Course Name: **Modern Physics II, Fall 2022**

Instructor: **Dr. Moumita Das**
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Location/time for Class Meetings and Office Hours:

Location: Max Lowenthal Hall (LOW)-3125.
Class time: Mondays, Wednesdays and Fridays, 10-10:50 am.

Office Hours: 5.30 -7.00 pm Tuesdays and Fridays on Zoom, other times by appointment via email.
Zoom link: https://rit.zoom.us/j/99393436149

Prerequisites

PHYS-213 (Modern Physics I) or equivalent course. Students in the PHYS-BS program must also complete PHYS-275 prior to taking this course.

Materials:

Textbook (required) Modern Physics 4th edition, by Kenneth Krane,Wiley, or the corresponding E-book. You can use an older edition but make sure you are in sync with what is discussed in class.

Course webpage http://mycourses.rit.edu

Course Description (Official Outline from SIS)

"This course is a continuation of a survey of modern physics beyond the topics introduced in Modern Physics I. Central topics include the physics of multi-electron atoms, molecular structure, fundamentals of statistical physics applied to systems of particles, elementary solid-state physics, applications to semiconductor materials and simple devices, and basic elements of nuclear physics".

Approximate Timeline:

Week	Topics
1-2	Many Electron Systems
3-4	Molecular Structure
5-8	Statistical Physics
9-12	Solid State Physics, with applications to semiconductor materials
13-15	Elements of Nuclear Physics

Policy on Graded Work and Evaluation Criteria

Your course grade is determined by a combination of your performance on exams and homework assignments. Your exam/HW grades will depend on your solution and its rigor, and not just whether the final answer has the correct expression or value. Partial credit will be given where due.

I will make every attempt to return graded exams within two weeks of the exam date and instruct the course TA to do the same with HW. Should there be delays due to unforeseen circumstances, the class will be notified in advance.

Letter Grade Cut-offs:

A type grades: 100 % - 90%

B type grades: 89.9 % - 80%

C type grades: 79.9% - 70%

D: 69.9 % - 60%

F: Below 59.9%

The exact cut-off for +/- within a letter grade will be decided based on how the class is doing.

The following proportions will be used:

Homework: 45%

Midterm Exams: 25%

Final Exam: 25%

Class performance: 5%

RIT's Grading Policy can be found here: https://www.rit.edu/academicaffairs/policiesmanual/d050

Make-up exam policy

Make-ups or early final exams will not be allowed except under extreme circumstances. Submission of the request is in no way a guarantee that it will be approved. You must allow sufficient and reasonable lead time for a considered response to your request.

Exam info

There will be two midterm exams and a final exam. All exams are closed book. The final exam will be cumulative. Tentative Dates for Midterm Exams: **October 3 and November 14.**

You may a use an equation sheet which you should attach with your submitted exam. You will not be supplied a list of constants unless they are specific to a given problem, so you should put them on your sheet. Suggestion: Use the list from the back cover of the text. Additionally, your sheet may not contain any annotations just equations however reasonable subscripts are allowed. Equation sheets that do not conform to given instructions may result in a grade of zero for the associated exam.

Homework

Homework will be due on Mondays by midnight unless otherwise noted. There will approximately 10 HWs. **Please upload your HW has a pdf file on Mycourses.** If you have not done this previously, I will be happy to explain how; please send me an email.

HW questions may not be of equal value. One or more of the problems will be graded; method counts as much if not more than the answer. Late homework will not be accepted without prior arrangements.

- Make your solutions as clear and neat as possible.
- Number your questions and submit your homework with the questions in the assigned order
- Box or somehow otherwise clearly mark your final answer.
- Your homework should include all valid or required steps so that you or someone else could follow your method for a similar question.
- You are welcome to consult and discuss homework problems with others, however the assignment you turn in must be your own work and expressed in your own words to receive credit. If there is reasonable evidence of copying, either from another student or from a book/online source, it will be deemed an act of plagiarism, and lead to a failing grade on that assignment.
- Doing a good job on homework benefits everyone. You'll do better on the tests, and your homework scores will be higher.

I have also created a Slack Channel for the Class to use as an online discussion forum to discuss both ideas and assignments. A key benefit of the shared, online forum is that everybody in the class will learn from the discussion, including me. There are two ground rules:

1. Please keep the discussion polite, positive, and supportive of each other; please do not use exclamation mark emojis or write in all caps, which can be stressful to readers, especially when already stressed or overworked.
2. Be generous with hints and advice, but never post solutions.

You can join this channel by following this link:

https://join.slack.com/t/slack-8a55768/shared_invite/zt-1eikvbaz6-NiTrapVlTIQ3yUTtbVzU~A

Statement on Reasonable Accommodations

RIT is committed to providing reasonable accommodations to students with disabilities. If you would like to request accommodations such as special seating or testing modifications due to a disability, please contact the Disability Services Office. It is located in the Student Alumni Union, Room 1150; the Web site is www.rit.edu/dso. After you receive accommodation approval, it is imperative that you see me during office hours so that we can work out whatever arrangement is necessary.

Academic Integrity Statement

As an institution of higher learning, RIT expects students to behave honestly and ethically at all times, especially when submitting work for evaluation in conjunction with any course or degree requirement. The School of Physics and Astronomy encourages all students to become familiar with the RIT Honor Code and with RIT's Academic Honesty Policy.

Course Copyright Policy

All course materials students receive or to which students have online access are protected by copyright laws. Students may use course materials and make copies for their own use as needed, but unauthorized distribution and/or uploading of materials without the instructor's express permission is strictly prohibited. RIT Policy C03.2 Copyright Policy addresses this issue (https://www.rit.edu/academicaffairs/policiesmanual/c032). For example, uploading completed labs, homework, or other assignments to any study site constitutes a violation of this policy. Students who engage in the unauthorized distribution of copyrighted materials may be held in violation of the University's Code of Conduct, and/or liable under Federal and State laws.

Title IX Statement

Title IX violations are taken very seriously at RIT. RIT is committed to investigate complaints of sexual discrimination, sexual harassment, sexual assault and other sexual misconduct to ensure that appropriate action is taken to stop the behavior, prevent its recurrence, and remedy its effects. Please view the Title IX Rights and Resources at RIT; you can find additional syllabus language that you can modify as need on its Syllabus Language subpage.

Changes to the syllabus

I have provided this syllabus as guide to our course and have made every attempt to provide an accurate overview of the course. However, as instructor, I reserve the right to modify this document during the semester, if necessary, to ensure that we achieve course learning objectives. You will receive advance notice of any changes to the syllabus through myCourses/email.

Finally, I want for you to learn the material taught well, enjoy the course, and succeed. If you have questions about your performance during the course, please contact me and we can discuss your progress.