PHYS 151L COLLEGE PHYSICS I LAB
1 credit (60025)
Online only

INSTRUCTOR: Joseph Ciotti
OFFICE: ‘Imiloa 134
OFFICE HOURS: posted on office door
TELEPHONE: 236-9111
EMAIL: ciotti@hawaii.edu
EFFECTIVE DATE: Fall 2021

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai‘i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O‘ahu’s Koʻolau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

CATALOG DESCRIPTION

Experiments in statics, mechanics, energy, waves, and friction

PREREQUISITES: Credit or concurrent registration in PHYS 151.

Additional Activities Required Other Than Labs/Quiz: none

STUDENT LEARNING OUTCOMES

Upon successful completion of the course, the student will be able to:

1. Apply the scientific method to physical science systems involving mechanics, energy, simple oscillatory systems, gas laws and fluid dynamics
2. Collect, report and analyze data obtained in a laboratory setting in a manner exhibiting organization, proper documentation and critical thinking.
3. Manipulate data and apply quantitative techniques, such as graphing and statistical analysis.
4. Demonstrate a basic understanding of the standard instruments used in physics.
5. Identify environmental factors, which affect the outcome of an experiment or observation and apply basic error analyses techniques.
COURSE OVERVIEW

A. Goal of the Course

The primary goal of this basic physics laboratory course is to provide the student with an in-depth feeling for the scientific method through the use of physical investigations. Although many of the hypotheses which will be considered have previously been accepted as laws via numerous experimental approaches, the purpose here will be to carry out independent experiments whose results may possibly be used to evaluate and/or verify existing contemporary scientific facts, theories and/or laws.

B. Instructional Materials

- **Online format:** Laboratory handouts will be made available for download online website.

The use of a scientific calculator is strongly recommended.

C. Mode of Instruction

- Course internet link will be provided for all applicable lecture videos, handouts and quizzes.

ASSESSMENT TASKS AND GRADING

Method of Evaluation

Evaluation of the successful completion of the objectives of this course will be determined by grades received on the following evaluative instruments:

- **Lab Quiz:** There will be one (1) lab quiz worth 20 points in week 4 which will test students on graphing, significant figure and measurement techniques. This quiz will be emailed to the student. The student must emailed the completed quiz back to the instructor by 6 pm on the Quiz date. Late quiz is not accepted and will receive a grade of zero.

- **Laboratory Reports:** Lab reports are completed according to the instructions given on the handouts distributed on the website. Ordinarily, the report consists of a completed data and analysis sheet provided in the handout plus any other appropriate sheet of observed data and graphical analysis. Graphical analysis can be computed using computer software like Excel.

Lab Reports are worth 10 points each. The lowest two (2) lab scores will be dropped.

**Online Labs:** completed reports are emailed to the instructor. They are due by 6 pm on the Tuesday following that lab (see syllabus for due dates). A penalty for a late lab report will be five (5) points per day the report is late; thus, on the second day, a zero will be assigned to the lab. Under extraordinary circumstances, this penalty may be waived by the instructor.
Grading System

Each letter grade and its respective level of achievement is provided in the following table:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>90% - 100% of cumulative points possible (excellent achievement)</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89% of cumulative points possible (above average achievement)</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79% of cumulative points possible (average achievement)</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69% of cumulative points possible (minimal passing achievement)</td>
</tr>
<tr>
<td>F</td>
<td>below 60% of cumulative points possible (less than minimal passing achievement)</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete: This is a temporary grade given at the instructor's option when a student has failed to complete a small part of a course because of circumstances beyond the student's control. The student is expected to complete the course by the designated deadline in the succeeding semester. If this is not done, the “I” will revert to the contingency grade identified by the instructor.</td>
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</table>

Credit/No Credit Option

Note: Refer to the current Schedule of Classes for CR/NC declaration deadlines. This grading option is not available in all courses and will not be offered to majors in required courses.

<table>
<thead>
<tr>
<th>Credit/No Credit</th>
<th>Definition</th>
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<tbody>
<tr>
<td>CR</td>
<td>Achievement of objectives of course at the C level or higher. (course credit awarded)</td>
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<tr>
<td>NC</td>
<td>Used to denote achievement of objectives of the course at less than C level under CR/NC option. (no course credits awarded)</td>
</tr>
<tr>
<td>N</td>
<td>The “N” grade, which is issued at the instructor’s option, indicates that the student has worked conscientiously, attended regularly, finished all work, fulfilled course responsibilities, and has made measurable progress. However, either the student has not achieved the minimal student learning objectives and is not yet prepared to succeed at the next level, or the student has made consistent progress in the class but is unable to complete the class due to extenuating circumstances, such as major health, personal or family emergencies, (no course credits awarded)</td>
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<tr>
<td>W</td>
<td>Official withdrawal from the course course. See the Schedule of Classes for information regarding current semester deadlines. If a student officially withdraws within the erase period, the record of registration will not appear on the student’s transcript. (no course credits awarded)</td>
</tr>
<tr>
<td>L</td>
<td>Audited Course (no course credits awarded)</td>
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LEARNING RESOURCES

Textbook: All laboratory experiments will be described in handouts distributed throughout the course.

Required Materials:
• scientific calculator
• graph paper
• metric ruler
• notebook

Recommended Materials:
• calculator or computer
• graphical software like Excel

Additional Information Instructor expectations

1. Make-up labs are **not** permitted.

2. The student is responsible for keeping abreast with any changes in syllabus, which are announced in class.

3. A student can determine his/her current grade at any time during the semester by dividing his/her cumulative score by the cumulative points possible and converting into a percentage and referring to the table of Letter Grades.

4. Any student wishing to be informed of his/her semester grade in advance of the official report of grades should email a request for the grades to the instructor immediately after the last day of instruction. The student may also provide the instructor a stamped, self-addressed postcard or envelope on the last day of instruction with an enclosed note requesting the grades.
DISABILITIES ACCOMMODATIONS

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Accessibility Counselor to discuss reasonable accommodations that will help you succeed in this class. Roy Inouye can be reached at (808) 235-7448, roynouy@hawaii.edu, or you may stop by Hale Kākoʻo 106 for more information.

SEX DISCRIMINATION AND GENDER-BASED VIOLENCE RESOURCES (TITLE IX)

Windward Community College is committed to providing a learning, working, and living environment that promotes personal integrity, civility, 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.

If you or someone you know is experiencing any of these, WCC has staff and resources to support and assist you. To report an incident of sex discrimination or gender-based violence, as well as receive information and support, please contact one of the following:

Madoka (Doka) Kumagai, Confidential Advocate
Phone: (808) 348-0663 (cellular)
Phone: (808) 956-6084 (office)
Email: kumagaim@hawaii.edu

Desrae Kahale, Mental Health Counselor & Confidential Resource
Phone: (808) 235-7393
Email: dkahale3@hawaii.edu
Office: Hale Kākoʻo 101

Karla K. Silva-Park, Title IX Coordinator
Phone: (808) 235-7468
Email: karlas@hawaii.edu
Office: Hale ʻĀkoakoa 220

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. Although the Title IX Coordinator and I cannot guarantee confidentiality, you will still have options about how your case will be handled. My goal is to make sure you are aware of the range of options available to you and have access to the resources and support you need.

For more information regarding sex discrimination and gender-based violence, the University’s Title IX resources and the University’s Policy, Interim EP 1.204, go to manoa.hawaii.edu/titleix/

ALTERNATE CONTACT INFORMATION

- Location: Alakaʻi 121
- Phone: (808) 235-7422
<table>
<thead>
<tr>
<th>Date</th>
<th>Lab Topic</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>AUG 24</td>
<td>Lab 1: Significant Figures</td>
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<tr>
<td>SEP 31</td>
<td>Lab 2: Measurements &amp; Significant Figures</td>
<td><strong>DUE: Lab 1</strong> (email by 6 pm)</td>
</tr>
<tr>
<td>SEP  7</td>
<td>Lab 3: Error Analysis &amp; Graphing</td>
<td><strong>DUE: Lab 2</strong> (email by 6 pm)</td>
</tr>
<tr>
<td>SEP 14</td>
<td>Lab Quiz</td>
<td><strong>DUE: Lab 3</strong> (email by 6 pm)</td>
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<td>SEP 21</td>
<td>Lab 4: Hooke’s Law</td>
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<td>OCT 28</td>
<td>Lab 5: Pendulum (Controlled Experimentation)</td>
<td><strong>DUE: Lab 4</strong> (email by 6 pm)</td>
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<tr>
<td>OCT  5</td>
<td>Lab 6: Acceleration</td>
<td><strong>DUE: Lab 5</strong> (email by 6 pm)</td>
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<tr>
<td>OCT 12</td>
<td>Lab 7: Vector Analysis with Force Table</td>
<td><strong>DUE: Lab 6</strong> (email by 6 pm)</td>
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### TUESDAY

| OCT  | 19 | **No Lab (Mid-Term for Lecture)**  
**DUE: Lab 7**  
(email by 6 pm) |
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<tbody>
<tr>
<td>26</td>
<td></td>
<td><strong>Lab 8: Inertial Mass</strong></td>
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</tbody>
</table>
| 2    |  | **Lab 9: Conservation of Energy**  
**DUE: Lab 8**  
(email by 6 pm) |
| NOV  | 11 | **Lab 10: Inelastic Collisions**  
**DUE: Lab 9**  
(email by 6 pm) |
| 16   |  | **Lab 11: Energy Transfer for Elastic Collisions**  
**DUE: Lab 10**  
(email by 6 pm) |
| 23   |  | **Lab 12: Uniform Circular Motion**  
**DUE: Lab 11**  
(email by 6 pm) |
| 30   |  | **Lab 13: Torque and Moment of Inertia**  
**DUE: Lab 12**  
(email by 6 pm) |
| DEC  | 7  | **No Lab (prep for Final Exam for lecture students only)**  
**DUE: Lab 13**  
(email by 6 pm) |

**FINAL EXAM: None**