IRAO OFFICE USE ONLY	
Received	
In Banner	
MTVCOMP	

University of Hawai'i
Code Request Form for Academic Programs

NEW OR MODIFIED SUBJECT CODE

Date: March 20, 2024

REQUESTOR CONTACT INFORMATION

Name	Kimberley P. Collins	Campus	Hawaii CC
Title	Vice Chancellor of Academic Affairs	Email	kpcollin@hawaii.edu
Office/Dept	VCAA Office	Phone	808-934 2512

☑ **NEW SUBJECT CODE USE AT INSTITUTION**
☐ **MODIFY SUBJECT CODE USE AT INSTITUTION**

Institution: Hawaii CC Effective Term: Summer 2024

		Code (Max. Characters)	Description (30 characters max)	Check if requesting new code:
College	(2)	HA	Haw CC	☐ See Banner form STVCOLL
Division	(4)	LB	Liberal Arts	☐ See Banner form STVDIVS
Department	(4)	NS	Natural Science	☐ See Banner form STVDEPT
Subject	(4)	AQUA	Aquaculture	☑ See Banner form STVSUBJ

For Community Colleges, select one:
General & Pre-Professional (GPP) or ☑
Career & Technical (CTE) ☐

Explain the reason for the new subject code (i.e. - replacing an existing subject code (specify), revised name, new program, ...):

Through a joint Perkins project with Windward, we are beginning to offer courses in Algae cultivation.

ATTACHMENTS

☑ Memo with appropriate campus approval (i.e. Campus Curriculum Committee, Vice Chancellor for Academic Affairs, etc.)

VERIFICATIONS

Registrar:

Print Name	Signature	Date
Sherise Tiogangco	Sherise Tiogangco	Apr 8, 2024

Financial Aid Officer:

Print Name	Signature	Date
Calvin Black	Calvin Black	Apr 8, 2024

For Community Colleges, verification of consultation with OVPCC Academic Affairs:

Print Name	Signature	Date
Tiana Loo	Tiana Loo	Apr 9, 2024

UNIVERSITY of HAWAI'I
HAWAI'I
COMMUNITY COLLEGE

Office of the Chancellor

March 20, 2024

TO: Debora Halbert
Vice President for Academic Strategy

VIA: Erika Lacro
Vice President for Community Colleges

VIA: Della Teraoka
Associate Vice President for Academic Affairs

VIA: Kimberley Collins
Vice Chancellor for Academic Affairs

FROM: Susan Kazama
Interim Chancellor

RE: New Subject Code - AQUA

Requesting a new subject code for Aquaculture (AQUA) at Hawai'i Community College which corresponds with the same subject code at Windward Community College and is an outcome of our joint Perkins project.

Attachments: Curriculum Summary

AQUA 198
Introduction to Algae Cultivation

Approved | Summer 2024

Proposal Information

Workflow Status

Complete

Approval Notification List, Approval Notification List expand

Notification Sent | Approval Notification List

- Sherrie Ann Straslicka-Walker
- M Kanoe Lambert
- Reshela DuPuis
- Larissa Leslie
- Sherise Tiogangco
- Christine Quintana
- Raynette Haleamau-kam
- Sandra Kama
- Kuulei Kanahele
- Grace Funai

P) PROPOSAL DETAILS

P1) Is this a (Learning Outcomes Alignment, Fast Track, or Curriculum) proposal?

Curriculum (regular/experimental)

P2) Modification Rationale/Reason(s)

New experimental course titled "Introduction to Algae Cultivation".

P2a) Retire

N/A

P3) Course is referenced in the following courses and programs:

There are no dependencies

P4) Does the proposal (increase, decrease, or make no changes) in the number of credits required?

Make no changes

A) Basic Information

A1) Start Term
Summer 2024

A2) Subject Code
AQUA

A3) Number
198

A4) Course Title
Introduction to Algae Cultivation

A5) Banner Title
Intro Aqua Cult

A6) Division/Department
Natural Science Department

Linked Subject Code and Number at other UH campuses
No Course Matches

Different Subject Code and/or Number at other UH campuses

B) General Information

B1) Description
An introduction to algal biology and sustainable cultivation for both limu (macroalge) and microalgae. Students are introduced to water and nutrient cycling and water testing methods. Algae anatomy and chemical structure as they relate to potential products from algae. Student will engage in a deep dive into photo systems and photosynthesis is also provided. In addition, a practical focus on water pumping and filtration systems, carpentry, and plumbing will be taught.

B2) Cross-listed Course(s)

B3) Type of Course
Experimental

B4) Credit Options
3

B5) Repeatability
Course is Not Repeatable

B6) Grading Options
Standard Letter A-F (L)

C) Requisite Information

C1) Requisite(s)

No Rules

C2) Recommended Preparation

None

D) Content Information

D1) Outcomes

1. Identify and describe the major algae groups used in sustainable commercial applications.

Linked Program Outcome

NSCI PLO1: Analyze data effectively using current technology. (Natural Science - Biological Sciences)

2. Apply cell biology and chemistry to algae cultivation.

Linked Program Outcome

NSCI PLO3: Analyze and apply fundamental mathematical, physical, and chemical concepts and techniques to scientific issues. (Natural Science - Biological Sciences)
NSCI PLO4: Apply fundamental concepts and techniques in their chosen concentration. (Natural Science - Biological Sciences)

3. Describe basic operations of algae cultivation facilities.

Linked Program Outcome

NSCI PLO2: Communicate scientific ideas and principles clearly and effectively. (Natural Science - Biological Sciences)

4. Indicate how to create and maintain a safe working environment.

Linked Program Outcome

NSCI PLO4: Apply fundamental concepts and techniques in their chosen concentration. (Natural Science - Biological Sciences)

D2) Course Objectives

1.Be familiar with the major algae groups used in sustainable commercial applications.
2.Understand the cell biology and chemistry of algae cultivation.
3.Learn about basic operations of algae cultivation facilities.
4.Understand how to create and maintain a safe working environment.

D3) Course Topics

The course topics include water & nutrification cycle, scientific method, algae growing methods, algae cultivation systems, management of water nutrients, water chemistry testing and test equipment, algae anatomy, chemical principles, photosystems, pumps and filtration, use of basic tools in carpentry and plumbing,, troubleshooting in algae cultivation, and food safety.

D4) Program Major Requirement

D5) Approved General Education Categories and Area Requirements (Admin Only)

Degree	Designation	Start Term (Ex. Fall 2018)	End Term (Ex. Fall 2018)	New GE Designation	GE Renewal
--					

D6) Writing Intensive Course (Admin Only)

Course	Instructor	Course Approval/Renewal Dates

D7) Hawaiian Asian Pacific Designation Field (Admin Only)

Course	Type of Designation	Effective Date	Renewal Date

D8) Sustainability Designation Fields (Admin Only)

Course	Title	Instructor(s)	Disciplinary Area	Effective Dates

E) Other Information

E1) Is the course restricted to specific majors?

No

E2) Special Considerations

E3) How is the course related to the educational needs, goals, and/or mission of the college?

This course under the discipline of biology in the areas of botany and phycology. It also relates to the discipline of aquaculture.

E4) Will the course require additional staff, equipment, facilities and/or other costs?

No

E5) Does the college have full-time faculty who meet these requirements?

--

E6) Contact Hours

Semester Type

Standard Semester (15 weeks)

Activity Type	Hours/Week	Credit Ratio	Contact Hours	Credits
Lecture (1 credit per 1 contact hour)	3	1:1	45	3
Lab (1 credit per 3 contact hours)		1:3	0	0
Lecture/Lab (1 credit per 2 contact hours)		1:2	0	0
Shop (1 credit per 2 contact hours per week)		1:2	0	0
	3		45	3

E7) Contact Hours Additional Comments

E8) Schedule Type

E9) Workload (Teaching Equivalency)

3

E10) Modify (Admin Field Only)

Upload applicable files related to this course

F) Dependencies

There are no dependencies

G) Banner Data

1) Effective Term:

2) Scabase End Term:

3) Course Title (Long Title):

4) Transcript Title:

5) College:

---

6) Division:

---

7) Department:

---

8) Status:

---

9) Continuing Education (non-credit):

10a) CEU or Credit (Low):

10b) CEU or Credit Options:

--

10c) CEU or Credit (High):

11a) Billing (Low):

11b) Billing Credits:

--

11c) Billing (High):

12a) Lecture (Low):

12b) Lecture (Options):

--

12c) Lecture (High):

13a) Lab (Low):

13b) Lab Options:
--

13c) Lab (High):

14a) Other (Low):

14b) Other Options:
--

14c) Other (High):

15a) Contact (Low):

15b) Contact Options
--

15c) Contact (High):

16) Repeatability:

17) Course Level:

Repeat Limit:

Maximum Hours:

Repeat Status:
---

18) Grading Options:

19) Default Grading Option Code:
---

20) Schedule Type:

21) Workload:

User Entered Prerequisite(s):

User Entered Co-requisite(s):

User Entered Prerequisite(s)/Co-requisite(s):

Recommended Preparation:
None

23) Equivalent Course(s):

Course	Start Term	End Term

24) Degree Attribute:

User Entered Description:
An introduction to algal biology and sustainable cultivation for both limu (macroalge) and microalgae. Students are introduced to water and nutrient cycling and water testing methods. Algae anatomy and chemical structure as they relate to potential products from algae. Student will engage in a deep dive into photo systems and photosynthesis is also provided. In addition, a practical focus on water pumping and filtration systems, carpentry, and plumbing will be taught.

25) Course Description:

26) Course Text:

Banner Integration Flag

Banner Integration Results

H) Kuali Admin

Admin Comments

Status
Active

Date End
No Date Chosen

15a) Approved General Education Designations (Admin Use Only)

I) Retired Fields

2.1a) Prerequisite(s)

2.1b) Corequisite(s)

4) Does the proposal affect other course(s) and/or program(s)?
--

6) Does the proposal lengthen the time needed to complete a degree and/or certificate?
--

3.1a) SLO-PLO Date (Admin Use Only) **3.1b) SLO-DH Date (Admin Use Only)**

3.4) Program Major Requirement (old) **3.5) Program Major Requirement Option**

4.2) Semester Offering **4.5) What experiential or professional preparation is required to teach this course?** **4.7) Course Review Due (Admin Use Only)**

AQUA 197L
Introduction to Algae Cultivation Lab

Approved | Summer 2024

Proposal Information

Workflow Status

Complete

Approval Notification List, Approval Notification List expand

Notification Sent | Approval Notification List

- Sherrie Ann Straslicka-Walker
- M Kanoe Lambert
- Reshela DuPuis
- Larissa Leslie
- Sherise Tiogangco
- Christine Quintana
- Raynette Haleamau-kam
- Sandra Kama
- Kuulei Kanahele
- Grace Funai

P) PROPOSAL DETAILS

P1) Is this a (Learning Outcomes Alignment, Fast Track, or Curriculum) proposal?

Curriculum (regular/experimental)

P2) Modification Rationale/Reason(s)

New experimental course titled "Introduction to Algae Cultivation Lab".

P2a) Retire

N/A

P3) Course is referenced in the following courses and programs:

There are no dependencies

P4) Does the proposal (increase, decrease, or make no changes) in the number of credits required?

Make no changes

A) Basic Information

A1) Start Term
Summer 2024

A2) Subject Code
AQUA

A3) Number
197L

A4) Course Title
Introduction to Algae Cultivation Lab

A5) Banner Title
Intro Aqua Cult Lab

A6) Division/Department
Natural Science Department

Linked Subject Code and Number at other UH campuses
No Course Matches

Different Subject Code and/or Number at other UH campuses

B) General Information

B1) Description
An introduction to algal biology and sustainable cultivation. Students are introduced to media preparation, sterile technique, culture inoculation, and microscopy through hands on instruction/experiential learning activities. Students scale-up from isolated strains to 10-liter photobioreactors. Standard monitoring equipment is also introduced for the analysis of water and media chemistry, monitoring algal growth rates, and troubleshooting. Data collection, record keeping, and safety are emphasized throughout the course. If possible, students will be exposed to algae cultivation facilities in operation.

B2) Cross-listed Course(s)

B3) Type of Course
Experimental

B4) Credit Options
1

B5) Repeatability
Course is Not Repeatable

B6) Grading Options
Credit/No Credit (C)

C) Requisite Information

C1) Requisite(s)
No Rules

C2) Recommended Preparation
None

D) Content Information

D1) Outcomes
1. Demonstrate the proficiency in microscopy.

Linked Program Outcome

NSCI PLO4: Apply fundamental concepts and techniques in their chosen concentration. (Natural Science - Biological Sciences)
2. Isolate an algae colony from a mixed population.

Linked Program Outcome

NSCI PLO4: Apply fundamental concepts and techniques in their chosen concentration. (Natural Science - Biological Sciences)
3. Prepare media and cultivate algae up to 10 L.

Linked Program Outcome

NSCI PLO4: Apply fundamental concepts and techniques in their chosen concentration. (Natural Science - Biological Sciences)
4. Use analytical instrumentation to monitor an algae/limu culture.

Linked Program Outcome

NSCI PLO1: Analyze data effectively using current technology. (Natural Science - Biological Sciences)
5. Operate basic lab equipment used in algae production facilities and lab safety

Linked Program Outcome

NSCI PLO4: Apply fundamental concepts and techniques in their chosen concentration. (Natural Science - Biological Sciences)

D2) Course Objectives
1. Learn about in microscopy.
2. Understand algae cultivation techniques.
3. Apply algae/limu culture monitoring techniques.
4. Learn about basic lab equipment used in algae production facilities and lab safety.

D3) Course Topics
The course topics include lab safety, microscopes & cell counting, medium preparation & sterilization, plate streaking, analysis of density and dry weight of culture, microscopy for Culture Contaminants, aseptic transfer, scaling up algae culture, harvestand media replacement & recycle, field trips, and food safety.

D4) Program Major Requirement

D5) Approved General Education Categories and Area Requirements (Admin Only)

Degree	Designation	Start Term (Ex. Fall 2018)	End Term (Ex. Fall 2018)	New GE Designation	GE Renewal
--					

D6) Writing Intensive Course (Admin Only)

Course	Instructor	Course Approval/Renewal Dates

D7) Hawaiian Asian Pacific Designation Field (Admin Only)

Course	Type of Designation	Effective Date	Renewal Date

D8) Sustainability Designation Fields (Admin Only)

Course	Title	Instructor(s)	Disciplinary Area	Effective Dates

E) Other Information

E1) Is the course restricted to specific majors?

No

E2) Special Considerations

E3) How is the course related to the educational needs, goals, and/or mission of the college?

This course under the discipline of biology in the areas of botany and phycology. It also relates to the discipline of aquaculture.

E4) Will the course require additional staff, equipment, facilities and/or other costs?

yes

Will require lab and supplies for the cultivation of algae.

E5) Does the college have full-time faculty who meet these requirements?

--

E6) Contact Hours

Semester Type

Standard Semester (15 weeks)

Activity Type	Hours/Week	Credit Ratio	Contact Hours	Credits
Lecture (1 credit per 1 contact hour)		1:1	0	0
Lab (1 credit per 3 contact hours)	3	1:3	45	1
Lecture/Lab (1 credit per 2 contact hours)		1:2	0	0
Shop (1 credit per 2 contact hours per week)		1:2	0	0
	3		45	1

E7) Contact Hours Additional Comments

E8) Schedule Type

E9) Workload (Teaching Equivalency)
2.5

E10) Modify (Admin Field Only)

Upload applicable files related to this course

F) Dependencies

There are no dependencies

G) Banner Data

1) Effective Term:

2) Scabase End Term:

3) Course Title (Long Title):

4) Transcript Title:

5) College:
---

6) Division:
---

7) Department:
---

8) Status:
---

9) Continuing Education (non-credit):

10a) CEU or Credit (Low):

10b) CEU or Credit Options:
--

10c) CEU or Credit (High):

11a) Billing (Low):

11b) Billing Credits:
--

11c) Billing (High):

12a) Lecture (Low):

12b) Lecture (Options):
--

12c) Lecture (High):

13a) Lab (Low):

13b) Lab Options:
--

13c) Lab (High):

14a) Other (Low):

14b) Other Options:
--

14c) Other (High):

15a) Contact (Low):

15b) Contact Options
--

15c) Contact (High):

16) Repeatability:

17) Course Level:

Repeat Limit:

Maximum Hours:

Repeat Status:
---

18) Grading Options:

19) Default Grading Option Code:
---

20) Schedule Type:

21) Workload:

User Entered Prerequisite(s):

User Entered Co-requisite(s):

User Entered Prerequisite(s)/Co-requisite(s):

Recommended Preparation:
None

23) Equivalent Course(s):

Course	Start Term	End Term

24) Degree Attribute:

User Entered Description:

An introduction to algal biology and sustainable cultivation. Students are introduced to media preparation, sterile technique, culture inoculation, and microscopy through hands on instruction/experiential learning activities. Students scale-up from isolated strains to 10-liter photobioreactors. Standard monitoring equipment is also introduced for the analysis of water and media chemistry, monitoring algal growth rates, and troubleshooting. Data collection, record keeping, and safety are emphasized throughout the course. If possible, students will be exposed to algae cultivation facilities in operation.

25) Course Description:

26) Course Text:

Banner Integration Flag

Banner Integration Results

H) Kuali Admin

Admin Comments

Status

Active

Date End

No Date Chosen

15a) Approved General Education Designations (Admin Use Only)

I) Retired Fields

2.1a) Prerequisite(s)

2.1b) Corequisite(s)

4) Does the proposal affect other course(s) and/or program(s)?

--

6) Does the proposal lengthen the time needed to complete a degree and/or certificate?

--

3.1a) SLO-PLO Date (Admin Use Only) **3.1b) SLO-DH Date (Admin Use Only)**

3.4) Program Major Requirement (old) **3.5) Program Major Requirement Option**

4.2) Semester Offering **4.5) What experiential or professional preparation is required to teach this course?** **4.7) Course Review Due (Admin Use Only)**