General Course Information:

PHYS-213 Modern Physics I
Room CAR-1125
MWF 12:00 – 12:50 pm
Course Webpage: **https://mycourses.rit.edu**

Instructor and Teaching Assistant Information

Dr. Michael Kotlarchyk
Professor and Head
School of Physics and Astronomy
Office Location: CAR-1258
Office Hours: M, F 2:00 – 3:00 pm

Office Phone: (585) 475-6115
Email: mnksps@rit.edu

Emily Finson
Teaching Assistant
Physics Graduate Student
Office Hours Location: CAR-3200
Office Hours: M, R 11:00 – 11:50 am
(beginning week of January 23)

Email: eaf1061@rit.edu

Course Description

This course provides an introductory survey of elementary quantum physics as well as basic relativistic dynamics. Topics include the photon, wave-particle duality, deBroglie waves, the Bohr model of the atom, the Schrodinger equation and wave mechanics, quantum description of the hydrogen atom, electron spin, and multi-electron atoms.

We will be covering selected sections of Chapters 1 – 8 in the text.

Prerequisites

University Physics II or equivalent (PHYS-212 or PHYS-217 or PHYS-209)

Textbook

Kenneth S. Krane, **Modern Physics**, 3rd or 4th edition (Wiley).

Important: The homework system **required** for the course (described below) comes together with the eBook of the Krane text (the 3rd edition), i.e., you cannot purchase the homework system alone without the eBook. So if you do not feel you need the hardcopy textbook, there is no need to purchase it, i.e., just use the eBook. FYI, the cost of the homework system + eBook is very close to that of the hardcopy textbook alone. If you happened to already purchase the hardcopy of the textbook, you should be able to return it in a timely way with the receipt.

Homework

Homework (15% of course grade) will, for the most part, be administered primarily through **Webassign**, a web-based assignment and grading system. To purchase access to this system (along with the eBook), go to the following URL using any browser:

https://www.webassign.net

To log in for the first time, click on "***Enter Class Key***" near the top-right of the Cengage/Webassign Sign-In page. The class key you need to enter is

rit 1428 7930

Then follow the instructions to set up your account for the course.

The use of WebAssign is pretty simple and straightforward. If needed, there is online *help* and an online *users manual*. **In general, I will post a new homework set on WebAssign approximately once a week.** Be aware that even though all students in the class will be assigned the same problems, the specific numbers given to each individual will, in general, be unique. You have a maximum of seven (7) attempts at submitting your answers to each assignment.

You should keep a separate homework notebook where you clearly lay out the steps in solving each HW problem. This is the best way to reinforce clarity of thought, neat working habits, clean manipulation of units, etc. **A well-kept homework notebook will help you significantly when it comes time to review for the exams and, no doubt, it will significantly impact your performance on the exams.** In addition to the assigned homework, you are also encouraged to work (in your notebook) some additional end-of-chapter Questions and Problems from the text in order to gain additional practice. If you come to see the instructor or the teaching assistant outside of class with HW questions, please have your homework notebook with you so they can help you more effectively.

A Final Word: In spite of the safeguards built into the WebAssign system, there is always a small chance that an occasional dishonest student may still find ways to take it upon him/herself to circumvent these safeguards. **The usual rules of honest academic conduct still hold, and any discovered misuse of the system is unacceptable.** Any student engaged in dishonest activity (for example, sharing passwords or access numbers, seeking another student to work problems with your uniquely specified numerical data, etc.) will be subject to prosecution through standard academic channels.

Weekly Quizzes and Exams

There will be a **weekly 10-15 minute quiz** near the end of class each **Friday** (20% of course grade), except for Week-1 and the weeks when the hourly exams are scheduled (see below). No make-up quizzes will be given, but the lowest quiz-grade will be dropped.

There will be **3 hourly exams** (15% each) and a **comprehensive final exam** (20%). **Note:** If your final exam score is higher than your lowest hourly exam score, the final exam score will replace it.

Hourly Exam Dates

Monday, February 13 Friday, March 10 Monday, April 10

Final Exam Date

Friday, May 5

Room CAR-1125

10:45am – 1:15pm

Course Grades

Final course grades will correspond to the following ranges of overall numerical course scores (as determined by the weightings above):

A- to A: 89 – 100
B- to B+: 77 – 88
C- to C+: 65 – 76
D: 53 – 64
F: 52 or below