

Physics 114: Introduction to Experimental Physics

Fall 2009

Th 1:10 - 3:50 PM and Tue 12:05-1:10 PM

Room: CNS 204

Course Organizer: Matthew C. Sullivan
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Office Hours: M,F 11:00 AM-12:00 PM, T 11:00 AM -12:00 PM

Professors: Dan Briotta, CNS 268, briotta@ithaca.edu
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Luke Keller, CNS 264, lkeller@ithaca.edu
Matthew Price, CNS 266, mprice@ithaca.edu
Michael "Bodhi" Rogers, CNS 265, mrogers@ithaca.edu
Matthew C. Sullivan, CNS 262, mcsullivan@ithaca.edu

Course Philosophy

This course is an introduction to modern experimental physics for all beginning physics majors or those considering the major. Students will become acquainted with some modern experimental tools that they will use throughout their career in physics. This course will also serve as an introduction to the Physics Department at Ithaca College, as each professor here will lead a short, hands-on project. Each project will be different according to each faculty member's interests, but all of the projects will have similar aspects, including an emphasis on data-taking as well as data analysis via computers. Almost all modern physics work is collaborative work, so students will be asked to work together in groups.

All students are also expected to attend **at least four** Physics Department seminars. The seminars are held every other Tuesday from 12:05-1:10 PM. In addition to learning physics during your career at Ithaca College, we hope our students will also become adept at speaking about physics. Attending these seminars will help you learn how to speak about physics. Additionally, the seminars are designed to let our students know about the many interesting branches and opportunities in physics.

Homework

Most of the work in this course will be completed during class. However, some outside work will be assigned during the various projects. Each professor will assign and evaluate that homework. There are no exams in this course.

For each seminar you attend, please write three sentences to hand in: 1) A summary of the talk, 2) something interesting, and 3) something you learned.

Attendance

All students are required to attend all classes and the Physics Seminar. **More than two unexcused absences will mean an automatic no pass.** This applied to both class and the Physics seminar. Please speak to one of the professors if you anticipate any difficulties attending class or the seminars.

Grading

This course and the projects in this course are intended to help you begin to think like a physicist. However, how you are thinking is a difficult thing to evaluate! For this reason and other reasons, the grading in this course is **pass/no pass**.

Your performance in the class will be based on two factors: attendance and participation. Again, because most of the work will be completed in class, **attending class is absolutely vital!**

Other notes:

- In compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, reasonable accommodation will be provided to students with documented disabilities on a case-by-case basis. Students must register with the Office of Academic Support Services and provide appropriate documentation to the College before any academic adjustment will be provided.
- I will send out occasional emails to the entire class to their *Ithaca College* email addresses, so you must check them regularly.
- Final grades are FINAL – no work may be handed in for additional credit after the final exam.

Course and Seminar Schedule

Course: You must attend all classes.

Date:	Topic:	Professor:
Aug. 27	Measurements and Error	Luke Keller
Sept. 3	Measurements and Error; Spreadsheets Worksheet	Dan Briotta
Sept. 10	Remote Sensing [†]	Bodhi Rogers
Sept. 17	Remote Sensing [†]	Bodhi Rogers
Sept. 24	Astronomical Viewing at the Ford Observatory [†]	Dan Briotta
Oct. 1	Astronomical Viewing at the Ford Observatory [†]	Dan Briotta
Oct. 8	Spectroscopic Studies	Luke Keller
Oct. 22	Spectroscopic Studies	Luke Keller
Oct. 29	Sustainability and Alternative Energy	Beth Clark Joseph
Nov. 5	No Class	
Nov. 12	Physics Education Research	Matt Price
Nov. 19	Physics Education Research	Andrew Crouse
Dec. 3	Thermal Conductivity	Matthew C. Sullivan
Dec. 10	Thermal Conductivity	Matthew C. Sullivan

[†] These activities require good weather, and may be moved in case of inclement weather.

Seminar: You must attend at least four seminars. Seminars are alternate Tuesdays at 12:05 PM to 1:10 PM.

Date:	Title:	Speaker:
Sept. 1	Planning the Ithaca College Uranidrome: Where are we and where do we want to be	Matthew Price and Nathan Porter, Department of Physics, Ithaca College
Sept. 15	Multidisciplinary Sustainability Modules: Integrating STEM Courses	Jason Hamilton, Department of Biology, Ithaca College
Sept. 29	Robotic Telescopes, Hubble's Constant, The Oosterhoff Dichotomy and the Island of Magic	Shashi Kanbur, Department of Physics, SUNY Oswego
Oct. 13	Sustainability Today	Dave Strong, Sustainable Energy Development
Oct. 27	Summer Student Research Talks	Judith Olson, Sarah Burlison, Arnold Kotlyarevsky
Nov. 10	Summer Student Research Talks: REU Experiences	Adam Iazzi, Jill Neeley
Dec. 1	Summer Student Research Talks	Katy Kwasny and students from the Room-Temperature Astrophysics Lab