

PHYSICS 470: *Experimental Physics*

Spring 2012 [Schedule Rotation](#)

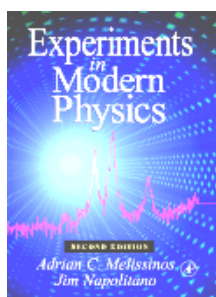
Online Syllabus: www.uwsp.edu/physastr/Documents/kmenning/Physics470.pdf

Instructor:	Dr. Ken Menningen	Office hours:	<u>M</u>	<u>T</u>	<u>W</u>	<u>R</u>	<u>F</u>
Office:	B101 Science Building	9:00am - 10:00am	X	X	X	X	X
Phone:	(715) 346-4871	10:00am - 11:00am		X		X	
email:	Ken.Menningen@uwsp.edu	4:00pm - 5:00pm	X			X	
		By appointment	X	X	X	X	X

Course Prerequisites: Physics 300

Required text: Melissinos and Napolitano, [Experiments in Modern Physics](#) (available at Text Rental)

Other required materials: Scientific calculator (graphing capability is **not** necessary)



Course Objectives: *Experimental Physics* is an opportunity for you to get hands-on experience with advanced laboratory equipment involved in electromagnetism, optics, atomic, nuclear, and solid-state physics. The principle objectives are:

- Manipulate complex equipment to make reliable measurements
- Gain skills in keeping an organized lab notebook
- Practice writing clear scientific reports
- Learn about some interesting physical phenomena

Attendance: Attendance is not required but it is a disadvantage to miss any lectures because the lectures and demonstrations will greatly enhance your understanding of the material. If you are ill and will miss a lab or class period, please contact me **before class** to make arrangements. Late exams are not allowed, but in special cases, and with my permission, you may take an exam early.

Grading policy: The grade you earn in this class will be based upon the five assignment types listed below. A grading scale is also given for your reference. Grades are not curved, encouraging you to work together, but I expect each student to hand in their own work.

Grading Scale		Grade Breakdown	
<u>Letter</u>	<u>Score</u>	<u>Assignment</u>	<u>Weight</u>
A	85-100	Midterm exam	15%
B	74-84	Final exam	20%
C	60-73	Written reports	40%
D	50-59	Oral report	10%
F	0-49	Lab notebook	15%

Exams: A midterm exam is scheduled to occur on **Wednesday, March 14**. This date may change but it's not likely. The final exam is scheduled for **Thursday, May 17 at 12:30 pm**.

Homework: I will hand out pre-lab assignments for some but not all of the experiments. These will not be collected or graded, but I will note whether your lab notebook and written report reflect the fact that you prepared yourself well by doing the relevant reading and pre-lab work.

Written reports: You will prepare two reports as lead author and two reports as secondary author. These reports are to be written in the [American Physical Society \(APS\) Style](#). Your score in this category includes 100 points each for your lead author reports and 25 points each for your secondary author reports.

Oral report: You and your lab partner will make a 10 minute oral presentation that evaluates the results of one of the four experiments that you completed. Each person must speak about 5 minutes in order to get full credit.

Lab notebooks: A key skill of any good scientist is to keep a clear and consistent record of his/her work. You will be expected to keep a reasonably neat and detailed journal of your lab work. It will be turned in for grading twice, once at mid-semester and once at the end.

Course Schedule: For a detailed and up-to-date course schedule, see the [online course schedule](#).

Lab Notebook Grading Rubric

Content	Points
Completeness (Record all relevant background info, experimental procedure, observations, data collected, hand calculations, discussion of any work done in Excel, etc.)	70
Organization (Neat, easy to read, recorded in chronological order, discarded work crossed out with explanation)	30
Total points	100

Written Report Grading Rubric:

Content	Points
Abstract/Introduction (background theory and clear, concise statement of purpose,)	25
Experimental (concise & complete, include diagrams and/or description of apparatus)	20
Results (complete data with correct significant figures and labeled units, show how values were extracted from data and include sample calculations)	20
Discussion (evaluate the uncertainties, compare with known value(s), and state whether hypothesis was supported)	25
Conclusion statement (clear, concise summary of method and results, similar to abstract.)	10
Total points	100

Community Rights & Responsibilities:

Students with special needs should contact the [Office of Disability Services](#) during the first two weeks of the semester in order to request accommodation. An [Exam Accommodation Request Form](#) is available online. Religious beliefs will be accommodated according to UWS 22.03 as long as the student notifies the instructor about the conflict within the first three weeks of class. Students are expected to maintain the highest standards of academic integrity for their work in this course. The University of Wisconsin-Stevens Point dedicated to a safe, supportive and non-discriminatory learning environment. It is the responsibility of all students to familiarize themselves with University policies regarding special accommodations, misconduct, religious beliefs accommodation, discrimination and absence for university sponsored events. (For details please refer to the [Community Rights & Responsibilities](#) documents, including the [Student Academic Standards and Disciplinary Procedures](#) document.)