

**M.S. in Soil and Water Science  
Academic Assessment Plan  
2012-2013**

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*Office of the Provost*

*University of  
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*Institutional  
Assessment*

*Continuous Quality  
Enhancement*

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# 2012-2013 Academic Assessment Plan for M.S. in Soil and Water Science

College of Agricultural and Life Sciences

## A. Mission

The mission of the Soil and Water Science Department (SWSD) is to provide scientific leadership of the highest level in research, teaching, and extension for soil, water, and environmental sciences. By discovering new scientific knowledge and imparting that knowledge to fellow scientists, students, and citizens, the Department intends to assist in the resolution of soil and water issues related to agriculture and natural resources in Florida, the nation, and the world.

The graduate program in Soil and Water Science 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 through graduate education and to expand our understanding of the natural world, the intellect and the senses through graduate student research.

## B. Student Learning Outcomes and Assessment Measures

SLO	Student Learning Outcome	Assessment Method	Degree Delivery
Knowledge	Describe and explain theories and concepts in soil and water sciences.	Evaluation of the thesis or major paper completed in SLS 6905 by non-thesis students by the Supervisory Committee using a faculty-developed rubric.	Both
Skills	Apply, analyze, and synthesize content knowledge by identifying component parts, relationships and ideas.	1) Assessment of lab activities and selected course assignments using a faculty-developed rubric; 2) Completion of a comprehensive examination by non-thesis students.	Both

Professional Behavior	Display ethical behaviors, cultural sensitivity, professional conduct and effective communication.	1) Student behavior is consistent with the UF Honor Code and is evaluated by the Supervisory Committee. 2) Faculty observations of behavior and practices in classes, meetings and seminars; in the conduct of scholarly work and during all examinations. These observations will be shared with the Supervisory Committee and evaluated using a faculty-developed rubric.	Both
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### C. Research

Students in the Soil and Water Science M.S. program are expected to conduct a specific and focused research project under the direction of the chair of their supervisory committee and with assistance from the supervisory committee, and to produce a thesis describing the research. The research is expected to follow the scientific method and would ideally result in at least one publication in a peer-reviewed journal. The thesis will include a comprehensive literature review, and the results, data analysis, and defensible conclusions based on the data. The thesis research should provide training for the student in the methods, data analysis, and writing expected in the subdiscipline of soil and water science that the project is focused around. During the final semester of the thesis program, the student is required to defend the thesis in an oral examination before the advisory committee, and to complete a seminar course during which the student will present results of the thesis in a departmental seminar. The oral defense will ensure that the quality of the thesis meets the expectations of the department and university. The seminar course assists the student in preparation of the department seminar and provides critical feedback prior to the seminar.

Students in the Distance Education M.S. (Environmental Science Track) program are not required to conduct a laboratory or field based research project. They are required, however, to submit a Major Paper in lieu of a thesis on a focused research topic that is approved by the student's advisory committee. The Major Paper is similar to a M.S. thesis, but much smaller in scope. For the Major Paper, a student demonstrates knowledge and understanding of a selected topic in the soil, water or environmental science discipline. The student is required to pass a written comprehensive or oral exam administered by the advisory committee no more than six months before the degree is to be conferred. This exam is comprehensive covering all aspects of soil, water, and environmental sciences. Students prepare for this exam through course work (SWSD) and studying of standard textbooks (such as Brady N.C. and R.R. Weil, 2007. *The Nature and Properties of Soils*, Prentice Hall, New Jersey). In the exam the student demonstrates proficiency in the following categories: knowledge, comprehension, application, analysis, synthesis, evaluation, and creation.

## D. Assessment Timeline

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Assessment SLOs	Thesis or Non-Thesis Paper	Lab Activities	Comprehensive Exam	Annual Evaluations
<b>Knowledge</b>				
#1	X			
<b>Skills</b>				
#3		X	X	
<b>Professional Behavior</b>				
#5				X

## E. Assessment Cycle

Assessment Cycle for:

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Analysis and Interpretation:

May 1 of each year

Program Modifications:

Completed by July 1 of each year

Dissemination:

Completed by August 1 of each year

SLOs	Year	12-13	13-14	14-15	15-16
<b>Content Knowledge</b>					
#1		X	X	X	X
<b>Skills</b>					
#2		X	X	X	X
<b>Professional Behavior</b>					
#3		X	X	X	X

## F. Measurement Tools

Chairs of student’s advisory committees will provide the SWSD Student Affairs Specialist with assessment of the MS-thesis or non-thesis major paper for mastery of SLO #1. The supervisory committee chair will also report results (pass/fail) of final examinations within one week of examination, who will collate the information throughout the year. This information will be transmitted to the SWSD Teaching Committee by July 1 of each year. The chairs of advisory committees conduct annual reviews of graduate students. Results of annual evaluations are maintained by the SWSD Student Affairs Specialist, who will report the percentage of sub-satisfactory evaluations to the SWSD Teaching Committee by July 1 of each year. The annual evaluation rubric assesses the development of the student, with specific evaluations for professional integrity and ethical conduct, ability to solve problems and synthesize data, and an overall assessment of progress toward the degree.

Sample rubric for assessment of SLO #1

MS Thesis or Paper Assessment Rubric:

Learning Outcome	Assessment		
	Exceeds Expectations	Meets Expectations	Does not meet Expectations
Describe and explain theories and concepts in soil and water sciences.			
Apply, analyze, and synthesize content knowledge by identifying component parts, relationships and ideas.			

## G. Assessment Oversight

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