

Syllabus

Applied Quantum Mechanics, Phys709 - Fall 2012

8/17/2012

Instructor: Professor Mick O'Shea
Office: Cardwell Hall 331; email: mjoshea@phys.ksu.edu
Office Hours: Mon. 2:00 – 3:30 p.m., Thurs 9:45 – 11:00 a.m., or by appointment.

Lectures: Tues, Thurs., 2:30 a.m.-3:45 p.m.

Text: Introduction to Quantum Mechanics, 2nd Edition, David J. Griffiths

Course description: A study of quantum mechanics and its application to one electron atoms, multielectron atoms, quantum statistics, spectra of molecules and selected topics in quantum excitations of solids, nuclear physics, and elementary particles.

Course goals: Give students a strong foundation in problem solving in quantum mechanics in a range of areas.

Course Website: K-State Online (log on and you will have access to the website if you are enrolled). Check this website for important messages.

Preparing for lecture: I strongly recommend that you read the chapters in the text to be covered in advance of the lecture. You will not understand all the detail in the chapter prior to lecture, but you will be better prepared to gain insight into, and understanding of, the material in lecture.

Homework (HW): HW assignments and due dates will be posted in the Homework folder each week. HW points will be scaled to 200 pts. Feel free to work with other students on the HW assignments. When you come to write out the HW solution, do this by yourself.

Exams: There will be three in-class exams worth 100 points each (see “class schedule” below) and a final worth 200 pts. Exam problems will be based on lecture material and HW.

Disability: If you have any condition such as a physical or learning disability, which will make it difficult for you to carry out the work as I have outlined it or which will require academic accommodations, please notify me and contact the Disabled Students Office (Holton 202), in the first two weeks of the course.

Plagiarism: Plagiarism and cheating are serious offenses and may be punished by failure on the exam, paper or project; failure in the course; and/or expulsion from the University. For more information refer to the “Academic Dishonesty” policy in K-State Undergraduate Catalog and the Undergraduate Honor System Policy on the Provost’s web page at <http://www.ksu.edu/honor/>.

Statement Defining Expectations for Classroom Conduct: All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article VI, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

Statement for Copyright Notification: Copyright 2011 (Michael O'Shea) as to this syllabus and all lectures. During this course students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the professor teaching this course.

Grades: Final grades will be determined from the total points as follows:

A 630 -700	B 560-629
C 490-559	D 420-489
F Less than 420	

Class Schedule

Date	Chap.	Topics
Aug. 21	1-2	Review
23	2	-Time Independent Sch Equ
28	2	
30	3	- Formulism
Sep. 4 th	3	
6	4	- Hydrogen atom
11	4	
13	5	Identical particles
18	5	
20		Exam 1 Chap. 1-5
25	5	
27	5	
Oct. 2	5	
4	6	Time dependent perturb thy
9	6	
11	6	
16	6	
18		Exam 2 Chap. 6 - 7
23	7	Variational principle
25		

Date	Chap.	Topic
30	7	
Nov. 1	8	The WKB approximation
6		
8	9	Time dependent perturb theory
13		
15		
19-23		Holiday
27	11	Scattering
29		Exam 3 Chap. 8, 9, 11
Dec. 4		
6		
Tues. Dec. 11th		Final Exam (Comprehensive) 9:40 a.m. -11:30 a.m.