

January 9, 2017

Syllabus: PHY 6400, Quantum Physics I
Course Reference Number 22774, Section 002

Instructor: Paul E. Karchin, Professor
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Class Meetings: MWF, 1:30-2:20 pm, Room 177, Physics Research Building

Office Hours. Students are welcome to meet with me after class or at another arranged time. I am happy to correspond by e-mail.

Course Description: Operators and their eigenfunctions, quantization rules, solution of Schroedinger's equation in 1- and 3-D, the hydrogen atom, angular momentum, spin, bosons, fermions, time-independent perturbation theory.

Course Learning Outcomes: Prepare written solutions of quantitative problems covering topics in the course description. Commit to memory fundamental definitions and formulas of non-relativistic quantum mechanics.

Required Text: "Introduction to Quantum Mechanics," 2nd edition, by David J. Griffiths, Pearson Prentice Hall, 2005. This edition is available from internet sellers used (about \$15) or new (about \$90).

Attendance and Class Participation. Students are expected to attend regularly and participate in class discussion and problem solving exercises. In-class activities are organized using student learning communities.

Homework consists of 10 problems sets. The problem sets are due at the start of class on specified Fridays. Each student is assigned particular exercises or problems for presentation to the class.

Exams. There are four in-class exams and a final exam. Exams are closed book. The in-class exams cover a specific set of topics; the final exam is cumulative.

Grading. The course grade has the following components: 15% attendance; 10% HW and presentations; 75% exams. To accommodate routine illness and personal contingencies, students can miss up to two classes and one problem set without penalty.

The course grade will be assigned according to the total number of percentage points as follows.

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
90-100	85-89	80-84	75-79	70-74	65-69	60-64	55-59	50-54	45-49	40-44	0-39

Generally, if a student is registered for the course a regular grade will be given. A grade of incomplete (I) will be given only in exceptional cases (to accommodate illness or emergency) after consultation with the instructor before the end of the term.

Drop/Withdrawal Dates.

Last Day for Tuition Cancellation: Mon Jan 23

Classes Dropped will not appear on your Academic Record: Tue Jan 24 - Sun Feb 5

Last Day to Request Course Withdrawal: Sun Mar 26

Student Disability Services. If you have a documented disability that requires accommodations, you will need to register with Student Disability Services for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-577-3365 (TTY: telecommunication device for the deaf; phone for hearing impaired students only).

PHY 6400 Class Schedule (subject to change)

Dates (M,W,F)	Text Sections (page count)	HW (due)
Jan. 9, 11, 13	1.1-1.6 (18 pp.)	
Jan. 18, 20	2.1-2.2 (7 pp.)	#1 (1/20)
Jan. 23, 25, 27	2.3-2.4 (27pp.)	#2 (1/27)
Jan. 30, Feb. 1, 3	Exam 1 (2/3)	
Feb. 6, 8, 10	2.5-2.6 (25 pp.)	#3 (2/10)
Feb. 13, 15, 17	3.5-3.6 (21 pp.)	#4 (2/17)
Feb. 20, 22, 24	Exam 2 (2/24)	
Feb. 27, Mar. 1, 3	4.1-4.2 (29 pp.)	#5 (3/3)
Mar. 6, 8, 10	4.3-4.4 (41 pp.)	#6 (3/10)
week of Mar. 13	Spring Break	
Mar. 20, 22, 24	Exam 3 (3/24)	
Mar. 27, 29, 31	4.4-5.1 (+9 pp.)	#7 (3/31)
Apr. 3, 5, 7	5.1 (9 pp.)	#8 (4/7)
Apr. 10, 12, 14	Exam 4 (4/14)	
Apr. 17, 19, 21	6.1-6.2 (16 pp.)	#9 (4/21)
Apr. 14	review, evaluation	#10 (4/14)
May 1 (12:30-2:30 pm)	Final Exam (5/2)	