Course Syllabus

Department: Environmental Conservation

Date: October 19, 2012

I. Course Prefix and Number: CON 219

Course Name: Introduction to Aquaculture

Credit Hours and Contact Hours: 3 credit hours and 3 contact hours
Catalog Description including pre- and co-requisites: supporting data required for grade prerequisite of ‘C’ or higher.

This course is designed as an introduction to aquaculture practices and techniques. Students are exposed to both the historic and current status of aquaculture. Emphasis is placed on culture methods, fish handling, and data collection techniques. Walleye cultured at the FLCC-Muller Field Station, will be collected and stocked. Trips to other culture facilities will expose students to different culturing techniques. Factors of water quality, fish health and nutrition, system designs, and advances in Recirculation Aquaculture Systems (RAS) will be investigated.

Relationship to Academic Programs and Curriculum including SUNY Gen Ed designation if applicable:

This course is may be used as an elective for any of the Conservation degrees or a general elective for other degrees.

II. Course Student Learning Outcomes: State the student learning outcome(s) for the course (e.g. Student will be able to identify…)

Students will:
- Use the basic principles of aquaculture and all of its relevant components (e.g. water quality, feeding, system design, etc.) as a guideline for their tank culture project
- Compare and contrast various systems currently used by private facilities for aquaculture
- Demonstrate the ability to design, construct and operate a recirculation system with live fish as part of their tank culture project

College Learning Outcomes Addressed by the Course: (check each College Learning Outcome addressed by the Student Learning Outcomes)

- X writing
- ☐ oral communications
- ☐ reading
- X mathematics
- ☐ critical thinking
- ☐ computer literacy
- X ethics/values
- ☐ citizenship
- X global concerns
- ☐ information resources
III. Assessment Measures (Summarize how the college and student learning outcomes will be assessed): For each identified outcome checked, please provide the specific assessment measure.

<table>
<thead>
<tr>
<th>List identified College Learning Outcomes(s)</th>
<th>Specific assessment measure(s)</th>
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</thead>
<tbody>
<tr>
<td>Writing</td>
<td>Students will generate monthly reports on their tank performance. The reports must follow a stringent format and will be edited and revised prior to receiving a grade</td>
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<tr>
<td>Mathematics</td>
<td>Students must use arithmetic, algebra, and geometry to accurately measure water quality parameters, calculate feed conversion ratios, and treatment concentrations that will be recorded on data sheets and compiled for their monthly reports. Students are required to hand in their data sheets as part of their tank project grade</td>
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<tr>
<td>Ethics/Values</td>
<td>Students will be providing optimal living conditions within their tank systems for live organisms in accordance to accepted protocols. Students will receive a grade based on their husbandry skills during their tank project</td>
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<tr>
<td>Global Concerns</td>
<td>Recirculating aquaculture and the technologies involved can be a sustainable form of agriculture. Successful completion of their tank project implies the skills obtained could be used for a sustainable private enterprise</td>
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IV. Instructional Materials and Methods

Types of Course Materials:

Text book, handouts and lab equipment

Methods of Instruction (e.g. Lecture, Lab, Seminar …):

Lecture, hands-on aquaculture with live specimens, and field trips to other facilities

V. 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. Tank and biofilter construction
4. Biofiltration and the nitrification process
5. Feeding and nutrition
6. Fish health management
7. The business of aquaculture
8. Field trips to various aquaculture facilities