



UNIVERSITY of HAWAII®
WINDWARD
COMMUNITY COLLEGE

AG 170: Introduction to Aquaponics

4 Credits, CRN: 61374

Hybrid: Start date is August 21; end date is December 10

Virtual lectures

In-person lab: Wednesdays 10:00 am – 12:30 pm

INSTRUCTOR: Jolie Dollar

OFFICE: Uluwehi B104

OFFICE HOURS: Mondays 1:00 – 2:00 pm or by appointment

TELEPHONE: 808-236-9245 **EMAIL:** jolied@hawaii.edu

EFFECTIVE DATE: Fall 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

This course covers aquaculture, hydroponics, aquaponics, sustainable feed production, renewable local seeding technologies and micronutrient supplementation, fish and plant physiology, renewable energy systems, water catchment and conservation techniques, and best aquaponic food safety practices. The basic physical and biological principles governing sustainable farm and agribusiness operations are emphasized. (3 hours lecture, 3 hours laboratory.)

Activities Required at Scheduled Times Other than Class Times

Data collection and record keeping during the week.

Feeding the finfish.

STUDENT LEARNING OUTCOMES

As a result of taking this course, students can expect to attain the following outcomes:

1. Design and construct a basic aquaponic system that uses all three grow out technologies (nutrient film technique, ebb and flow, and floating raft) either alone or in combination.
2. Apply best aquaculture practices for culturing fishes in an aquaponic setting.
3. Identify the water quality parameters and manage them in order to maximize fish, plant and microbial outputs in an aquaponic setting.
4. Use best agricultural practices for plant crop production in an aquaponic setting. Prepare seedlings for planting, harvest produce, stagger production of both plant and fish, and apply food safety procedures.

COURSE TASKS

1. View all online lectures and attend all in-person laboratories. (30 points)
2. Participate in group discussions, read all assigned readings, and turn in all writing and laboratory assignments on time. (30 points)
3. Construct and successfully operate an aquaponic system. (20 points)
4. Contribute towards a group project. (20 points)

ASSESSMENT TASKS AND GRADING

Your grade will be based on our attendance, participation, and performance in completing the above tasks. Corresponding letter grades are as follows:

A = 100-90 points

B = 89-80 points

C = 79-70 points

D = 69-60 points

F = 59 or below.

Late and make-up work will be accepted on a case-by-case basis. Please let instructor know as soon as possible if you will be absent or have late work.

Please refer to the WCC College Catalogue for audit, withdrawal, and incomplete options.

COURSE CONTENT

- Water cycle
- Nutrification cycle
- Scientific method
- Hydroponic growing methods
- Aquaculture systems
- Management of water nutrients
- Water chemistry testing and test equipment
- Fish and plant anatomy
- Pumps and filtration
- Use of basic tools in carpentry and plumbing
- Troubleshooting in aquaponics
- Food safety and GAPs

LEARNING RESOURCES

Instructor will provide all learning resources as scanned articles, chapters, and videos.

No textbook will be used in this course. Descriptions of lectures, copies of presentations, handouts and laboratory assignments and activities will be made available as downloadable files over the course period on Laulima. Having access and use of a computer with Internet connection will be essential to completing the course.

The course, particularly the laboratory section, is to be taught with a “hands-on, learn-by-doing” philosophy as described in an ‘ōlelo no‘eau (Hawaiian Proverb) compiled by Mary Kawena Pukui:

Ma ka hana ka ‘ike — In the task is the knowledge and understanding.

Lectures covering the various course content and topics are to be accompanied with PowerPoint presentations and selected reading materials. The laboratory will consist of a variety of hands on learning activities and objectives.

ADDITIONAL INFORMATION (This may be included here or in an appendix.)

- I look forward to being your instructor for this course. I teach a variety of courses in the Sustainable Agriculture department including: AG 120 Plant Science, AG 202 Agriculture, Environment, & Society, and AG 170: Introduction to Aquaponics and courses through Career & Community Education including: Certified Arborist Exam Prep Course, Advanced Arborist Skills, and Beginning Tree Worker Skills.
- I expect students to complete their own work and respect all students’ insights and viewpoints.
- I want every student to succeed in this course. Please let me know as soon as possible if you are having difficulties or challenges with the course and/or with life in general. I am willing to work with each student depending on the circumstances.
- I will subtract 2 points for each day an assignment is turned in late unless there is a good, documented explanation.
- MySuccess: Students may be referred for extra help or advising through MySuccess. Students can also explore resources at MySuccess.Hawaii.edu and windward.hawaii.edu/MySuccess

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, royinouy@hawaii.edu, or you may stop by Hale Kāko‘o 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:

Jojo Miller, Confidential Advocate
 Phone: (808) 348-0663
 Email: advocate@hawaii.edu
 Office: Hale Kāko‘o 110

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

Karen Cho, Deputy Title IX Coordinator
 Phone: (808) 235-7404
 Email: kcho@hawaii.edu
 Office: Hale ‘Alaka‘i 120

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/

ACADEMIC INTEGRITY

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