



**EE 160 – Programming for Engineers**

4 Credits (CRN: 60019 )

MTWRF 16.00-17.30

**INSTRUCTOR:** Mevan Ranasinghe  
**OFFICE:** (Online/Zoom)  
**OFFICE HOURS:** M 15.00-16.00 (before class) or by appointment  
**TELEPHONE:** --- **EMAIL:** [mevanr@hawaii.edu](mailto:mevanr@hawaii.edu)  
**EFFECTIVE DATE:** Summer 2023

**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 the Ko‘olau region of O‘ahu and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.*

**CATALOG DESCRIPTION**

EE 160 is a course for prospective engineers. It is an introductory course on computer programming and modern computing environments with an emphasis on algorithm and program design, implementation and debugging. A hands-on laboratory to develop and practice programming skills is included.

**STUDENT LEARNING OUTCOMES**

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

- Use the fundamental techniques of selection, looping, assignment, input and output to describe the steps a computer takes to solve a problem.
- Utilize mathematical techniques to solve simple problems and express those solutions as algorithms.
- Write, test and debug small programs for inquiry-based laboratory investigations.
- Compile, troubleshoot and debug programs with sufficient documentation and commenting.

**COURSE TASKS & GRADING**

The final grade will be determined by the total accumulated points. The break down for the points is:

Homework 25%  
 Exam#1 25%  
 Project 25%  
 Exam#2 (Final) 25%

**ATTENDANCE BONUS:**

Students benefit from discussions and participation so please attend regularly and contribute to our collective understanding. Bonus points will be given to regular attendees (**on-time, camera on**). In the event you complete the entire semester with no absences, +2 % is added to your OVERALL end-of-semester grade. As the number of absences increases, the number of bonus points decreases.

Days Absent	Percent Added
0	+ 2.0 %
1	+1.5%
2	+ 1.0 %
3	+ 0.5 %
4	0

## COURSE CONTENT.

WEEK	TOPICS
1	Course procedures, Intro, Variables, Input-output
1	Input QC (fgets, scanf), if statements, error types
2	Numerical data-types, arithmetic, algorithms
2	Loops, Test datasets, tough Problems
2	<b>EXAM 1</b>
3	Boolean data & Loops (continued), Functions
3	Polynomial problems, Secant method,
3	Multiple source code files
4	<b>PROJECT</b>
4	Arrays, pointers, Debugging methods & intro to 'GDB'
5	Reading/Writing to files
5	Data structures
6	Object-oriented programming intro, Data Science
6	Additional exercises & Review
Final Day	<b>FINAL EXAM</b>

## LEARNING RESOURCES

Laulima: Slidepacks on each Topic.

Textbook (**OPTIONAL**): "Engineering Problem Solving with C," Etter, Dolores M. 4<sup>th</sup> edition.

## 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.

Jodi Asato

Counselor, Student Disabilities Office

[jodiaka@hawaii.edu](mailto:jodiaka@hawaii.edu)

Hale Koko'o 105

808-235-7472

## 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:

Desrae Kahale \*Confidential Resource\*  
 808-235-7393  
[dkahale3@hawaii.edu](mailto:dkahale3@hawaii.edu)

Jojo Miller, \*Confidential Campus Advocate\*  
 808-348-0663  
[jojo.miller@hawaii.edu](mailto:jojo.miller@hawaii.edu)

Leslie Cabingabang \*Senior Confidential Advocate\*  
 808-348-0432  
[leslie.cabingabang@hawaii.edu](mailto:leslie.cabingabang@hawaii.edu)

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/](http://manoa.hawaii.edu/titleix/)

### **ACADEMIC INTEGRITY (This section is optional)**

Work submitted by a student must be the student's own work. The work of others should be explicitly marked, such as through use of quotes or summarizing with reference to the original author.

In this class, students who commit academic dishonesty, cheating or plagiarism will have the following consequence(s):

Students will receive a failing grade for plagiarized assignments.

All cases of academic dishonesty are referred to the Vice Chancellor for Student Affairs.

### **ALTERNATE CONTACT INFORMATION**

If you are unable to contact the instructor, have questions that your instructor cannot answer, or for any other issues, please contact the Academic Affairs Office:

- Location: Alaka'i 121
- Phone: (808) 235-7422