

Northern Illinois University

Course Syllabus for Physics 283 --- Modern Physics

Fall Semester, 2023

**Instructor:** Dennis Eugene Brown Faraday West 208W and/or 213W  
DEBrown.niu.edu@gmail.com

**Office Hours:** TTh 11-3:00pm tel: 630-910-5512  
(always available on a walk-in basis if I am in my office or lab)

**Physics 283 WebPage:** [www.niu.edu/brown](http://www.niu.edu/brown)

**Course Textbook:** Modern Physics, 4<sup>th</sup> edition **Author:** Kenneth Krane  
OpenStax University Physics Volume 2 & 3 (free and online)

We will be covering the following material in Krane: (Tentative Schedule)

The Special Theory of Relativity:	Chapter 2 / Electromagnetic Waves	Unit 16
Origins of Quantum Theory:	Chapter 3 / Interference	Unit 3
Wavelike Properties of Particles:	Chapter 4 / Diffraction	Unit 4
<b>Quiz #1</b>		
Rutherford-Bohr Model	Chapter 6 / Diffraction	Unit 4
The Schrodinger Equation:	Chapter 5 / Reflection	Unit 1
The Hydrogen Atom:	Chapter 7 / Refraction	Unit 1
<b>Quiz #2</b>		
The Hydrogen Atom:	Chapter 7 / Polarization	Unit 1
Many-Electron Atoms:	Chapter 8 / Thin Lenses	Unit 2
<b>Quiz #3</b>		
Statistical Physics:	Chapter 10 / The Eye	Unit 2
Solid State Physics:	Chapter 11 / Telescopes	Unit 2

**Final Exam** (Tuesday, December 12, 4-5:50 p.m.)

Problem Sets will be posted on [www.niu.edu/brown](http://www.niu.edu/brown) every week, and they will be due one week later at the beginning of the class (**not at the end of class**). Late homework will be penalized 10% per day (however, *the problem sets just before quizzes&exams*—and the final problem set will not be accepted late).

All quizzes & exams are closed book, no notes. Graphics Calculators and Cell Phones will not be allowed, only scientific calculators can be used.

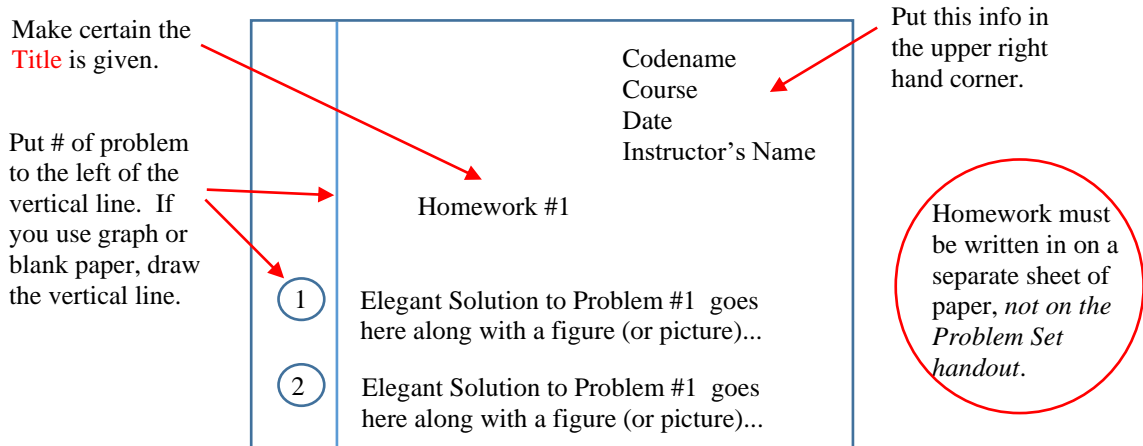
Tentatively: All Problems Sets will make up 10% of the grade  
 Surprise short in-class quizzes make up 5% of the grade  
 Each quiz “ “ 20% ” ”  
 Final Exam “ “ 25% “ “

The lowest scoring Problem Set will not be counted towards the final grade.

**There are Physics Tutors available in Faraday East Room 251**

## Additional Notes:

- (1) Late homework is penalized at 10% per school day.
- (2) Do not put any homework in the box outside my door—I may never see it and it will get mixed up with graded work. If I am not in my office and you wish to turn in a problem set, slide it under my door or have it put in my office mailbox.
- (3) You will be asked for a codename at the beginning of class. Put this codename on your homework. Do not put your real name or ZID on homework (or you will be penalized).
- (4) Homework must be stapled (or you will be penalized). Homework should have the following format (or you will be penalized):



**ACCESSIBILITY:** Northern Illinois University is committed to providing an accessible educational environment in collaboration with the Disability Resource Center (DRC). Any student requiring an academic accommodation due to a disability should let his or her faculty member know as soon as possible. Students who need academic accommodations based on the impact of a disability will be encouraged to contact the DRC if they have not done so already. The DRC is located on the 4th floor of the Health Services Building, and can be reached at 815-753-1303 (V) or [drc@niu.edu](mailto:drc@niu.edu).

**HONOR CODE:** Be aware of the policies and procedures regarding your rights as well as responsibilities that are published in the NIU Student Code of Conduct, which is available on line at: [http://www.stuaff.niu.edu/judicial/24430jo\(body\).pdf](http://www.stuaff.niu.edu/judicial/24430jo(body).pdf) .

Working with other students on homework is encouraged, but outright copying (plagiarism) of other student's work is strictly forbidden and will be reported to the NIU administration.