62071 Physics 152
3 Credits
T, Th; 1:00 to 2:15 pm

INSTRUCTOR:	**Dr. Jacob Hudson**
OFFICE:	**Hale Imiloa Rm. 130**
OFFICE HOURS:	**M, W; 1:00 pm to 5:00 pm**
TELEPHONE:	X9112
EFFECTIVE DATE:	Jan 8 to May 11, 2018

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College is committed to excellence in the liberal arts and career development; we support and challenge individuals to develop skills, fulfill their potential, enrich their lives, and become contributing, culturally aware members of our community.

CATALOG DESCRIPTION

A non-calculus one semester course for the professional or non-engineering majors. Study of the basic concepts of physics, including the fundamental principles and theories in electricity, magnetism, optics, and modern physics.

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:

- Demonstrate a general understanding of the underlying philosophy of physics, including the scientific method.
- Apply the basic concepts of physics, including thermodynamics, static and dynamic laws of electricity and magnetism, circuit analysis, electromagnetic radiation, optical systems, and the fundamentals of atomic and nuclear physics.

COURSE PHILOSOPHY

Physics is an interesting and challenging subject. It is also the basic science, the foundation of all other physical sciences. Physics attempts to describe the fundamental nature of the Universe and how it works, striving for the simplest explanations common to its diverse behavior. For example, physics explains why the sky is blue, why rainbows have color, what keeps a satellite in orbit, and what atoms and nuclei are made of. In a rapidly changing environment the key to success is adaptability. There is no other field of study available which offers the student greater flexibility in this high tech society of ours. Whether the student is contemplating a career as a scientist, an engineer, a teacher,

a physician, a lawyer, or a business person, one can get no better grounding in fundamental, logical and critical thinking then is possible in physics.

ASSESSMENT TASKS AND GRADING

Grading: Student assessment will be determined from class participation (~4%), homework (~40%), midterms (~36%) and the Final (~20%). All students are required to take the Final exam in May.

Class Participation – In addition to the class lecture, students are to take part in the problem solving that will be emphasized each class.

Homework – A homework assignment will be given each class. The assignment is due at the beginning of the next class period. No *Late* assignments will be collected.

Exams – There are three midterm exams, each yielding approximately 12% of the overall point total of the semester grade. The final exam is at the scheduled time, and is worth approximately 20% of the overall point total of the semester grade.

LEARNING RESOURCES

Text: College Physics (7th Ed); J. D. Wilson, A. J. Buffa, B. Lou

In addition to the above mentioned text, students will need a straight edged protractor, and a 'non-QWERTY' type calculator. A graphing calculator (such as a TI-85) is highly recommended.

Additional Information (tentative schedule)

Week	Subject	Chap.
I	Vibrations and Waves	13
	Standing Waves and Resonance	13
II	Sound	14
	Doppler Effect	14
III	Electric Charge	15
	Electric Fields	15
IV	Electric Potential	16
2/8	EXAM I	
V	Electric Potential Energy	16
	Capacitance	16
VI	Electric Current	17
	Resistance	17

VII	Basic Circuits: Series	18
	Basic Circuits: Parallel	18
VIII	RC Circuit	18

3/8 EXAM II

IX	Magnetic Fields	19
	Magnetic Forces and Current	19
X	Electromagnetic Induction	20
	Transformers and Oscillators	20
XI	Electromagnetic Waves	20
	Reflection	22

4/12 EXAM III

XII	Refraction	22
	Mirrors	23
XIII	Lenses	23
	Wave Nature of Light	24
XIV	Diffraction	24
	Polarization	24
XV	Modern Physics	

5/8 (1:00 pm to 3:00 pm) FINAL EXAM

DISABILITIES ACCOMMODATION STATEMENT

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 Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale ʻAkoakoa 213 for more information.