

DEPARTMENT OF PHYSICS AND ASTRONOMY, UNIVERSITY OF NEW MEXICO

Physics 307L – Junior Laboratory

Spring 2020

**Instructor:** Prof. Darcy Barron  
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Office: PAIS 3216  
Office Hours: by appointment

**Teaching Assistants:**  
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**Course Description:** Experiments in modern physics and experimental methods.

**Prerequisites:** Physics 2415 (computational physics).  
Completion of Physics 330 is highly recommended.

**Course Goals**

In this course, you will:

- apply the theory you have learned in the real (experimental) world
- learn how to use various types of hardware, instrumentation, and software
- learn basic statistics, error analysis, and determination of statistical and systematic errors
- perform the best possible (i.e. the most precise and accurate) experiment within the constraints of the available resources (equipment, time, etc.) - just like in real research!

**Textbooks:** none

**Course Materials:** laboratory composition notebook

<b>Course Schedule:</b>	Lectures:	M	1:00PM-1:50PM	PAIS 1405
	Section 1:	M	2:00PM-4:50PM	PAIS 1405
	Section 2:	Tu	8:00AM-10:50AM	PAIS 1405

**Grading Policy:**

In-Class Participation and Performance	25%
Lab Notebook	25%
Formal Reports and Presentations	50%

This is a three credit-hour course, which meets for one hour of lecture and 3 hours of laboratory session. Students are expected to complete a *minimum* of six hours of out-of-class work (including lab preparation and writing lab reports) each week.

**Grade Cutoffs:** A+ (>97.99%), A (>92.99%), A- (>89.99%), B+ (>87.99%), B (>82.99%), B- (>79.99%), C+ (>77.99%), C (>72.99%), C- (>69.99%), D (>59.99%), F (≤59.99%). These are the maximum possible cutoffs.

**Quiet Classroom and Classroom Etiquette Policy:** Please be respectful of both the instructor and your fellow students. Avoid causing any distractions that could disrupt the ability of another student to pay attention and learn in class. All electronic devices should be muted, silenced, or turned off before class begins. Please refrain from using any electronic devices in class (laptops, tablets, phones, etc.) unless you are using them to take notes **ONLY**. Do not talk during class while I am talking. If you are holding a conversation and disrupting the class, I will ask you to stop and make note of the disruption. I reserve the right to drop repeated offenders (3+ incidents) from the course.

**Students with Disabilities:** Students requesting accommodations for this course due to a disability must go through Accessibility Services (Mesa Vista Hall 2021, 505-277-3506).

**Academic Integrity:** From the UNM Handbook: “Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or otherwise fails to meet the standards. Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course.

Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.”

**Title IX:** In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered “responsible employees” by the Department of Education (see pg 15 - <http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf>). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). For more information on the campus policy regarding sexual misconduct, see: <https://policy.unm.edu/university-policies/2000/2740.html>.