAR OPTICS (3 UNITS)**

(Taken from the UC Berkeley Course Guide (<http://guide.berkeley.edu>))

### **COURSE OVERVIEW**

#### **SUMMARY**

Detailed theory and experimental basis of quantum and nonlinear optics, exhibiting concepts of quantum measurement, noise, stochastic processes and dissipative quantum systems. Topics include second-quantization of electromagnetic fields, photodetection, coherence properties, light-atom interactions, cavity quantum electrodynamics, nonlinear optical systems, squeezed light, aspects of quantum information science, and contemporary research.

#### **PREREQUISITES**

PHYS 110A ([phys110a.html](#)) and PHYS 137A ([phys137a.html](#)), PHYS 137B ([phys137b.html](#)), or consent of instructor

Spring only

### **WORKLOAD**

#### **TIME COMMITMENT**

3 hours of lecture and 1 hour of discussion per week.

