

Course Information

Semester & Year: Spring 2024

Course ID & Section #: AQUA-2-E6164

Instructor's name: Jasmine Iniguez

Class Days/Time:

LECTURE: T/TH 9:00-10:25 AM

Location: HU217

LAB: Tuesday 11:40-2:50 PM

Location: AT108 or Cal Poly Fish Hatchery

Course units: 4

Instructor Contact Information

Office location: SCI 216I

Office hours: In person by appointment or via ZOOM

Phone number: (707) 476-4528

Email address: jasmine-iniguez@redwoods.edu

Except a 24-hour turnaround time for response to emails (M-F).

Catalog Description

This course provides students the opportunity to apply their general understanding of aquaculture to succeed in the industry. Students will focus on understanding and practicing the principals involved in aquaculture management and operating closed, recirculating aquaculture systems (RAS) as well as other systems for finfish and shellfish. Students will learn about the operation and activities surrounding the care and maintenance of fish stocks, tank systems, and equipment. The course will include in-class lectures, labs, and hands-on experiences with local hatchery and aquaculture facilities.

Course Student Learning Outcomes

1. Research, design, communicate, and apply the principles of aquaculture to create, operate, and manage elements of multiple aquaculture systems within various legal, social, economic, and environmental contexts.

Prerequisites/co-requisites/ recommended preparation

AQUA-1, Intro to Aquaculture

Recommended Course Textbook

Aquaculture: Farming Aquatic Animals and Plants, 3rd Edition

Author: John S. Lucas & Paul C. Southgate

Publisher: Wiley-Blackwell

ISBN: 9781119230861

Aquaculture Production System, 2012

Author: James. H. Tidwell

Publisher: World Aquaculture Society and Wiley Blackwell

ISBN: 9780813801261

eBook FREE access at:

<https://ebookcentral.proquest.com/lib/redwoods-ebooks/detail.action?docID=827051&pg-origsite=primo>

Supplemental & Recommended References/Textbooks

The Yellow Book of Recirculating Aquaculture, 5th edition

Author: Michael B. Timmons and Brian J. Vinci 2022

Publisher: Ithaca Publishing Company LLC

ISBN: 978-0-9712646-9-4

Southern Regional Aquaculture Fact Sheets <https://srac.msstate.edu/publications.html>

Educational Accessibility & Support

College of the Redwoods is committed to providing reasonable accommodation for qualified students who could benefit from additional educational support and services. You may qualify if you have a physical, mental, sensory, or intellectual condition which causes you to struggle academically, including but not limited to:

- Mental health conditions such as depression, anxiety, PTSD, bipolar disorder, and ADHD
- Common ailments such as arthritis, asthma, diabetes, autoimmune disorders, and diseases
- Temporary impairments such as a broken bone, recovery from significant surgery, or a pregnancy-related disability
- A learning disability (e.g., dyslexia, reading comprehension), intellectual disability, autism, or acquired brain injury
- Vision, hearing, or mobility challenges

Available services include extended test time, quiet testing environments, tutoring, counseling and advising, alternate formats of materials (e.g., audio books, E-texts), assistive technology, on-campus transportation, and more. If you believe you might benefit from disability- or health-related services and accommodations, please contact [Disability Services and Programs for Students \(DSPS\)](#). If you are unsure whether you qualify, please contact DSPS for a consultation: dsps@redwoods.edu.

- Eureka: 707-476-4280, Student Services Building, 1st floor
- Del Norte: 707-465-2324, Main Building, near the library
- Klamath-Trinity: 707-476-4280

Student Support Services

Good information and clear communication about your needs will help you be successful. Please let your instructor know about any specific challenges or technology limitations that might affect your participation in class. College of the Redwoods wants every student to be successful.

The following online resources are available to support your success as a student:

- [CR-Online](#) (Comprehensive information for online students)
- [Library Articles & Databases](#)
- [Canvas help and tutorials](#)
- [Online Student Handbook](#)
- [Online Tutoring Resources](#)

To learn more about the resources available to you, click on a title bar below, or click the down arrow to expand them all.

Klamath-Trinity students can contact the CR KT Office for specific information about student support services at 530-625-4821

Community College Student Health and Wellness

If you are in distress or are with someone at risk right now, call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255) or TEXT 741-741

Timely Care

When you're feeling under the weather physically or distressed mentally, you can find the help you're looking for in just a few quick taps. Students can schedule an appointment anytime via phone, video, and chat. [Visit TimelyCARE here](#)

Mental Health Counseling

Students should text, email, or fax Shawna Bell directly for scheduling and/or services.

Contact info

Text: 707-496-2856

Email: shawnabmft@gmail.com

Fax: 707-237-2318 (voicemail can be left via fax)

Wellness Central

Resources, tools, and training regarding health, mental health, wellness, basic needs and more designed for California community college students, faculty and staff are available on the California Community Colleges [Wellness Central](#).

Evaluation & Grading Policy:

Course Requirements	Percent of Total Grade	Due Date
Exam 1	20	Thursday, Feb. 15
Exam 2	20	Thursday, March. 28
Final Exam	20	Tuesday, May 7
Aquafarm Project	15	Thursday, Apr. 18
Lab Reports/Worksheets	10	TBA
Aqua Symposium	10	Tuesday, April 30
Participation (attendance taken into account)	5	Wednesday, Dec.

CR has a set policy for how course percentages convert to grades:

A > 92%; A- 90-92%; B+ 87-89%; B 83-86%; B- 80-82%; C+ 77-79%; C 70-76%; D 60-69%; F

Late Assignments:

Each student is responsible for completing all assignments and activities as specified by the instructor by the date indicated. Please stay on task, as late assignments will be penalized and loose 5% for each day they are late. If you have an emergency (e.g. hospitalization, death in the family, car accident) please notify me as soon as you can if this affects your coursework or

attendance. Please contact me immediately if something in the foreseeable future is approaching as well.

Exam Make-up Policy:

This class will have a total of three exams (100 points each), which make up 60% of your grade! The course is broken up into three units. These three units make up each exam, which means the exams are not cumulative, but some topics may resonate, and you may see them on other exams. The final is not cumulative. **You must have a serious and verifiable excuse to miss a lecture exam. If you have an emergency (hospitalization, family/friend death, car accident, quarantine) please notify me as soon as you can if this affects your ability to take the exam on the scheduled date.** Please contact me 12 hours in advance if something in the foreseeable future is approaching as well. If you do not notify me and or do not provide a legitimate excuse an automatic 10% will be taken from your makeup exam.

Research Paper:

Students are required to write a research paper on one production system and species in which they would like to farm. The farm proposal idea must be approved by instructor. The final draft will be due Thursday, April 25. It will be submitted online through regular email to jasmine-iniguez@redwoods.edu.

This paper should be 3-5 pages in length, typed with 12- point font in Times New Roman and doubled spaced. At least 5 peer-reviewed references should be cited from a research journal. Pictures, diagrams, and tables are highly encouraged but not required. They will not count towards page requirements.

The paper must be formatted following the guidelines from the Journal of the World Aquaculture Society. An example paper will be shared for you to reference formatting and structures. Link to the guidelines will be shared on Canvas.

Outline:

The outline of the paper must include Abstract, Introduction, Life History of the proposed species, Water Quality Requirements, Production Methods, Nutritional Requirements, Diseases, and Future Directions for the farm.

The paper should include the following:

- Brief overview of the proposed system and detailed description of the new proposed farm
- Description on the appropriate mechanics (system components, engineering, and design) of your system.
- Proposed Species: E.g. appropriate stocking rates, feeding rates, water quality requirements, nutritional requirements, spawning methods
- Proposed Farm Location
- Economics and Marketing of your farmed species
- Conclusion of your proposed farm idea

Format:

Submit in word document NOT pdf so I can make suggestions. This paper should be 4-6 pages in length, typed with 12- point font in Times New Roman and double spaced. At least 5 peer-reviewed

references should be cited from a research journal. Pictures, diagrams, and tables are highly encouraged but not required. They will not count towards page requirements.

The paper must be formatted in MLA format. Links to the guidelines will be shared on Canvas.

Citations: Utilize google scholar (<https://scholar.google.com/>) to search for academic journals. If there is a research manuscript you are unable to access, please let me know. I may be able to get it for you.

DUE DATES:

Thursday, – Farm Proposal Idea – Submitted on Discussion Board via Canvas

Thursday- Outline with reference

Thursday – First completed draft

Thursday – Final Draft DUE

Tentative Field Trips:

There will be tours at the Cal Poly Fish Hatchery, Mad River Fish Hatchery, Hog Island Oyster Company, and an overnight field trip camping on a commercial aquaculture farm, The Fishery in Galt, California.

- **Thursday, Feb 20:** Mad River Hatchery Tour
- **Thursday, April 2:** Hog Island Oyster Co. Field Trip
- **TBA:** Weekend Field Trip to the Fishery farm, Galt CA

Lab Exercises @ Cal Poly Humboldt:

- **Tuesday, Jan 23:** Spawning
- **Tuesday, February 6:** Water Quality Exercise
- **Tuesday, February 27:** Anesthesia and Euthanasia Lab
- **Tuesday, March 5:** Fish Health and Dissection Exercise
- **Tuesday, March 26:** Calculate Feeding Rates and Growth Estimate Exercise.

NOTE: CR does not provide transportation so therefore students are expected to provide their own for traveling for field trips. Please consider carpooling with each other!

Lab Writeups:

Students will have either a lab report or worksheets that they will need to complete and turn in. If a lab report is assigned, the lab report will be due one week after the lab. If there is a worksheet during the lab, the worksheet can either be turned in after lab if complete OR one week after the lab.

Tentative Course Schedule

AQUA 2: Applied Aquaculture			
Date	Week 1	Lecture Topic T/TH 9:00 -10:25 AM	Tuesday Lab 11:40 AM – 2:35 PM
16-Jan	T	Overview and Introduction	CR - Lab Overview & Aqua Projects System Design -
18-Jan	TH	Review Aquaculture Production Systems	
	Week 2		
23-Jan	T	Aquaculture System Design (Ch. 3, Lucas)	Cal Poly Humboldt Spawning??
25-Jan	TH	Marketing Aquaculture (Ch. 3, Parker)	
	Week 3		
30-Jan	T	Water Quality Review	CR - Build a System – System components and Identification
1-Feb	TH	WQ Case Scenarios/Treatment Calc	
	Week 4		
6-Feb	T	Aquaculture Plumbing	Cal Poly Humboldt Water Quality Testing and Calculations
8-Feb	TH	Pumps, Motors, and Aeration	
	Week 5		
13-Feb	T	Mad River Hatchery Field Trip	CR Calculating eggs/volumetric
15-Feb	TH	EXAM 1	
	Week 6	Aquaculture America Conference 24''	
20-Feb	T	Handling Processing	CR – Build a System Plumbing Identification Exercise
22-Feb	TH	Hauling and Transporting	
	Week 7		
27-Feb	T	Aquaculture Diseases	Cal Poly Humboldt Anesthesia & Euthanasia
29-Feb	TH	Diseases Treatments - Case Scenarios	
	Week 8		
5-Mar	T	Reproduction	Cal Poly Humboldt Fish Disease Diagnosis and Blood Lab
7-Mar	TH	Reproduction	
	Week 9		
12-Mar	T	Spring Break - No Class	Spring Break - No Class
14-Mar	TH	Spring Break - No Class	Spring Break - No Class
	Week 10		
19-Mar	T	Aquaculture Genetics	CR Boat Knots
21-Mar	TH	Nutrition: Pellet and Live feeds	
	Week 11		
26-Mar	T	Exam Review	Cal Poly Humboldt Fish Biomass & Feeding Rates
28-Mar	TH	EXAM 2	
	Week 12		
2-Apr	T	Salmonid Aquaculture	Hog Island Oyster Tour
4-Apr	TH	Carp and Koi Aquaculture	
	Week13		
9-Apr	T	Sturgeon Aquaculture	No Lab: Weekend Field Trip The Fishery, Galt
11-Apr	TH	Catfish Aquaculture	
	Week 14		
16-Apr	T	Micro and Macro Aquaculture	CR Artemia/ Rotifer Culture
18-Apr	Th	Bivalve Aquaculture	
	Week15		
23-Apr	T	Tilapia Aquaculture	CR

25-Apr	TH	Crustaceans	Microscopes: Diseases
	Week 16		
30-Apr	T	Aquaculture Careers/Guest Lecture	Aqua Symposium
2-May	TH	Review Final Exam	
	Week 17		
7-May	T	Final Exam: 8:30-10:30AM	No Lab
9-May	TH	Finals Week	

Counseling

[Counseling & Advising](#) can assist students in need of academic advising and professional counseling services. Visit the Welcome Center in the lower level of the student services building Monday –Friday 9am – 4pm (during the semester, summer hours may vary).

Basic Needs Center

[The Basic Needs Center](#) provides for the health and safety of students by providing access to healthy food, financial resources, and referrals to safe and secure housing. Students can submit a request for services and information [here](#).

Contact info

Phone: 707-476-4153

Email: the-grove@redwoods.edu

Learning Resource Center

Learning Resource Center includes the following resources for students

- [Library Services](#) to promote information literacy and provide organized information resources.
- [Multicultural & Diversity Center](#)
- [Academic Support Center](#) – offers tutoring and test proctoring for CR students.
- [Student Tech Help](#) – provides students with assistance around a variety of tech problems.

EOPS

[Extended Opportunity Programs & Services \(EOPS\)](#)[Links to an external site.](#) provides services to eligible income disadvantaged students including: textbook awards, grants, career academic and personal counseling, transportation assistance, tutoring, laptop, calculator and textbook loans, priority registration, graduation cap and gown, workshops, and more!

TRiO Student Success Program

The TRiO Student Support Services Program provides eligible students with a variety of services including academic advising, career assessments, assistance with transfer, and peer mentoring. Students can apply for the program in [Eureka](#) or in [Del Norte](#).

Veterans Resource Center

The [Veteran's Resource Center](#) supports and facilitates academic success for Active Duty Military, Veterans and Dependents attending CR through relational advising, mentorship, transitional assistance, and coordination of military and Veteran-specific resources.

CalWORKS

CalWORKS – California Work Opportunity & Responsibility to Kids (CalWORKs). Provides supportive services to student parents with children under the age of 18, who are receiving cash assistance (TANF **benefits**), to become self-sufficient. Services include transportation assistance, basic student supplies, tutoring, priority registration, laptop and calculator loans, career, academic, and personal counseling, and more!

Spring 2024 Dates

January 12	Last day to register for classes (day before the first class meeting)
January 13	Classes begin
January 15	Martin Luther King, Jr.'s Birthday Holiday (District-wide closure)
January 19	Last day to add a class
January 26	Last day to drop without a "W" and receive a refund
January 29	Census Date (20% of class)
February 16	Lincoln's Birthday Holiday (District-wide closure)
February 19	President's Day Holiday (District-wide closure)
March 7	Last day to petition to graduate
March 29	Last day for student initiated withdrawal (62.5% of class)
March 29	Last day for faculty initiated withdrawal (62.5% of class)
March 11-16	Spring break (no classes)
May 4-10	Final Examinations
May 10	Last day to file for P/NP Option
May 10	Semester Ends
May 17	Grades due
May 24	Grades available

Drop Policy:

You may be dropped from the class if you miss 3 or more weeks of class participation, discussion, or assignments prior to the end of week 10.

Academic dishonesty

In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. In cases involving academic dishonesty, determination of the grade and of the student's status in the course is left primarily to the discretion of the faculty member. In such cases, where the instructor determines that a student has demonstrated academic dishonesty, the student may receive a failing grade for the assignment and/or exam and may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct ([AP 5500](#)) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the [College Catalog](#) and on the [College of the Redwoods website](#).

AI Use Class Policy

Recent advancements in generative artificial intelligence (AI) have made large language models such as ChatGPT and Google's Bard widely available. However, overuse of these tools in this class can undermine your learning and curtail the development of your critical and creative thinking skills. In addition, AI outputs are often unreliable and frequently subject to bias. For these reasons, the policy of this class is that

AI cannot be used at any point in the completion of class assignments, including discussion posts. Any or all of your assignment submissions and discussion posts may be screened by AI detection software, but the real penalty for AI misuse is that you will miss out on an opportunity to learn.

Disruptive behavior

Student behavior or speech that disrupts the instructional setting will not be tolerated. Disruptive conduct may include, but is not limited to: unwarranted interruptions; failure to adhere to instructor's directions; vulgar or obscene language; slurs or other forms of intimidation; and physically or verbally abusive behavior. In such cases where the instructor determines that a student has disrupted the educational process, a disruptive student may be temporarily removed from class. In addition, the student may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct ([AP 5500](#)) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the [College Catalog](#) and on the [College of the Redwoods website](#).

Inclusive Language in the Classroom

College of the Redwoods aspires to create a learning environment in which all people feel comfortable in contributing their perspectives to classroom discussions. It therefore encourages instructors and students to use language that is inclusive and respectful.

Canvas Information

Log into Canvas at [My CR Portal](#)

For help logging in to Canvas, visit [My CR Portal](#).

For help with Canvas once you're logged in, click on the Help icon on the left menu.

For tech help, email its@redwoods.edu or call 707-476-4160

Canvas online orientation workshop: [Canvas Student Orientation Course \(instructure.com\)](#)

Setting Your Preferred Name in Canvas

Students have the ability to have an alternate first name and pronouns to appear in Canvas. Contact [Admissions & Records](#) to request a change to your preferred first name and pronoun. Your Preferred Name will only be listed in Canvas. This does not change your legal name in our records. See the [Student Information Update form](#).

Emergency Procedures / Everbridge

College of the Redwoods has implemented an emergency alert system called Everbridge. In the event of an emergency on campus you will receive an alert through your personal email and/or phones. Registration is not necessary in order to receive emergency alerts. Check to make sure your contact information is up-to-date by logging into [WebAdvisor](#) and selecting 'Students' then 'Academic Profile' then 'Current Information Update.'

Please contact Public Safety at 707-476-4112 or security@redwoods.edu if you have any questions. For more information see the [Redwoods Public Safety](#).

In an emergency that requires an evacuation of the building anywhere in the District:

- Be aware of all marked exits from your area and building
- Once outside, move to the nearest evacuation point outside your building
- Keep streets and walkways clear for emergency vehicles and personnel

Do not leave campus, unless it has been deemed safe by the campus authorities.

To learn more about campus-specific Emergency Procedures, click on a title bar below, or click the down arrow to expand them all.

Del Norte Campus Emergency Procedures

Please review the [Crescent City campus emergency map](#) for campus evacuation sites, including the closest site to this classroom (posted by the exit of each room). For more information, see the [Redwoods Public Safety](#).

Klamath-Trinity Campus Emergency Procedures

Please review the responsibilities of, and procedures used by, the College of the Redwoods, Klamath-Trinity Instructional Site (KTIS) to communicate to faculty, staff, students and the general public during an emergency. It is the responsibility of College of the Redwoods, Klamath-Trinity Instructional Site (KTIS) to protect life and property from the effects of emergency situations within its own jurisdiction.

In the event of an emergency, communication shall be the responsibility of the district employees on scene:

1. Dial 911, to notify local agency support such as law enforcement or fire services.
2. If safe to do so, notify key administrators, departments, and personnel.
3. If safe to do so, personnel shall relay threat information, warnings, to ensure the school community is notified.
4. Contact 530-625-4821 to notify of situation.
5. Contact Hoopa Tribal Education Administration office 530-625-4413
6. Notify Public Safety 707-476-4111.

In the even of an emergency, the responsible district employee on the scene will:

1. Follow established procedures for the specific emergency as outlined in the College of the Redwoods Emergency Procedure Booklet.
2. Lock all doors and turn off lights if in lockdown due to an active shooter or similar emergency.
3. Close all window curtains.
4. Get all inside to safe location Kitchen area is best internal location.
5. If a police officer or higher official arrives, they will assume command.
6. Wait until notice of all is clear before unlocking doors.
7. If safe to do so, move to the nearest evacuation point outside building (Pooky's Park), directly behind the Hoopa Tribal Education Building.
8. Do not leave site, unless it has been deemed safe by the person in command. Student Support Services (required for online classes