

SCI 295V
Various Credits
Hours TBA

INSTRUCTOR: Dr. Jacob Hudson
OFFICE: Hale Imiloa Rm. 112
OFFICE HOURS: M, T, W, Th; 4:30 pm to 5:30 pm
TELEPHONE: X9112
EFFECTIVE DATE: July 3, 2018, CRN 63069

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

This is a project-based learning environment that emphasizes Science, Technology, Engineering and Mathematics. By practical application, time management techniques, and project planning strategies will be implemented. Specific design challenges for an operational test of success must be met.

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:

1. Collect, report and analyze data obtained in a laboratory setting in a manner exhibiting organization, proper documentation and critical thinking.
2. Demonstrate a basic understanding of the standard instruments used in science and engineering.
3. Identify environmental factors, which affect the outcome of an experiment or observation and apply basic error analyses techniques.

COURSE PHILOSOPHY

This class emphasizes science, technology, engineering and mathematics by providing a project based learning opportunity, culminating in a quantitative test to determine a successful outcome. In a rapidly changing environment the key to success is adaptability especially in the development of technology. There are no other fields of study available that offer the students greater flexibility in this high tech society of ours than those pursuing science, engineering, and mathematics. 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 than is possible in the STEM pursuits.

ASSESSMENT TASKS AND GRADING

Grading – This is a variable credit course, and as such, the grade and level of involvement will depend on the number of credits being pursued:

- 1 credit - Completion of the project (50%), Notebook (25%), a 1 to 2 page Report (15%) and successful testing of the project (10%).
- 2 credit – Completion of the project (40%), Notebook (25%), a 3 to 8 page Report (20%) and successful testing of the project (15%).
- 3 credit – Completion of the project (25%), Notebook (25%), a 10 + page Report (25%) and successful testing of the project (25%).

Participation - This course is emphasizing hands-on project learning. As such, attendance is an essential element to an assessment; attendance at all classes, at the scheduled time is necessary. Although there is no percentage assigned for this category, it has a significant impact on the completion of the project, and upkeep of the notebook.

Notebook – Students will be keeping a notebook of all the experimental work they will be doing. The notebook is expected to be well organized, in the students own words, showing all thoughts and measurements that were pertinent to the project, their encountered problems and attempted solutions.

Report – A report is to be a complete entity in itself. The report should have, *in your own words*, a description of their part in the overall completion of the project. Detailed descriptions of the problems encountered and their solutions to those problems, as well as a reflection on their overall learning experience is to be included.

LEARNING RESOURCES

There are no required texts for this course, however, there is some necessary equipment that the student will need; a laptop, and a notebook (quadrille or composition is acceptable, any notebook where the pages are fixed and cannot be removed – no loose leaf). If the student opts to keep their notebook as a blog (binary log), then a thumb drive that will contain the blog, must be submitted at the project's completion. A graphing calculator (such as a TI-85) is highly recommended.

Additional Information

Although this is not required, it is helpful if the student were to obtain a Microcontroller development kit, such as an Arduino (Make:), or Parallax, development set.

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 'Akoakoa 213 for more information.