

(Syllabus)  
**Chemistry 8551 Quantum Mechanics I**  
Fall Semester, 2015  
MWF 2:30–3:20p, Room 140 Kolthoff Hall

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In this course, fundamentals of quantum mechanics will be covered, including momentum states of free particles and wavepackets, uncertainty relations, and the time-independent and time-dependent Schrödinger equation. Time-independent and time-dependent perturbation theory will be covered along with absorption and emission of radiation and the coherent coupling of molecules to light.

*Prerequisite:* Undergraduate quantum mechanics.

*Textbook:* “Elements of Quantum Mechanics” by M.D. Fayer

*Other useful books (not required):* “Introduction to Quantum Mechanics” by D.J. Griffiths, “Quantum Mechanics in Chemistry” by G.C. Schatz and M.A. Ratner

*Grading:* Final Grades will be based upon performance on the items listed below. If your final grade is between two letter grades, then your classroom participation will tip the balance. Registered students who do not complete the course will receive an F, unless they officially withdraw from the course. Incompletes will be given only when discussed with and approved by the instructors before the end of the semester.

- (20%) Homework Assignments: Approximately 8 to 12 homework sets will be assigned from the material covered in the book and in class. The instructor will assign these in-class and will give the due date at that time.
- (40%) Midterm exam, Mon, Oct 26, regular class time (maybe longer).
- (40%) Final exam, Mon, Dec 18, 8:00-10:00a.

*Office Hours:* By appointment, please contact me by email or in person.