Physics 137B, Fall 2007
Quantum Mechanics II

Lectures: 9:30-11 a.m. TuTh, 9 Evans Hall
Discussions: Tu 2-3 and We 3-4, 9 Evans Hall
There will be no discussion sections during the first week of class.
Professor office hour: 1:00-2:00 pm Tu, 549 Birge Hall, or by email appointment.
GSI office hour: TBA
There will be no office hours during the first week of class. I will be available after lectures in the first week for paperwork.

Course handouts are available at `http://socrates.berkeley.edu/~jemoore/p137b/p137b.html`

Professor	**GSI**
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Course grading:
2 midterms (80 minutes), October 9 and November 13, plus final exam.
Grading: Problem sets 30%
Midterms 15% each
Final 40%

Problem sets are posted on Fridays and due the following Friday at 5 pm in the 137B box (2nd floor LeConte).
Once in the semester you are permitted to turn in a problem set late, but it must be handed in by the following Monday at 5 pm.

Prerequisites: Physics 137A or equivalent.

Books: You are responsible for all material covered in lecture. The required textbook is Bransden and Joachain, *Quantum Mechanics* (second edition). Other books are available on reserve in the physics library.

Catalog description: "Introduction to the methods of quantum mechanics with applications to atomic, molecular, solid state, nuclear and elementary particle physics."

I. Brief review of basic principles of quantum mechanics, concentrating on angular momentum and. quantum mechanics of multiple identical particles.

II. Time-independent approximation methods. Fine structure of atoms.

III. Time-dependent approximation methods. Fermi's Golden Rule.

IV. Interaction of matter and electromagnetic fields.

V. Scattering theory. Approximation methods for scattering states.

VI. Quantum statistics. Bose and Fermi gases.