

CHEM 915: Intermediate Quantum Mechanics (3 credits)
Fall 2008

Course presents the mathematical and physical principles of quantum chemistry.

Line number:	42852
Instructor:	Krzysztof Kuczera, 5090 Malott phone: 864-5060 ; kkuczera@ku.edu
Time & Place:	9:30–10:45am TR, 4063 Wescoe
Textbook:	E.Merzbacher, Quantum Mechanics, 3 rd Ed. Wiley, 1998

The overall **course grade** will be determined by the sum of three components: homework (50%), midterm exam (25%) and final exam (25%).

Exam dates:

Midterm	October 9
Final	Monday, December 15, 7: 30–10: 00 am

Homework. Problem sets will be assigned approximately weekly. Regular problem solving is the most important part of learning quantum chemistry. Work individually, in groups or in consultation with me, but the final work handed in must be your own

Reading: I recommended reading the relevant chapters of textbook both before and after the material is covered in class. In order to better understand the material it is useful to look at alternative presentations of material, such as

1. J. J. Sakurai, Modern Quantum Mechanics.
2. P.A.M. Dirac, The Principles of Quantum Mechanics.
3. G.C. Schatz and M.A. Ratner, Quantum Mechanics in Chemistry.

(Approximate) Schedule

Dates	Topic	Chapter
08/21-09/04	Introduction & principles	1-6
09/09-09/25	Bras, kets & vector spaces	9-10
09/30–10/07	Quantum dynamics	14-15
10/09	Midterm Exam	
10/14-10/23	Angular momentum and spin	11,16-17
10/28–11/06	Density matrices	15-17
11/11-11/25	Perturbation theory	18-19
12/02-12/11	Many-body systems	21-22
12/15	Final Exam	