Modern Physics Lab

PH 255 Section 002

Spring 2014, Laboratory

Dr. Jerome Busenitz

Prerequisites

UA Course Catalog Prerequisites

Prerequisite(s) with concurrency: PH 253.

Course Description

UA Course Catalog Information

Experimental work in the topics that form the subject matter of PH 253.

Core Designations:
Natural Science

In this course you will perform experiments to observe firsthand some of the phenomena which comprise the empirical basis of what we call Modern Physics and to measure fundamental physical constants. In the process, you will also improve your skills in carrying out physical measurements, quantitatively analyzing data, interpreting experimental results, writing reports, and working in a team.

Required Texts

UA Supply Store Textbook Information

NONE / NO TEXT REQUIRED (Required)

There are no required texts for this course. Lecture notes, laboratory manual, experiment write-ups, and other course materials will be posted to the course web (Blackboard) site.

Student Learning Outcomes

1. Firsthand observation of physical phenomena which are at odds with the notions of so-called classical physics and are at the same time readily explainable in terms of the basic postulates of quantum physics and special relativity.
2. Acquaintance with basic principles of experiment design.
3. Laboratory tools and apparati: Skill in correct and valid use; familiarity with principles of operation; methods of calibration; ability to quantitatively estimate the accuracy of measurement results based on intrinsic limitations and methods of use.
4. Development of advanced skills in critically evaluating the integrity of experimental data and drawing valid and quantitative conclusions from the data; familiarity with the standard techniques of estimating and propagating uncertainties.
5. Understanding of the scientific method.
6. Demonstrated ability to write clear and succinct laboratory reports in a variety of formats.
7. Improved skill and greater experience on the use of teamwork in carrying out technically challenging tasks.

Emergency Contact Information
UA's primary communication tool for sending out information is through its web site at www.ua.edu. In the event of an emergency, students should consult this site for further directions. Additional course information will be posted using Blackboard Learn.

Severe Weather Guidelines

The guiding principle at The University of Alabama is to promote the personal safety of our students, faculty and staff during severe weather events. It is impossible to develop policies which anticipate every weather-related emergency. These guidelines are intended to provide additional assistance for responding to severe weather on campus.

UA is a residential campus with many students living on or near campus. In general classes will remain in session until the National Weather Service issues safety warnings for the city of Tuscaloosa. Clearly, some students and faculty commute from adjacent counties. These counties may experience weather related problems not encountered in Tuscaloosa. Individuals should follow the advice of the National Weather Service for that area taking the necessary precautions to ensure personal safety. Whenever the National Weather Service and the Emergency Management Agency issue a warning, people in the path of the storm (tornado or severe thunderstorm) should take immediate life saving actions.

When West Alabama is under a severe weather advisory, conditions can change rapidly. It is imperative to get to where you can receive information from the National Weather Service and to follow the instructions provided. Personal safety should dictate the actions that faculty, staff and students take.

The Office of University Relations will disseminate the latest information regarding conditions on campus in the following ways:

- Weather advisory posted on the UA homepage
- Weather advisory sent out through UA Alerts to faculty, staff and students
- Weather advisory broadcast over WVUA at 90.7 FM
- Weather advisory broadcast over Alabama Public Radio (WUAL) at 91.5 FM
- Weather advisory broadcast over WVUA-TV/WUOA-TV, and on the website at http://wvuatv.com/content/weather. WVUA-TV Home Team Weather provides a free service you can subscribe to which allows you to receive weather warnings for Tuscaloosa via e-mail or cell phone. Check http://wvuatv.com/content/free-email-weather-alerts for more details and to sign up for weather alerts.

In the case of a tornado warning (tornado has been sighted or detected by radar; sirens activated), all university activities are automatically suspended, including all classes and laboratories. If you are in a building, please move immediately to the lowest level and toward the center of the building away from windows (interior classrooms, offices, or corridors) and remain there until the tornado warning has expired. Classes in session when the tornado warning is issued can resume immediately after the warning has expired at the discretion of the instructor. Classes that have not yet begun will resume 30 minutes after the tornado warning has expired provided at least half of the class period remains.
Disability Statement

If you are registered with the Office of Disability Services, please make an appointment with me as soon as possible to discuss any course accommodations that may be necessary.

If you have a disability, but have not contacted the Office of Disability Services, please call (205) 348-4285 (Voice) or (205) 348-3081 (TTY) or visit 133-B Martha Parham Hall East to register for services. Students who may need course adaptations because of a disability are welcome to make an appointment to see me during office hours. Students with disabilities must be registered with the Office of Disability Services, 133-B Martha Parham Hall East, before receiving academic adjustments.

Policy on Academic Misconduct

All students in attendance at The University of Alabama are expected to be honorable and to observe standards of conduct appropriate to a community of scholars. The University of Alabama expects from its students a higher standard of conduct than the minimum required to avoid discipline. At the beginning of each semester and on examinations and projects, the professor, department, or division may require that each student sign the following Academic Honor Pledge: “I promise or affirm that I will not at any time be involved with cheating, plagiarism, fabrication, or misrepresentation while enrolled as a student at The University of Alabama. I have read the Academic Honor Code, which explains disciplinary procedure resulting from the aforementioned. I understand that violation of this code will result in penalties as severe as indefinite suspension from the University.”

See the Code of Student Conduct for more information.