



School of Natural Sciences and Mathematics

Physics

UNIVERSITY PHYSICS I LAB

Credits: 4 | Section: PHY-251L, 01 or 02 | Term: Fall 2026

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Instructor Information

Instructor	Matthew Cochran
Email	matthew.cochran@chaminade.edu
Phone	(808) 739-7403
Office Location	Henry 123A
Office Hours	MWF from 11:30 to 12:20 or upon request.
Virtual Office	Zoom or Teams
Virtual Office Hours	TBA

Communication

I respond to emails within 24 hours. I'm typically on campus from early morning to midday or later, so feel free to catch me in person during this time.

School & Department

School	School of Natural Sciences and Mathematics
Location	Wesselkamper 115
Phone	(808) 440-4204
Questions?	Contact your instructor or the School of Natural Sciences and Mathematics

Course Description & Materials

Catalog Description

PHY-251L University Physics I Laboratory (1)

An introduction to laboratory techniques and experiments that illustrate basic physics principles. Students apply the scientific method in collecting and analyzing data. Topics include classical mechanics, fluid dynamics, and thermodynamics.

Course Snapshot

Modality	Face-to-Face
Meeting Location	Henry Lab 10
Meeting Days / Times	Wednesday Section (2:30 to 5:20) Thursday Section (2:30 to 5:20)
Time Allocation	This is a one-credit hour course requiring 45 clock hours of student engagement, per the official CUH Credit Hour Policy. Weekly: 3 hours seat × 15 weeks = 45 hours
Required Materials	None. Handouts will be provided.
Recommended Items	Scientific calculator.
Canvas	Course materials, announcements, and grades are posted to Canvas (chaminade.instructure.com).

Learning Outcomes

Program Learning Outcomes (PLOs)

Upon completion of a minor in physics, the student will be able to:

1. Apply quantitative reasoning and appropriate mathematics to describe phenomena in the natural world.
2. Interpret multiple scientific representations, including verbal descriptions, diagrams, graphs, formulas, and translate between them.
3. Apply physics principles to understand living systems, scientific instrumentation, and everyday experiences.

Course Learning Outcomes (CLOs)

Upon completion of University Physics I Lab, the student will be able to:

1. Measure physical quantities such as distance, time, and force using basic scientific instruments.
2. Estimate uncertainties and a knowledge of statistical analysis.
3. Present results graphically.
4. Measure physical quantities using a computer.
5. Analyze results using a computer.

Marianist Values

An education in the Marianist Tradition is marked by five principles:

1. Education for formation in faith.
2. Provide an integral, quality education.
3. Educate in family spirit.
4. Educate for service, justice and peace, and integrity of creation.
5. Educate for adaptation and change.

In physics, we value all five principles. We provide a quality education that will help students adapt to a world that is sure to change.

Native Hawaiian Values

Education is central to both Marianist and Native Hawaiian culture — both seek transformative, value-centered learning that serves the marginalized. This is reflected in the 'Ōlelo No'eau (Hawaiian proverbs) below:

1. Educate for Formation in Faith (Mana): E ola au i ke akua ('Ōlelo No'eau 364) — May I live by God.
2. Provide an Integral, Quality Education (Na'auao): Lawe i ka ma'alea a kū'ono'ono ('Ōlelo No'eau 1957) — Acquire skill and make it deep.
3. Educate in Family Spirit ('Ohana): 'Ike aku, 'ike mai, kōkua aku kōkua mai ('Ōlelo No'eau 1200) — Recognize others, be recognized, help others, be helped.
4. Educate for Service, Justice and Peace (Aloha): Ka lama kū o ka no'eau ('Ōlelo No'eau 1430) — Education is the standing torch of wisdom.
5. Educate for Adaptation and Change (Aina): 'A'ohe pau ka 'ike i ka hālau ho'okahi ('Ōlelo No'eau 203) — All knowledge is not taught in the same school.

Alignment of Course Learning Outcomes

	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5
Marianist Values	X	X	X	X	X
Program Learning Outcomes	X	X	X	X	X
Native Hawaiian Values	X	X	X	X	X
General Education	X	X	X	X	X

Attendance & In-Class Participation

Attendance Policy

Regular attendance is expected of all students.

Excused Absence	Illness with documentation, family emergency, University activity
Unexcused Absence	Any absence not pre-approved or documented
Course Failure	More than two unexcused absences — student may receive a failing grade

In-Class Expectations

Active, respectful engagement is essential. Students are expected to come prepared and contribute meaningfully to discussions, activities, and collaborative work.

Students are expected to:

- Come prepared — complete readings and activities before each session.
- Participate actively in discussions and group work, demonstrating critical thinking.
- Engage respectfully and honor diverse perspectives.
- Use personal devices for course purposes only unless otherwise directed.
- Submit work by established deadlines to support course pacing.

Course Activities

In-Class Activities	You will work with partners in class. It is important that partners engage in discussion of their work and avoid working as isolated individuals.
Homework / Assignments	Each student is expected to attend every lab. Arrive on time. Make-up labs will only be given under extenuating circumstances beyond the student's control. If you know in advance of an absence, inform the instructor as soon as possible.
Quizzes / Exams	A short quiz will be given at the beginning of most labs. The quiz will test your understanding of the most recent lab. You may use your lab report while taking the quiz. No make-up quizzes will be given.
Projects	There will be no projects.

Course Policies

Late Work	All labs must be completed in the physics lab with appropriate equipment. Each student is expected to attend every lab.
Make-Up Work	Make-up labs or quizzes will only be given under extenuating circumstances beyond the student's control. If you know in advance of an absence, inform the instructor as soon as possible.
Extra Credit	No extra credit is planned at this time.
Incomplete Grade	Incomplete grades will be given in accordance with college regulations as outlined in the college catalog.
Syllabus Changes	The instructor reserves the right to modify the syllabus. Changes will be announced in class and posted to Canvas.

Final Grades

Grade	Range
A	90% and above
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	59% and below

Academic Honesty Statement

Academic honesty is an essential aspect of all learning, scholarship, and research. It is one of the values regarded most highly by academic communities throughout the world. Violations of the principle of academic honesty are extremely serious and will not be tolerated.

Students are responsible for promoting academic honesty at Chaminade by not participating in any act of dishonesty and by reporting any incidence of academic dishonesty to an instructor or to a University official. Academic dishonesty may include theft of records or examinations, alteration of grades, plagiarism, **and unauthorized and/or undisclosed AI usage**, in addition to more obvious dishonesty. See catalog section *Student Use of Artificial Intelligence in Academic Work* for further information.

Questions of academic dishonesty in a particular class are first reviewed by the instructor, who must make a report with recommendations to the Director of Academic College. Punishment for academic dishonesty will be determined by the instructor, Director, and the Dean of Academic College and may include an “F” grade for the work in question, an “F” grade for the course, academic notice, or dismissal from the University.

Artificial Intelligence (AI) Statement

Chaminade University recognizes the increasing role of artificial intelligence (AI) technologies in academic and professional environments. AI encompasses, but is not limited to, generative AI platforms, automated writing or content generation software, coding assistants, and similar tools. Students must ensure all submitted work genuinely reflects their knowledge and effort. Using AI to produce or significantly complete graded assignments, exams or other academic tasks – defined as use that substitutes for or substantially replaces a student’s own analysis, reasoning or written expression – without explicit instructor approval is considered academic misconduct and will be dealt with according to the University’s Academic Honesty Policy.

If an instructor has reasonable grounds to question whether submitted work genuinely reflects a student’s own knowledge, authorship, or mastery of course material — or whether it meets the course’s expectations for AI use — the instructor may require the student to provide additional or alternative evidence of authorship and content mastery. Such evidence may include drafts, notes, revision history, source materials, process explanations, oral discussion, in-class work, or completion of an alternative assessment. A student’s refusal or inability to provide such evidence may be considered, along with other available information, in evaluating whether the work meets course requirements and stated learning outcomes. Instructors will not rely solely on AI detection software or other automated tools in making grading or academic integrity determinations. Such determinations will be based on the totality of the available information and handled in accordance with applicable University policies and procedures. See the catalog section *Student Use of Artificial Intelligence in Academic Work* for further information.

Nondiscrimination and Title IX

Chaminade University is committed to providing a learning, working, and living environment that promotes the dignity of all people, inclusivity, and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking. As a member of the University faculty, I am required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator. For pregnant and parenting students, I am also obligated to provide you with similar resources for support and protections available to you. My goal is to make sure that you are aware of the range of options available to you and have access to the resources and support you need.

Contact information and reporting options: chaminade.edu/titleix/nondiscrimination/. File a report via the [Campus Incident Report Form](#).

Nondiscrimination Policy

Chaminade University is committed to complying with all State and Federal statutes, rules, and regulations which prohibit discrimination. The University is committed to a policy of nondiscrimination on the basis of race, sex, gender identity and expression, age, religion, color, national origin (including shared ancestry and ethnic characteristics), ancestry, citizenship, disability, genetic information, marital status, breastfeeding, arrest and court record (except as permissible under State law), sexual orientation, or status as a covered veteran. Inquiries about Title IX or general Civil Rights concerns may be referred to the University's Title IX Coordinator, the U.S. Department of Education's Office for Civil Rights, or both and contact information may be found [HERE](#). *On-campus Confidential Resources may also be found here at [CAMPUS CONFIDENTIAL RESOURCES](#)*. The University's Nondiscrimination Policy and Grievance Procedures can be located on the University webpage at: <https://chaminade.edu/compliance/title-ix-nondiscrimination-policies-procedures/>.

To report information about conduct that may constitute sex discrimination or make a complaint of sex discrimination under Title IX, please refer to the [Campus Incident Report form](#). Chaminade University prohibits sex discrimination in any education program or activity that it operates. The NOTICE of NONDISCRIMINATION can be found here: [Notice of Nondiscrimination](#).

Disabilities Statement

Accessibility Services recognizes disability as a valued aspect of diversity and ensures equal access to the educational environment in accordance with Section 504 of the Rehabilitation Act; the Americans with Disabilities Act, as amended; and the principles and professional standards of the Association on Higher Education and Disability.

Access is supported through reasonable accommodations and referrals to campus and community resources. Appointments with the Accessibility Services Coordinator are available through Stellic at <https://chaminade.stellic.com> and may be held virtually or in person. Drop-in appointments are also welcome.

Students seeking support must meet with the Accessibility Services Coordinator as early as possible, even if they are unsure whether they have appropriate documentation of their disability or its impacts. The Accessibility Services Coordinator prioritizes listening to student experiences and will discuss any documentation needs during the initial intake meeting. Students may seek support at any time. Learn more at <https://chaminade.edu/ada-accommodations>.

Assessment of Student Work

Chaminade University may use student work anonymously to assess achievement of course, program, and institutional learning outcomes as part of ongoing quality improvement efforts.

Campus Resources & Support Services

The following resources are available to all Chaminade students. Reach out early — these services exist to support your success.

Resource	Description	Contact / Website
Accessibility Services (Kōkua 'Ike)	Accommodations under Section 504 and ADA. Contact early — appointments via Stellic, virtual or in person.	ada@chaminade.edu chaminade.edu/ada-accommodations
Tutoring & Academic Coaching (Kōkua 'Ike)	Tutoring and Academic Coaching Services support students' progression toward their academic, personal, and professional goals with clarity and intention. Services include individualized support in english, math, nursing, sciences, and social sciences, as well as guidance in developing goals and study strategies.	chaminade.edu/tutoring-academic-coaching-services
Career Services	Career Services support students throughout their career journeys. Services include individualized job search strategy coaching, resume reviews, job interview coaching, and access to career-related resources and opportunities.	chaminade.edu/career-services
Basic Needs Resources	Support for food insecurity, housing instability, and other basic needs.	chaminade.edu/basic-needs/
Title IX / Nondiscrimination	Reporting and support for sex discrimination and gender-based violence. Campus Incident Report Form available online.	chaminade.edu/titleix/resources-and-support/
Hazing Prevention	Confidential support, crisis intervention, and reporting for any type of abuse including hazing.	hazingpreventionnetwork.org/athlete-helpline/
Campus Safety / SafeSwords	Security escort service for anyone who feels unsafe walking alone on campus at any time of day. Call security and a professional will escort you to your destination.	chaminade.edu/student-life/security/campus-safeswords-program/
CUH Alert Emergency Notification	Emergency text system. Register your cell number via the Chaminade portal and confirm the text to complete enrollment.	chaminade.edu

Weekly Course Schedule

The instructor reserves the right to modify this schedule. Changes will be announced in class and posted to Canvas.

Week	Dates	Lab
1	Aug 19, Aug 20	Units and Significant Figures
2	Aug 26, Aug 27	Representations of Motion
3	Sep 02, Sep 03	Motion of a Ball
4	Sep 09, Sep 10	Projectile Motion I
5	Sep 16, Sep 17	Projectile Motion II
6	Sep 23, Sep 24	Statics
7	Sep 30, Oct 01	Friction
8	Oct 07, Oct 08	Cart Dynamics
9	Oct 21, Oct 22	Hook's Law
10	Oct 28, Oct 29	Energy and Power
11	Nov 04, Nov 05	Impulse and Momentum
12	Nov 11, Nov 12	Veteran's Day – No Lab
13	Nov 18, Nov 19	Rotational Statics
14	Nov 25, Nov 26	Thanksgiving – No Lab
15	Dec 02, Dec 03	Buoyancy