

# AQUA-1: Intro to Aquaculture

## Course Information

**Semester & Year:** Fall 2024

**Course ID & Section #:** AQUA-1-V8390

**Instructors Name:** Jasmine Iniguez

**Day/Time of required meetings:** Late Start 09/07-12/20

ONLINE

**Course units:** 3

## 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](mailto:jasmine-iniguez@redwoods.edu)

## Catalog Description

This course provides students with a general understanding of aquaculture: the science and business of culturing and rearing aquatic organisms. Students learn the broad history and current state of the industry. The course will include aquaculture production systems for breeding, growing, and harvesting of various species cultured locally and globally, including finfish, bivalves, crustaceans, and seaweeds. Students explore issues of water quality, nutrition, disease prevention, environmental impacts, and sustainability. This course also covers the current state of aquaculture as an industry, its economic impacts, and its role in global food production.

## Course Student Learning Outcomes

1. Identify different systems and techniques for breeding, growing, and harvesting various aquaculture species including strategies for prevention and water quality optimization
2. Discuss past and present issues in aquaculture, analyze legal, social, economics, and environmental context in which the industry operates.

## Prerequisites/corequisites/ recommended preparation

None

## Required Course Textbook

**Aquaculture: Farming Aquatic Animals and Plants, 3<sup>rd</sup> Edition**

Author: John S. Lucas & Paul C. Southgate

Publisher: Wiley-Blackwell  
ISBN: 9781119230861  
The ebook is made available on Canvas

## **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&pq-origsite=prim>

### **Supplemental References:**

Southern Regional Aquaculture Center Fact Sheets: <https://srac.tamu.edu/>

## **Evaluation & Grading Policy**

### **Grading:**

<b>Course Requirements</b>	<b>Percent of Total Grade</b>	<b>Due Date</b>
Exam 1	20	Week Sept 30 – Oct 6
Exam 2	20	Week Nov 4 – 10
Final Exam	20	Week Dec 16-20
Research Paper	15	Friday, Dec 6
Quizzes	10	Sundays
Discussion Boards	15	Sundays

### **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.* 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. Be mindful that Discussion Boards and Quizzes will *close* on the scheduled due date at midnight.

## 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 be repeated, 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.

## Netiquette

While we are not communicating face-to-face, please remember to be respectful. This includes opinions and thoughts that are made by your peers on the discussion boards. We should all be supportive and encouraging to the difference of opinion of others – as we can grow from this! We should all support each other in the course to achieve our goals and be successful. An online classroom will still be a safe place for your peers just as much as an in-person setting should be.

## Discussion Boards

Each Monday you will have a new weekly discussion board to post on. You will have to read or watch the content that is provided on the discussion board and answer the discussion board questions. The discussion posts must be done by **Friday of the given week at 11:59pm**. You will then need to respond to another classmate's post on the discussion board. These **responses post must be done by Sunday of the given week at 11:59 pm**. Your initial post will be graded by the thoughtful, detail, and effort that was taken into the discussion and your responses post will be graded by effort and detail. These discussion boards are worth **15% of your grade**.

- **Initial post:** Must be done on Fridays. You will be graded on the following: detail, insight, contribution, originality, and thoughtfulness.
- **Response Post:** Due on Sundays at midnight. Please be engaged with your peers. Posts with text verbiage such as "OMG and LOL" will not be accepted. Please try to engage and avoid posts such as "Nice work" or "That makes sense, thanks for sharing". These posts with little engagement and thoughtfulness will not receive credit

## Quizzes:

Quizzes will be made available on Canvas that will have questions corresponding with the given week's lectures. Please refer to textbook readings for further clarification on the content. **When you do have a quiz, they will be due 11:59pm on that Sunday of the week.** You will have two attempts at each quiz, and the highest grade is kept. Quizzes are worth 10% of your grade!

## Assignments:

You will have 1 main assignment in this class.

## Aquaculture Research Paper and Symposium:

Students are required to write a literature review research paper describing one cultured aquaculture species of their choice.

### **DUE DATES:**

**Friday, Sept 13:** Topic identified on discussion board

**Friday, Oct 11:** Outline

**Friday, Nov 15:** Rough Draft

**Friday, Dec 6:** Final Draft

### **FORMAT:**

- MLA Format
- Submit in Word document NOT pdf so I can make suggestions via track changes
- Typed with 12- point Font in Times New Roman
- Double spaced
- 4-6 pages in Length
- 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.

### **OUTLINE:**

- I. Introduction
- II. Life History
- III. Water Quality Requirements
- IV. Reproduction and Larval Culture
- V. Production Methods (Techniques and Systems used)
- VI. Nutritional Requirements
- VII. Disease
- VIII. Future Directions for the Industry
- IX. References

**References:** 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.

## Tentative Course Schedule

<b>AQUA-1: Intro to Aquaculture</b>				
<b>Module</b>	<b>Week 3</b>	<b>Topic</b>	<b>Textbook</b>	<b>Assignment</b>
1	Sept 9 –15	Course Overview Intro to Aquaculture/Historical	Tidwell Ch. 2	DB: 1 Quiz 1
<b>Module</b>	<b>Week 4</b>			
2	Sept 16 –22	Functions and Characteristics of Aquaculture Systems	Tidwell, Ch. 3	DB: 2

			Lucas et al. Ch. 3	Quiz 2
<b>Module</b>	<b>Week 5</b>			
3	Sept 23 – 29	Water Sources Water Quality	Tidwell, Ch.3 Lucas et al., Ch.4	DB: 3 Quiz 3
<b>Module</b>	<b>Week 6</b>			
<b>4</b>	<b>Sept 30 – Oct 6</b>	<b>EXAM 1</b>		
<b>Module</b>	<b>Week 7</b>			
5	Oct 7 - 13	Ponds & Raceways Aquaponics	Tidwell, Ch. 10	DB: 4 Quiz 4
<b>Module 8</b>	<b>Week 8</b>			
6	Oct 14 – 20	Cages and Offshore Net Pens RAS, Recirculating Aquaculture	Tidwell, Ch. 6 & 7 Tidwell, Ch. 11	DB: 5 Quiz 5
<b>Module 9</b>	<b>Week 9</b>			
7	Oct 21 – 27	Integrated Multi-Trophic Aquaculture	Lucas et al. Ch. 8 & 15	DB: 6 Quiz 6
<b>Module 10</b>	<b>Week 10</b>			
8	Oct 28 – Nov 3	Biofloc-Based Aquaculture Shrimp Production	Tidwell Ch. 12	DB: 7 Quiz 7
<b>Module 11</b>	<b>Week 11</b>			
<b>9</b>	<b>Nov 4 – 10</b>	<b>EXAM 2</b>		
<b>Module 12</b>	<b>Week 12</b>			
10	Nov 11 – 24	Bivalve Aquaculture Seaweed Production	Lucas et al. Ch. 24 & Ch. 6	DB: 8 Quiz 8
<b>Module 13</b>	<b>Week 13</b>			
11	Nov 18 – 24	Fish Reproduction	Lucas et al. Ch. 6	DB: 9 Quiz 9
<b>Module 14</b>	<b>Week 14</b>			
<b>12</b>	<b>Nov 25 – Dec 1</b>	<b>FALL BREAK</b>		
<b>Module 15</b>	<b>Week 15</b>			
13	Dec 2 - 8	Fish Feeding Practices & Nutrition	Lucas et al. Ch. 8	DB: 10 Quiz 10
<b>Module 16</b>	<b>Week 16</b>			
14	Dec 9 – 15	Fish Health and Disease	Lucas et al, Ch.10	DB: 11 Quiz 11
<b>Module 17</b>	<b>Week 17</b>			
<b>15</b>	<b>Dec 16 – 20</b>	<b>FINAL EXAM</b>		

**\*\* THIS IS A TENTATIVE SCHEDULE AND IT IS SUBJECT TO CHANGE.**

## Fall 2024 Dates

Date	To Remember
August 23	Last day to register for classes (day before the first-class meeting)
August 24	Classes begin
August 30	Last day to add a class
September 2	Labor Day Holiday (district wide closure)
September 6	Last Day to Drop & Receive a Refund
September 8	Last Day to Drop w/out a "W"
September 9	Census Date (20% of class)
October 31	Last Day to Petition to Graduate & Petition for Certificate
November 1	Last Day for Student/Faculty Withdrawal
November 11	Veteran's Day Holiday (District Wide Closure)
November 25-26	Fall Break (No Classes)
November 27-29	Thanksgiving Holiday (District Wide Closure)
December 14-20	Final Examinations
December 20	Last Day to File P/NP Option
December 20	Semester Ends
December 27	Grades Due
January 3	Grades Available for Transcript Release

## 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 (such as 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 (such as audio books or 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 [Student Accessibility Support Services \(SASS\)](#). If you are unsure whether you qualify, please contact SASS for a consultation: [sass@redwoods.edu](mailto:sass@redwoods.edu).

### SASS office locations and phone numbers

#### **Eureka campus**

- Phone: 707-476-4280
- Location: Student Services Building, first floor

#### **Del Norte campus**

- Phone: 707-465-2324
- Location: Main Building, next to the library

#### **Klamath-Trinity campus**

- Phone: 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 Learning Support](#)

Tech support, laptop loans, guides to using Canvas, installing Office 365 for free, and more.

### [Library Articles & Databases](#)

Find the best library databases for your research.

### [Online Tutoring Resources](#)

Participate in tutoring over Zoom.

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 Klamath-Trinity Office for specific information about student support services at 530-625-4821.

## **Community College Student Health and Wellness**

### **National Suicide Prevention Lifeline**

If you are in distress or are with someone at risk right now, call or text the National Suicide Prevention Lifeline.

#### **Call the National Suicide Prevention Lifeline**

1-800-273-TALK (8255)

#### **Text the National Suicide Prevention Lifeline**

741-741

## Timely Care

When you're not feeling well physically or distressed mentally, Timely Care can offer the help you're looking for in just a few quick taps. Students can schedule an appointment anytime via phone, video, and chat. [Log in or set up an account with Timely Care](#).

## Mental Health Counseling

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

- Text: 707-496-2856
- Email: [shawnabmft@gmail.com](mailto:shawnabmft@gmail.com)
- Fax and voicemail: 707-237-2318

## Wellness Central

Resources, tools, and trainings 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](#).

## Counseling

[Counseling and Advising](#) can assist students in need of academic advising and professional counseling services. Call, email or stop by one of our offices to make an appointment!

### Counseling and Advising office locations and contact info

#### Eureka campus

- Phone: 707-476-4150
- Location: Student Services Building, first floor
- Email: [counseling@redwood.edu](mailto:counseling@redwood.edu)
- Hours: Monday through Friday, 9am to 4pm. Summer hours may vary

#### Del Norte campus

- Phone: 707-476-2300
- Location: Main Building, next to the library
- Hours: Summer hours may vary

#### Klamath-Trinity campus

- Phone: 530-625-4821
- Email: [KT-staff@redwoods.edu](mailto:KT-staff@redwoods.edu)
- Hours: 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. [Submit a request for services and information](#).

#### Basic Needs Center contact info

- Phone: 707-476-4153
- Email: [the-grove@redwoods.edu](mailto:the-grove@redwoods.edu)



## Learning Resource Center

The Learning Resource Center includes the following resources for students:

### Library Services

[Library Services](#) promotes information literacy and provides organized information resources.

### Multicultural and Equity Center (MCE)

The [Multicultural and Equity Center](#) is a dynamic and inclusive place that supports all students in their academic and personal journeys at the college. We do this by creating community, home away from home, and a safe place for cultural expression, cross-cultural learning, access to college and dignity resources, and social justice work opportunities. The MEC is committed to retention and student success by offering activities related to leadership development, student connectedness and student equity. We are a student-centered program that fosters respect for all people.

### Academic Support Center

The [Academic Support Center](#) offers tutoring and test proctoring for CR students.

### Student Tech Help

[Student Tech Help](#) provides students with assistance around a variety of tech problems.

## Extended Opportunity Programs and Services (EOPS)

[Extended Opportunity Programs and Services](#) (EOPS) 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 with the [Eureka TRiO office](#) or the [Del Norte TRiO office](#).

## 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

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!

## 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 [2023-2024 College Catalog](#) and [CR Board and Administrative Policies](#).

## 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. Sometimes, using these tools appropriately can help us overcome barriers and allow us to focus on deeper learning. However, overuse of these tools can undermine the development of our critical and creative thinking skills. In addition, AI outputs are often unreliable and frequently subject to bias. For these reasons, it is sometimes appropriate and sometimes inappropriate to use generative AI in the completion of assignments or in discussion posts. For this class, please see the specific assignment instructions for guidance on how and when generative AI tools may be used appropriately as we're working on and learning from a particular assignment. Also, please keep in mind that you are responsible for anything you submit; please carefully review all AI-generated outputs, screening them for accuracy, bias, appropriateness, and fidelity to your perspective.

## 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. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the [2023-2024 College Catalog](#) and [CR Board and Administrative Policies](#).

## 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 and general tech help, visit [Student Technical Support](#)
- Once you're logged in to Canvas, you click on the Help icon on the left menu
- Canvas online orientation workshop: [Canvas Student Orientation Course](#)

### Setting Your Preferred Name and Pronouns in Canvas

Students have the ability to display personal pronouns and an alternate first name in Canvas. Students may change their pronouns on their own in Canvas (Account :: Settings :: Edit Settings). To request a

change to your preferred list name, contact [Admissions & Records](#). 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 \(pdf\)](#).

## 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](mailto:security@redwoods.edu) if you have any questions. For more information visit [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, visit [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 event 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.