	Phys327	Quantum Mechanics II	Winter 2022
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Prof. Russell Neilson neilson@drexel.edu

Time: Mon/Wed 12:00-1:50pm

In person location: Curtis Hall 258

Remote synchronous link:

https://drexel.zoom.us/meeting/register/tZYucO2upzkpGNcG3 ap3HDwfrAKFj4KloSL

Required Text: *Introduction to Quantum Mechanics*, 3rd Edition, by

David J. Griffiths and Darrell F. Schroeter (2018).

In person help session: TBD

Zoom help session: By appointment using the same zoom session as class.

Please email.

Course Description: Covers the three-dimensional Schrodinger equation, angular momentum, matrix mechanics, the hydrogen atom, and perturbation theory.

Course purpose within a program of study: This course will partially fulfill the requirement for core courses in the plan of study for a B.S. in Physics.

Prerequisites: PHYS 326.

Statement of expected learning: This course will address the Drexel Learning Priorities, including Communication, Information Literacy, and Technology Use. By the end of this course, students will be able to do the following:

- Solve for the eigenstates and energies of a single particle in three dimensions for the case of central potential.
- Understand the detailed structure of the wave function for Hydrogen and hydrogen-like atoms.
- Compute properties of systems including orbital angular momentum and spin, including magnetic moments.
- Solve for the eigenstates and energies of multiple particle systems such as occur in simple atoms and solids.
- Find most probable configurations and energies of many-particle, many-level systems using quantum statistical mechanics.
- Use knowledge of the eigenstates and energies of simple systems and approximation methods to solve for energies of perturbed systems.

Grading matrix: Grades will be based on:

Homework: 35% Midterm: 25% Final: 40% Homework problems will be collected and graded most weeks. Homework may be submitted in class, or electronically on Learn. If submitting electronically, please submit a PDF file. Students are encouraged to work together on homework in the form of study groups and discussions, but copying is not acceptable. Exams will be open book and open notes, but sharing among students and use of additional online materials is strictly forbidden. Students in violation of these policies will receive no credit for the assignment.

Grade scale:

A 90-100, **B** 80-89, **C** 70-79, **D** 60-69, **F** 0-59

Late Homework policy: It is expected that homework will be submitted on time. Unexcused late homework will be subject to a 25% penalty. If you require an extension, please request by email before the due date.

Course calendar: Students are expected to complete assigned readings before scheduled classes. Homework assignments will be posted on Learn and are due by the end of the day on Thursdays. Below is a rough guide of anticipated course content and due dates. Note, this is likely to vary.

Week	Textbook sections	Homework/Midterm
1/3-1/7*	4.1	
1/10-1/14	4.2	HW #1 due
1/18-1/21	MLK, 4.3	HW #2 due
1/24-1/38	4.4	HW #3 due
1/31-2/4	Review, Midterm	Midterm 2/2
2/7-2/11	5.1	HW #4 due
2/14-2/18	5.2	HW #5 due
2/21-2/25	5.3	HW #6 due
2/28-3/4	7.1	HW #7 due
3/7-3/11	Review	HW #8 due

^{*}Remote synchronous classes, following Drexel University COVID-19 policy.

Course policies: The instructor reserves the right to change the course as described in this syllabus at any time. Students will be notified of changes by email and class announcement

Academic Integrity, Plagiarism, Dishonesty and Cheating Policy

Student with Disability Statement

Course Add/Drop Policy

Course Withdrawal Policy

- https://drexel.edu/provost/policies/academic-integrity/
- https://drexel.edu/disability-resources/support-accommodations/student-fa
- http://www.drexel.edu/provost/policies/course-add-drop
- http://drexel.edu/provost/policies/course-withdrawal