Certificate Assessment Plan: Sustainable Land Resource and Nutrient Management 2012-2013

Institutional Assessment
Timothy S. Brophy, Director

Office of the Provost

University of Florida

Institutional Assessment

Continuous Quality Enhancement Series

Sustainable Land Resource and Nutrient Management

College of Agricultural and Life Sciences

George Hochmuth; hoch@ufl.edu

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A. Rationale

Water and agrichemicals, including fertilizers, in crop production are major economic inputs to agriculture and a potential cause of ground and surface water pollution. Training future scientists and agricultural resource managers to protect land and water resources and to practice sustainable crop production is one of the primary missions of the Soil and Water Science Department, and of the discipline in general. Recent offerings of the courses in the Sustainable Land Resource and Nutrient Management graduate certificate program have included students employed in state and federal agencies and private industry who would be well served by such a certificate program. This certificate provides added value for student through increased and timely training in managing agricultural land water and nutrient inputs. The information allows these students to stay abreast of new technologies, best management practices, based on new science.

B. Mission

The Soil and Water Science Department's (SWSD) programs are designed to meet the changing needs of our clientele at state, national, and international levels. To meet new challenges and explore new opportunities, the SWSD's research, teaching, and extension programs are focused in five areas, with broader implication to water quality, carbon sequestration, greenhouse gases, and climate change:

- Nutrient, Pesticide, and Waste Management
- Soil, Water, and Aquifer Remediation
- Carbon Dynamics and Ecosystem Services
- Landscape Analysis and Modeling
- Wetlands and Aquatic Ecosystems

The Sustainable Land Resource and Nutrient Management graduate certificate supports the mission of the Department to provide support for the five departmental thrust areas listed above. The Sustainable Land Resource and Nutrient Management graduate certificate program supports the missions of the college and university to serve the nation's and state's critical needs by contributing to a well-qualified and broadly diverse citizenry, leadership and workforce.

C. Student Learning Outcomes (SLOs)

1. Analyze data to describe the role of soil and water in sustainable land resource and management as related to sustainable crop productivity and natural resource protection.

2. Calculate nutrient budgets and describe fate, transport, and management of major plant nutrients in root zone of soils.

3. Evaluate how various land uses and nutrient management practices affect water quality and identify and describe best management practices to protect water quality.

D. Assessment Timeline for Certificates

Sustainable Land Resource and Nutrient Management College of Agricultural and Life Sciences

Assessment of SLOs will be done using a competency exam upon completion of the required number of course credits.

Courses SLOs	Competency Exam
#1	X
#2	X
#3	X

E. Assessment Cycle Chart for Certificates

Sustainable Land Resource and Nutrient Management College of Agricultural and Life Sciences

Analysis and Interpretation: May – June annually
Improvement Actions: Completed by August 1 of each year
Dissemination: Completed by September 1 of each year

Year SLOs	12-13	13-14	14-15	15-16
#1	X	X	X	X
#2	X	X	X	X
#3	X	X	X	X

F. Methods and Procedures

Program assessment will use a mixture of direct and indirect assessments.

Direct:
Instructors of core courses in the certificate program will submit a minimum of 10 questions each that will test student's competency for the SLO's associated with these courses. We will use a mixture of question types for the exams (essay, multiple-choice, matching, definitions, etc.). Exams at a minimum will contain essay questions that challenge the student's ability to synthesize and apply material learned from the courses. These questions will be compiled into a single on-line examination. Students will be required to score a minimum of 85% correct to pass the exam. The exam may be taken multiple times if necessary.

Example of a competency exam question: Please name and fully describe three best management practices for nitrogen fertilization, of vegetables and explain what qualifies each practice as a BMP?

Indirect:
Certificate enrollment and completion data, student awards, and surveys of student satisfaction with the certificate program will be compiled and used to assess the program.

G. Assessment Oversight

Name	Department Affiliation	Email Address	Phone Number
George Hochmuth	Soil and Water Science	hoch@ufl.edu	352-294-3114
Andrew Ogram, Graduate Coordinator	Soil and Water Science	aogram@ufl.edu	352-294-3138
Ramesh Reddy, Chair	Soil and Water Science	krr@ufl.edu	352-294-3154