

Date: Spring 2006

- I. Course Name:** Introduction to Aquaculture
Course Prefix and Number: CON 214
Credit Hours and Contact Hours: 3 credit hours – 3 contact hours
Catalog Description:

Fisheries Management stresses the relationship between humans, fish and their environments. Students are introduced to the principles of fishery management including, history, theory, and management strategies. The importance of habitat management, and population dynamics and their interactions is explored. Management strategies will be introduced through case studies of selected fisheries.

II. Course Outcomes and Objectives

Learning Outcomes:

This course is designed to provide practical experience in the field of aquaculture. Emphasis is on culture methods used at the Fish Culture and Aquatic Research Center. Students will:

- Be familiar with various fish culture methods
- Determine specific species requirements for recirculation systems
- Demonstrate the ability to design a recirculation system

Relationship to Academic programs and curriculum:

Introduction to aquaculture is required of students matriculated in the A.A.S. Fisheries Science degree program. It is an introductory course designed to expose students to aquaculture techniques.

College competencies addressed by the course:

Students will be required to conduct a literature search on selected aquaculture topics and present their findings in a paper and oral presentation. Students will be aware of the global implications of aquaculture. Problem solving skills will be advanced through development of species specific aquaculture systems. Students will handle all live specimens in an ethical manner.

III. Methods of Instruction

Types of Course materials:

Text book: Fish Hatchery Management second edition 2001. Wedmemeyer. ISBN 1-888569-26-3

Reference materials: Re-circulating Aquaculture Technology Workshop Manual. NC State 2000 Elsevier Science B.V.

Re-circulation Aquaculture Systems By M.B. Timmons, Cayuga Aqua Ventures 2001 ISBN 0-9712646-0-0

Additional technical sources: American Fisheries Publications, Progressive Fish Culturist, and N.A. Journal of Aquaculture.

Network resources: AquaNIC, AquaNET

Methods of instruction:

- Lecture, demonstration and hands-on projects
- Independent and group research

Assessment measures:

Upon completion of the course students will develop an understanding of local and worldwide uses of aquaculture. Students will identify species specific requirements for basics aquaculture applications. Students will demonstrate an understanding of the design and assembly of basic recirculation and biofiltration systems.

Methods of Evaluation:

- Quizzes
- Vocabulary testing
- Exams
- Research paper
- Oral presentation
- Group project

IV. General Outline of Topics covered

1. Introduction of the history and current state of Aquaculture throughout the world.
2. Types of Aquaculture- extensive and intensive culture systems.
3. Introduction to aquaculture literature and electronic media references.
4. Operation, design, equipment use, data collection, fish handling and stocking methods.
5. Walleye fingerling harvest
6. Culture system: water quality requirements and control.
7. Environmental requirements and life histories of selected aquaculture species
8. Health, nutrition and disease recognition
9. Intensive Culture system design
10. Culture Facility- Extensive single-pass field trip.
11. Re-circulation Aquaculture Systems (RAS) components.
12. RAS components overview continued.
13. RAS project, system design and operation paper discussion
14. RAS Culture Facility- field trip to selected aquaculture facility.
15. Projects completion, evaluation, and discussion