

Fall 2024

WINDWARD COMMUNITY COLLEGE

Outline of Course Objectives

Ono Cooking and Food Science Laboratory

BIOC 106L (CRN 64381)

INSTRUCTORS: Michelle Smith & Martine Bissonnette

EMAIL: To email your instructors, select the **email icon** on the left task bar, select **Roles**, and select **Instructor**. This will provide your questions to both instructor's.

Office Hours: Announced weekly and held on ZOOM, or by appointment.

Credits: 1

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

'O keia ka wā kūpono e ho'onui ai ka 'ike me ka ho'omaopopo i kō Hawai'i mau ho'oilina waiwai. Aia nō ho'i ma ke Kulanui Kaiāulu o ke Ko'olau nā papahana hou o nā 'ike 'akeakamai a me nā hana no'eau. Me ke kuleana ko'iko'i e ho'ohiki ke Kulanui e kāko'o a e ho'okumu i ala e hiki kē kōkua i ka ho'onui 'ike a nā kānaka maoli. Na mākou nō e ho'olako, kāko'o a paipai i nā Ko'olau a kō O'ahu a'e me nā hana no'eau ākea, ka ho'ona'auao 'oihana a me ka ho'onui 'ike ma ke kaiāulu — hō'a'ano a e ho'oulu i nā haumāna i ka po'okela.

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 Ko'olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

CATALOG DESCRIPTION

Laboratory to accompany BIOC 106 (Ono Cooking and Food Science). This course is designed to illustrate fundamental techniques in the chemical, physical, and biological nature of food through experimentation. It will incorporate Hawaiian resources and sustainability. The overall goal of this course is to enhance students' understanding of the science of food using inquiry-based activities, field excursions, and a student-designed research project. (3 hours laboratory)

Prerequisite(s): Credit for or registration in BIOC 106, Credit for high school chemistry and algebra, equivalent preparation, or consent of instructor.

REQUIREMENTS COURSE SATISFIES:

AT WCC: Fulfills AA degree Natural Science Lab requirements. This class counts as a biological science lab.

STUDENT LEARNING OUTCOMES

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

1. Discuss the relationship between food composition, molecular properties, and food characteristics.
2. Apply the scientific method.
3. Demonstrate the proper use of standard tools of a scientist.
4. Transform food through chemical and physical processes.

RECOMMENDED PREPARATION

A passing grade in high school chemistry and algebra, or by instructor approval.

COURSE CONTENT

Concepts or Topics – The student will describe and integrate basic scientific principles and define basic terms presented in lab demonstrations, the required texts, and other instructional materials, citing specific examples when asked. These principles include the following:

Topics Include:

1. Food Safety, unit conversion, and cooking tools
2. Physical properties of food
3. Dispersion of matter
4. Leavening agents
5. Identifying macromolecules
6. Nutrition
7. Eggs
8. Carbohydrates
9. Microbiology in cooking and Food contamination (The 5 second rule)
10. Fermentation and alcohol
11. Foods of Hawaii
12. Science of flavors
13. Molecular gastronomy
14. Emulsions
15. Virtual Field Trips: Waikalua Loko fishpond, Aquaponics, Composting facility, Coffee plantation, Chocolate making, Medicinal garden

COURSE TASKS

1. Attend class at scheduled times.
2. Complete assigned reading(s) prior to lab.
3. Participate in laboratory exercises, including:
4. Record data and answer questions in lab and in laboratory notebook

RECOMMENDED READINGS

- J. Kenji López-Alt (2015). *The Food Lab: Better Home Cooking Through Science*. W. W. Norton & Company; 1st edition.

ISBN-10: 0393081087

ISBN-13: 978-0393081084

- Provost, et al. (2016). *The Science of Cooking: Understanding the Biology and Chemistry Behind Food and Cooking* 1st Edition. Wiley Pub.

ISBN-13: 978-1118674208

ISBN-10: 9781118674208

- Brenner et al. (2020). *Science and Cooking: Physics Meets Food, From Homemade to Haute Cuisine*

ISBN-10 : 0393634922

ISBN-13 : 978-0393634921

ASSESSMENT TASKS AND GRADING

Tools used for assessment of learning outcomes

- Weekly lab quizzes (these are designed to test students' understanding of and preparation for the week's activity).
- Research proposal. Students are required to write a research proposal for the independent research project they conduct during the final 4 weeks of the semester.
- Final presentation on the independent research project.

ASSESSMENT TASKS AND GRADING

Grading:

Quizzes (13):	10 %
Independent Research Project:	30 %
<u>Lab Assignments</u>	<u>60 %</u>
Final Grade:	100%

Grading Scale:

Total Points	Grade
100-90%	A
89-80%	B
79-70%	C
69-60%	D
59- 0%	F

Quizzes on Laulima (10%)

Quizzes are to be taken on Laulima under **Test & Quizzes** and relate to that weeks material. Please review the Quiz Guide ([click link](#)) prior to taking the quiz. You need to have computer access. It is open for the week and closes on Sunday 11:55 pm. You have 30 minutes to take the quiz. No make-up quizzes for missed quizzes.

Project (30%)

Select one of the topics provided by your instructor from the topic list. Research the topic and determine the concepts you want to demonstrate (physical, chemical, or biological properties). For example, maybe you want to demonstrate the Maillard reaction in frying potstickers (dumplings). The next step is to write a full proposal for your project.

Please adhere to the following guidelines when writing your proposal.

A. Project Title

Choose a title that gives a clear indication of the nature of your project.

B. Introduce the topic and review current literature

1. The purpose of the literature review is to find out what has already been done on the topic. This will involve reviewing an article on your topic
2. Write a summary of the article you reviewed. This should be at least 1 double-spaced. Page with a link to the article. You should describe the overall chemical, physical, or biological process tested with your recipe.

C. Specific Objective(s).

This should be a concise statement of the objectives of your project.

D. Experimental Protocol

1. Write a detailed, step-by-step protocol for the experiment/recipe you will conduct. Include a list of all ingredients and tools that you will need to conduct the experiment.
2. Carefully explain the principles underlying the experimental methods and techniques you plan to use.

E. References

Please follow the format used by the APA to citing references

F. Provide a PPT or video introducing your topic and completion of your project.

Project Topic List

- Physical and chemical properties of food
- Leavening agents
- Enzymes in cooking
- Eggs
- Maillard reaction
- Carbohydrates
- Fermentation
- Molecular Gastronomy
- Emulsions
- Food from Hawaii
- Cultural food

LAB ASSIGNMENTS (60%)

Laboratory Notebooks

The purpose of requiring notebooks is to acquaint students with GOOD LABORATORY PRACTICES. Proper data accumulation, organization and review are necessary to validate information and form a basis for decisions made in science and cooking.

Lab Notebook Format

1. Notebooks must be a bound composition book.
2. On the cover provide your name, course alpha (BIOL 106L), section #, semester, day and time.
3. Individual labs should be labeled by lab number and title.
4. Each experiment should be outlined.
5. Leave some space in the notebook so that changes in the procedure can be noted here.
6. Results are to be written as tables of data, visual or sensory observations, or other forms appropriate for the procedure.

Lab notebook rubric

Points awarded	Comments
5	Legible; methods complete, noting any changes made; observations of experiments clear; Raw data present in organized format; Table of contents upto-date; Lab mates noted for recognition in report; date present.
4	Raw data present but not organized in an easily identifiable way; methods incomplete;

3	Partially missing methods or changes not noted; Table of contents missing information; no observations
2	Date missing; raw data so disorganized so as to be difficult to identify
1	Methods missing; Raw data not present;
0	Did not come to lab;

Weekly Laboratory Assignments

Students will submit weekly lab assignments in the forum folder. This may include photos, videos, worksheets, or other items to upload

Common sense cooking safety

- Do not cross contaminate veggies by chopping them on a cutting board previously used for meat
- Do not rinse poultry
- Take extra care when preparing foods that contain raw egg, such as homemade mayonnaise, tiramisu and eggnog. Bacteria present on eggshells and inside the egg can contaminate these types of food and cause food poisoning.
- Clean surfaces by washing with warm soapy water; spray tables with standard cleaner with bleach.
- Replace dish sponge often

ACADEMIC DISHONESTY

Students involved in academic dishonesty will receive an "F" grade for the course.

Academic dishonesty includes cheating on exams and plagiarism. See page 16 of the 2011-2012 course catalog for a description of the University's policies concerning academic dishonesty.

STUDENT RESPONSIBILITIES

If the student has an allergy to a food or any special dietary considerations please inform your instructor prior to the activity. They will do their best to find an alternative.

The student is expected to attend lectures, participate in all course activities, and complete all quizzes, projects, and course assignments on time.

The student is expected to be prepared in advance before the attending class. Being prepared includes the following: having read text materials (e.g., textbook readings, and lecture outlines) assigned for that day's activities and bringing required work materials (e.g., textbook, handouts, cooking supplies, etc.) to the session.

Please be considerate to other students by turning off any Cell Phone devices or Beepers during class.

Any changes in the course schedule, such as examination dates, deadlines, etc., will be announced ahead of time on the course website. It is the student's responsibility to be informed of these changes.

It is the student's responsibility to be informed about deadlines critical to making registration changes (e.g., last day of erase period and last day for making an official withdrawal).

The student should understand that "introductory" does not mean "easy". The student should not assume that the lack of science prerequisites for this class ensures a low level of difficulty for this course. While the instructor assumes that students enrolled in BIOL 106L have little or no science background, the student should expect a level of difficulty comparable to other 100-level science classes. When difficult concepts and detailed information are presented, it is the student's responsibility to take the appropriate steps to learn and understand these concepts and information.

Science courses generally require two to three hours of independent private study time for each hour in class (depends upon the student's science background). It is the student's responsibility to allocate the appropriate time needed for study in an environment conducive to quality study. The student must budget time efficiently and be realistic about all personal and professional commitments that consume time.

NATURAL SCIENCES DEPARTMENT POLICY ON WITHDRAWALS AND INCOMPLETE

1. WITHDRAWALS (W GRADES) –

It is the student's responsibility to know the last day of withdrawal, found on academic calendar list: <https://windward.hawaii.edu/Academics/Calendar/>

Students who no longer attend class and who DO NOT OFFICIALLY WITHDRAW from the course will receive "F" grades.

2. INCOMPLETE (I GRADE) – Students must present the "Request for Incomplete" form prior to the last day of instruction. "I" grades will be given only to students who are achieving passing grades and are very close to completing the course. In addition, the student must have a very good reason for not being able to complete all the work on time.

Examples of extreme or unusual circumstances are:

1. a certified medical reason
2. a death in the immediate family

WINDWARD COMMUNITY COLLEGE POLICY

1. Windward Community College is an Equal Opportunity/ Affirmative Action Institution.
2. Extended time in a distraction-free environment is an appropriate accommodation based on a student's disability. If you do have a disability and have not voluntarily disclosed the nature of your disability and the support you need, you are invited to contact Ann Lemke at 235-7448, lemke@hawaii.edu, or you may stop by Hale 'Akoakoa 213 for more information.
3. Students are expected to attend all classes for which they are registered. If a student is unable to attend class, he or she should contact the instructor in advance to give notification of the absence and make necessary arrangements.

For those students who receive financial aid and fail to attend the first week of classes without making arrangements with the instructor, the instructor will submit the student's name to the Financial Aid Office. The student will be denied financial aid for the class he/she is not attending. In addition, it is solely the student's responsibility to withdraw from the class or attend the class and pay the tuition.

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, Disabilities Counselor, can be reached at (808) 235-7472, jodiaka@hawaii.edu, or you may stop by Hale Kāko'o 105 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:

Leslie Cabingabang, UH System Confidential Advocate
Phone/Text: (808) 348-0432 or (808) 341-4952
Email: advocate@hawaii.edu
Office: Hale Kāko'o 107 (Wednesdays)

Mykie E. Menor Ozo-Aglugub, J.D., Title IX Coordinator
Phone: (808) 235-7468
Email: mozoo@hawaii.edu
Office: Hale Kāko'o 109

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.

[Windward CC Student Conduct Information](#)

[UH System Student Conduct Policy EO 7.208](#)

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