

## Course Syllabus

### PHYS 4610 Quantum Mechanics

Spring 2014

[Physics.weber.edu/amiri/quantummechanics](http://Physics.weber.edu/amiri/quantummechanics)

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#### Course Description

This is a one-semester course on the concepts and applications of Quantum Mechanics. Quantum Mechanics is the foundation of most branches of modern physics. The goal of the course is to introduce the students to the main concepts and to prepare them to use the methods to solve problems. This course is also expected to prepare the students for more advanced courses and research in experimental or theoretical physics.

#### Brief Outline

1. The Wave Function
2. Time-Independent Schrodinger Equation
3. Mathematical Formalism
4. Quantum Mechanics in Three dimensions

#### Recommended Literature

Textbook: David Griffiths, Introduction to Quantum Mechanics, 2<sup>nd</sup> edition.

Others books:

- H. Ohanian, Principles of Quantum Mechanics
- R. Liboff, Introductory Quantum Mechanics
- Eisberg & Resnick, Quantum Physics

#### Classroom, Class Hours and Office Hours

**Classroom:** SL 240

**Time:** Monday, Wednesday, and Friday, 12:30-1:20

**Office hours:** 9:00-10:00 Monday-Thursday, Friday: 9:00-9:30

### Exams and Assignments:

- Exams will be given in the College of Science Testing Center. They are open book (but not open notes) and normally take about 3 hours. You may take a table of integrals to the testing center.
- Assignments will be collected on the due dates and at the beginning of the class. Late assignments are accepted for half credit. Solutions will be posted in PDF at the following web address:  
<http://departments.weber.edu/physics/amiri/quantummechanics>
- Consult the schedule of exams and assignments for the due dates.

CHAPTER	NO. OF HOURS	ASSIGNMENTS	DUE DATE
1.1-1.4	3	1.3, 1.4, 1.5	Monday, Jan. 13
1.5-1.6	2	1.7, 1.9, 1.17	Friday, Jan. 17
2.1-2.2	2	2.4, 2.7, 2.8	Friday, Jan. 24
2.3	6	2.10, 2.12, 2.13	Friday, Feb. 7
2.4	2	2.21, 2.22	Wednesday, Feb. 12
2.5-2.6	4	2.23, 2.29, 2.34	Monday, Feb. 24
3.1-3.3	3	3.1, 3.4, 3.5, 3.8	Monday, Mar. 3
3.4-3.5	2	3.12, 3.13, 3.17	Friday, Mar. 7
4.1	3	4.2, 4.3, 4.5	Monday, Mar. 24
4.2	5	4.10, 4.11, 4.13, 4.15, 4.16	Friday, Apr. 4
4.3	3	4.19, 4.22, 4.23	Friday, Apr. 11
4.4	3	4.27, 4.29, 4.33	Monday, Apr. 20

### Course Schedule

### Exam Schedule

EXAM	CHAPTERS	DATE
1	1.1-2.3	Monday-Tuesday, Feb. 10-11
2	2.4-3.5	Monday-Tuesday, Mar. 17-18
3	4.1-4.4	Wednesday, Apr. 23

## Grade Scale

Grades will be assigned based on the homework assignments and the exams. There will be *thirteen* homework sets of total 41 problems. Every student should attempt to solve all problems. The homework solutions are to be turned in at a given deadline. The instructor's solution of the problems will be posted on the web page shortly after. All homework will be graded and a score of 0 to 10 will be assigned for each problem depending on the student's effort with the solution. Discussions of the problems among students are encouraged, but each student should turn in his/her own solutions. In addition, there will be *three* exams that will be given in the Testing Center. Please consult the exam schedule for the included chapters and the times. Exams are *open book* but *not open notes*. You will be allowed to take a table of integrals to the testing area.

- Exams: 25% each
- Homework: 20%
- Quiz: 5%

A, A-	B+, B, B-	C+, C, C-	D+, D, D-	F
89-100	77-88.9	64-76.9	50-63.9	< 50

## Honor Code

Students are expected to uphold the Academic Honor Code published in the Weber State University Student Handbook. The Academic Honor System is based on the premise that each student has the responsibility to (1) uphold the highest standards of academic integrity in the student's own work, (2) refuse to tolerate violations of academic integrity in the university community, and (3) foster a high sense of integrity and social responsibility on the part of the university community.