

PHYS461/861 QUANTUM MECHANICS

Spring 2023

Lecture: MWF: 10:30 am - 11:20 am, Jorgensen Hall 247
Instructor: Martin Centurion (Jorgensen Hall 079, 472-5810, martin.centurion@unl.edu)
Help Hours: TBA or by appointment (email instructor).

Course Description:

This course introduces the basic concepts and formalism of quantum mechanics, its applications to simple quantum systems, such as free particles, infinite and finite potential wells and the hydrogen atom, as well as the mathematical tools needed to formulate and solve problems in quantum mechanics.

Pre-requisites:

A grade of P, C or better in PHYS 213 and 311; or permission.

Textbook

David J. Griffiths, Darrell F. Schroeter Introduction to Quantum Mechanics, 3rd Edition Chapters 1-4.

General:

The assumption underlying this class is that you will spend approximately 12-15 hours/week outside of class on reviewing the subject matter, preparing for quizzes/exams, doing homework, and studying. You must read the appropriate parts of the text **before** coming to class and the pace of the class will assume that you have done so.

Homework:

Weekly homework assignments will be posted on Canvas. The solutions should clearly explain all the important steps. You may discuss ideas and approaches with other students after you have spent some time thinking about these problems. However, you are required to complete all the technical steps yourself. Copying homework (either from an external source or from fellow students) is considered cheating. (<http://stuafs.unl.edu/ja/code/three.shtml>)

Please note that the quizzes and exams will assume that the HW problems have been worked on, digested, and understood.

Homework will be graded by a grader. The grader information will be announced separately on Canvas. Late homework will not be accepted except for special circumstances (such as illness) communicated to the instructor in a timely manner. If you believe your grade is incorrect or unfair, first discuss the grader and then the instructor in cases where the issues could not be resolved.

Quizzes:

There will be a few in-class quizzes, depending on the class progress. The quizzes will be announced in class.

Exams:

There are three midterm exams and one final exam. Below is a tentative schedule and the midterm dates may change depending on the class progress.

First Midterm Exam: Friday. Feb. 17, in class
 Second Midterm Exam: Friday. Mar. 24, in class
 Third Midterm Exam: Friday. April 28, in class
 Final Exam: (exam week): Fri. May 19, 7:30 to 9:30 am, room TBA

Grade:

Homework	20%
Midterms (3)	15% each
Quizzes	5%
Final Exam (cumulative)	30%

Course grades will be assigned according to the following point scale (total: 100 points):

Score	Grade
95	A+
90	A
85	A-
80	B+
75	B
70	B-
65	C+
60	C
57	C-
53	D+
50	D
47	D-
<47	F

Services for Students with Disabilities: The University strives to make all learning experiences as accessible as possible. If you anticipate or experience barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can discuss options privately. To establish reasonable accommodations, I may request that you register with Services for Students with Disabilities (SSD). If you are eligible for services and register with their office, make arrangements with me as soon as possible to discuss your accommodations so they can be implemented in a timely manner. SSD contact information: 117 Louise Pound Hall; 402-472-3787.

Academic Integrity: Academic honesty is essential to the existence and integrity of an academic institution. The responsibility for maintaining that integrity is shared by all members of the academic community. The University's [Student Code of Conduct](#) addresses academic dishonesty. Students who commit acts of academic dishonesty are subject to disciplinary action and are granted due process and the right to appeal any decision.

Intellectual Property and Privacy Issues: Any material related to this course should be treated as the intellectual property of the instructor or creator of the material, and is not to be shared outside the context of this course. Students may not make or distribute files, screen captures, audio/video recordings of, or livestream, any class-related activity, including lectures and presentations, without

express prior written consent from the instructor. Failure to follow this policy on recording or distributing class-related activities may subject you to discipline under the [Student Code of Conduct](#).

Inclement weather instructional continuity. If in-person classes are canceled, you will be notified of the instructional continuity plan for this class by email and/or Canvas announcement.

UNL Course Policies and Resources: Students are responsible for knowing the university policies and resources found at <https://go.unl.edu/coursepolicies>.