

NOTE to prospective students: This syllabus is intended to provide students who are considering taking this course an idea of what they will be learning. A more detailed syllabus will be available on the course Blackboard site for enrolled students and may be more current than this sample syllabus.

FW 497/597 Aquaculture

Course Instructors: Chris Langdon: chris.langdon@oregonstate.edu
Evan Durland: durlande@onid.oregonstate.edu

Office Hours: by appointment, at HMSC

Overview

Aquaculture, the farming of aquatic plants and animals is an ancient form of agriculture that has seen a meteoric rise in the past 30 years. Today, aquaculture accounts for >50% of all seafood eaten in the US. The vast majority of aquaculture products come from Asia; seafood imports in America amount to the second largest trade deficit behind only Oil. Despite the imbalance, domestic aquaculture is also the fastest growing sector of agriculture. This burgeoning industry will drastically change the way we conceptualize marine resources in the coming decades and the next generation of regulators, farms and farmers will dictate whether this industry is a burden or a boon to aquatic ecosystems.

FW497/597 *Aquaculture* will introduce students to this dynamic and diverse industry. Course material will provide broad coverage of the major topics in fish and shellfish farming including: biology, nutrition, diseases, system design, water quality and environmental considerations. This course will utilize diverse web resources to deliver content. Student participation will be assessed by weekly quizzes, short essays and thoughtful contribution to discussion forums. A course-long project will be assigned where students adapt concepts learned in class to a model organism of their choosing. This “Species Profile” paper will be crafted and revised throughout the term culminating in a final draft that will contribute significantly to the final grade. Weekly participation is required from all students and grasp of concepts and materials will be evaluated by a comprehensive final at the end of the course.

Prerequisites:

One year of introductory biology and chemistry courses is strongly encouraged.

Credits: This course combines approximately 90 hours of instruction, online activities, and assignments for 3 credits.

Literature sources:

A large assortment of literature will be linked to and attached within the weekly unit folders. A large portion of these journals and articles will be required reading to complement the lectures and videos. There will also be a large list of “supplemental reading” that will be made available to students to provide background information. The class will follow along closely with the following textbook:

Aquaculture. Farming aquatic animals and plants. 2nd edition, 2012. Lucas, J. S. and P.C. Southgate. Blackwell Publishing. 629 pp.

Textbook: NOTE: For textbook accuracy, please always check the textbook list at the OSU Bookstore website (<http://osubeaverstore.com/Academics/>). Sample syllabi may not have the most up-to-date information.

Students can also click the OSU Beaver Store link associated with the FW497 or 597 course information in the [Ecampus schedule of classes](#) for course textbook information and ordering.

Learner Outcomes:

By the end of this course students should be able to

- **Describe** aquaculture as a globally connected industry and how it fits in with management programs for aquatic resources
- **Evaluate** diverse aquaculture operations from standpoints of economic and biologic efficiency, site suitability and potential environmental impacts.
- **Recognize** different shareholder viewpoints with aquaculture operations and rationalize compromises.
- **Demonstrate** an applied knowledge of the interplay between the mechanical, biologic and chemical components of aquaculture operations and aquatic animal husbandry

Grading:

40% Species profile or position paper (200 pts)
20% Online discussion participation (100 pts)
10% Short essays (50 pts)
10% Quizzes (50 pts)
20% Final exam (100 pts)

Total : 500 pts

Your discussion contributions will be graded as follows:

Ten points for the originality and quality of your discussion points

Five points for interaction/discourse with other students

Two point for polite and considerate participation

Two point for the composition of your arguments (grammar, spelling, etc)

One point for incorporating outside resources (links etc.)

Totaling a possible 20 points per discussion

Technical Assistance

If you experience computer difficulties, need help downloading a browser or plug-in, assistance logging into the course, or if you experience any errors or problems while in your online course, contact the OSU Help Desk for assistance. You can call (541) 737-3474, email osuhelpdesk@oregonstate.edu or visit the [OSU Computer Helpdesk](#) online.

Students with Disabilities

Accommodations are Collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 541-737-4097

Expectations for Student Conduct

Student conduct is governed by the university's policies, as explained in the [Office of Student Conduct: Information and Regulations](#).

Conduct in this Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the [university's regulations regarding civility](#).

Tutoring

[NetTutor](#) is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Blackboard class by clicking on the Tools button in your course menu.

OSU Student Evaluation of Teaching

Course evaluation results are extremely important and are used to help me improve this course and the learning experience of future students. Results from the 19 multiple choice questions are tabulated anonymously and go directly to instructors and department heads. Student comments on the open-ended questions are compiled and confidentially forwarded to each instructor, per OSU procedures. The online Student Evaluation of Teaching form will be available toward the end of each term, and you will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. You will log in to "Student Online Services" to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted

Plagiarism

Janet Webster has put together a nice web page on plagiarism. The page has links to other resources both here at OSU and elsewhere (properly cited, of course) that help

students understand the issues surrounding plagiarism and some examples of how to properly cite sources.

The link is: <http://osulibrary.oregonstate.edu/instruction/classign/Plagiarism.html>.

Schedule: see Blackboard syllabus for specific dates

Week	Date	Topic	Assignment	Species Profile Chapter
1		Introduction and general concepts	Essay #1	Choose species
2		Aquaculture Systems and Equipment	Quiz #1	-
3		Water: Physical and Chemical Properties	Essay #2	Basic Biology and Status
4		Water: Biological Interactions and Management	Quiz #2	-
5		Nutrition: requirements and natural feeds	Essay# 3	Environment, water quality and systems
6		Nutrition: artificial feeds and feeding	Quiz #3	-
7		Growth and reproduction	Essay #4	Nutrition, growth and production
8		Genetics and stock improvement	Quiz #4	-
9		Diseases	Quiz #5	Environment, sustainability and future
10		Frontiers of Aquaculture	Essay #5	FINAL PROJECT

Final Exam TBD

Graduate level (FW597) expectations:

Graduate students will be expected to either lead a week's discussion based upon a controversial current topic in aquaculture or (if graduate students >4-5) write a position paper on this topic citing popular and scientific publications to support their stance.

Grading Rubric for “Species Profile” Paper:

Criteria	Poor (0-60%)	Good (61-80%)	Excellent (81-100%)
Format/Layout (30pts)	Follows requirements poorly, unkempt formatting	Follows requirements, some sloppiness but good overall	Polished and neat, sections crisp, tables and figures fit nicely within text
Content/Information (100pts)	Information is lacking, detail is absent, vague overall	Fairly complete, all the bases covered but gaps remain. Some questions remain unanswered	Comprehensive background and review of the species and its culture practices. No stone unturned.
Quality of Writing (40pts)	Choppy, fragmented style, grammatical errors prevalent. Confusing at times	Well strung together, some transitions still awkward/abrupt. Some grammar problems but readable	Fluid, concise and well-constructed. Sections flow naturally into one another and interest is held throughout.
References and use (30pts)	References lacking and/or from inappropriate sources	Assortment of references, some from scientific publications, many not.	Comprehensive list of references, from scientific journals and reputable websites
			Total: 200 points