Course Syllabus

Department: Environmental Conservation and Horticulture

Date: February 2012

I. Course Prefix and Number: CON 229

   Course Name: Stream Ecology and Monitoring

   Credit Hours and Contact Hours: 3 credit hours – 3 contact hours

   Catalog Description including pre- and co-requisites:
   This course provides students with an introduction to hydrology, stream ecology and sampling design. Students will intensively study aquatic macro-invertebrate identification. The students will learn through field and laboratory experiences with data collected, analysis, and production of a final professional report. Prerequisites: MAT 121, CSC 134 CSC 135.

II. Course Outcomes and Objectives

   Student Learning Outcomes:
   The students will:
   - Demonstrate knowledge of hydrology and stream ecology (professional competency).
   - Design and implement a sampling plan (professional competency).
   - Identify aquatic organisms (professional competency).
   - Demonstrate proper use of stream sampling equipment (professional competency).
   - Analyze and interpret data (mathematics, critical thinking).
   - Write a professional report (writing, reading, information resources, computer literacy).
   - Comprehend, interpret, analyze and evaluate college level materials (reading).

   Relationship to Academic Programs and Curriculum:
   Stream monitoring is a required course for students matriculated in the AAS Fisheries Science degree program. This course is designed for students in their second year. It builds upon concepts and skills acquired in required courses taken during the first three semesters.

   College Learning Outcomes Addressed by the Course:
   X writing  X computer literacy
   __ oral communications  __ ethics/values
   X reading  __ citizenship
   X mathematics  __ global concerns
   X critical thinking  X information resources
III. Instructional Materials and Methods

Types of Course Materials:


Equipment: Microscopes and stream sampling equipment.

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

- Discussion - Lecture
- Reading assignments
- Audio-visual materials
- Quizzes
- Field and laboratory exercises
- Several revisions of a technical report

IV. Assessment Measures (Summarize how the college and student learning outcomes will be assessed):

Student understanding of hydrology and stream ecology concepts will be assessed using written quizzes and exams. Professional competency regarding equipment use and aquatic organism identification will be assessed using final practical exam.

Writing, reading, mathematics, critical thinking, computer literacy and information resources competencies will be assessed using a stream monitoring project and technical report.

V. General Outline of Topics Covered:

- Introduction: Objectives and expectations
- Hydrology
- Stream ecology
- Sampling Design Protocol
- Use of Sampling Equipment
- Collecting and preserving specimens
- Aquatic invertebrate identification
- Data analyses/interpretation
- Writing reports in accordance with governmental agency guidelines