

Undergraduate Academic Assessment Plan 2012-2013

Soil and Water Science

College of Agricultural
and Life Sciences

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Mission Statement

The mission of the Soil and Water Science Department 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. This supports the missions of the college and university to serve the nation's and the state's critical needs by contributing to a well-qualified and broadly diverse citizenry, leadership and workforce.

Student Learning Outcomes (SLOs)

Existing SLOs in the 2012-13 undergraduate catalog:

1. Identify and describe the morphology of soils, differential soils according to soil taxonomy and distinguish the soil forming factors.
2. Appraise the physical, chemical and biological properties of soils in relation to growth of native and agricultural plants and environmental uses.
3. Describe, identify and access the suitabilities/limitations of soils for different uses including, the behavior of water in soils/landscapes and policies for and implications of water allocation among urban, agricultural and natural resources uses.
4. Analyze experimental data and interpret results in soil and water science.
5. Create, interpret and analyze written text, oral messages and multimedia presentations used in agricultural and life sciences.

Revised SLOs for the 2013-14 undergraduate catalog:

Content:

1. Apply fundamental principles of chemistry and physics in relation to critical zone processes in the pedosphere and hydrosphere.
2. Classify fundamental biological processes and differentiate basic organism function in soil and hydrologic systems
3. Utilize field observations, case study evidence, and experimental data to describe soil formation, morphology, and interactions of the varied components of the hydrologic cycle.

Critical Thinking

1. Critically evaluate the sustainability of water resources in relation to human needs and natural ecosystem function.

2. Demonstrate quantitative problem-solving abilities by applying, analyzing, and synthesizing content knowledge related to soil and water chemistry and physics.

Communication

1. Create, interpret, and analyze written text, oral messages, and multimedia presentations used in agricultural and life sciences.

New/Revised SLOs, 2013-14*	Link to 2012-13* SLOs
Content	
Apply fundamental principles of chemistry and physics in relation to critical zone processes in the pedosphere and hydrosphere.	Appraise the physical, chemical and biological properties of soils in relation to growth of native and agricultural plants and environmental uses.
Classify fundamental biological processes and differentiate basic organism function in soil and hydraulic systems.	Identify and describe the morphology of soils, differentiate soils according to soil taxonomy and distinguish the soil forming factors.
Utilize field observations, case study evidence, and experimental data to describe soil formation, morphology, and interactions of the varied components of the hydrologic cycle.	Analyze experimental data and interpret results in soil and water sciences.
Critical Thinking	
Critically evaluate the sustainability of water resources in relation to human needs and natural ecosystem function.	Describe, identify and access the suitabilities/limitations of soils for different uses including, the behavior of water in soils/landscapes and policies for and implications of water allocation among urban, agricultural and natural resources uses.
Demonstrate quantitative problem-solving abilities by applying, analyzing, and synthesizing content knowledge related to soil and water chemistry and physics.	
Communication	
Create, interpret, and analyze written text, oral messages and multimedia presentations used in agricultural and life sciences.	Create, interpret, and analyze written text, oral messages and multimedia presentations used in agricultural and life sciences.

*undergraduate catalog dates

Curriculum Map

Curriculum Map for:

Soil and Water Science

College of Agricultural and Life Sciences

Key: **I**ntrouced

Reinforced

Assessed

Courses SLOs	AEC 3033C and AEC 3030C	SWS 3022	SWS 2007	SWS 4245	SWS 4602C	SWS 4715C	SWS 4303C	SWS 4451	SWS 4307	Additional Assessments
Content Knowledge										
#1		I	I	R, A=Exams, Case studies	R, A=Exams, Lab reports			R, A=Exams		
#2		I	I				R, A=Exams		R, A=Exams, Case studies	
#3		I	I	R, A=Case studies	R	R, A=Field study results				Scholarly article interpretations and mock soil survey reports (SWS4715C)
Critical Thinking										
#1			I	R, A= Article critiques						
#2		I		R				R, A=problem sets		
Communication										
#1	I, R A=course grade			R			R		R	Scholarly article interpretations and mock soil survey reports (SWS4715C)

Assessment Cycle

SLOs will be assessed annually.

Assessment Cycle Chart

Assessment Cycle for:

Soil and Water Science

College of Agricultural and Life Sciences

Analysis and Interpretation:

May – June of each year

Improvement Actions:

Completed by August 1 of each year

Dissemination:

Completed by August 1 of each year

SLOs	Year	11-12	12-13	13-14	14-15	15-16	16-17
Content Knowledge							
#1			X	X	X	X	X
#2			X	X	X	X	X
Critical Thinking							
#3			X	X	X	X	X
#4			X	X	X	X	X
Communication							
#5			X	X	X	X	X
#6			X	X	X	X	X

Methods and Procedures

SLO Assessment Matrix for 2012-13

2012-13 Student Learning Outcome	Assessment Method	Measurement Procedure
Apply fundamental principles of chemistry and physics in relation to critical zone processes in the pedosphere and hydrosphere.	Exams; case studies; lab reports	Exam score; instructor evaluated
Classify fundamental biological processes and differentiate basic organism function in soil and hydrologic systems	Exams; case studies	Exam score; instructor evaluated
Utilize field observations, case study evidence, and experimental data to describe soil formation, morphology, and interactions of the varied components of the hydrologic cycle.	Case studies; field study results; Scholarly article interpretations and mock soil survey reports	Instructor evaluated
Critically evaluate the sustainability of water resources in relation to human needs and natural ecosystem function.	Article critiques	Instructor evaluated
Demonstrate quantitative problem-solving abilities by applying, analyzing, and synthesizing content knowledge related to soil and water chemistry and physics.	Problem sets	Instructor evaluated
Create, interpret, and analyze written text, oral messages, and multimedia presentations used in agricultural and life sciences.	Course grades; Scholarly article interpretations and mock soil survey reports	Graded by rubric

Content Knowledge

SLO#1: Instructor evaluation of exam performance in SWS 4451 and SWS 4602C will assess content knowledge related to pedosphere processes. Exam grades and instructor evaluation of case study analysis in SWS 4245 will assess content knowledge related to hydrosphere processes. Student performance are reported to the undergraduate coordinator following completion of the courses indicated.

SLO#2: Exam performance in SWS 4303C and SWS 4307 as well as case study reports in SWS 4307 will assesses this outcome. Student performance and final grades to be reported to the undergraduate coordinator following completion of the courses indicated.

SLO#3: Three exams as well as field observation summaries in SWS 4715 assess this component of content knowledge. Further assessment is provided by exams and case study reports evaluated by the instructor in SWS 4245. Student performance and final grades to be reported to the undergraduate coordinator following completion of the courses indicated.

Critical Thinking

SLO#1: Weekly critical evaluation of weekly reading assignments related to water resources sustainability in SWS 4245 as well as compulsory in-class commentaries as evaluated by the instructor assess this outcome.

SLO#2: Instructor-evaluated homework assignments provide practice in, and evaluation of, problem-solving abilities related to Soil Chemistry in SWS 4451. Problem sets and laboratory assignments in SWS 4602C assess quantitative skills related to Soil Physics in SWS 4602C. Performance determined by instructor and reported to the undergraduate coordinator following completion of the courses indicated.

Communication

SLO#1: Introduction to aspects of written and oral communication is presented in required coursework (AEC 3030C and AEC 3033C). Completion of AEC 3030C with a C or better is the measure of oral communication proficiency. Completion of AEC 3033C with a C or better is the measure of written communication proficiency. A sample rubric for AEC 3033C is attached. Letter grades from AEC 3030C, AEC 3033C are compiled from a report provided by CALS.

Indirect Assessment

All students will complete an exit interview in their final semester. The students will be asked about their experiences in the classrooms, laboratories, faculty accessibility, and club participation/other activities.

Assessment Oversight

The Academic Assessment Plan for the Soil and Water Science Department will be overseen by the SWSD Undergraduate Programs Committee, which consists of five faculty members (including the Undergraduate coordinator) actively engaged in teaching.

Name	Department Affiliation	Email Address	Phone Number
James Bonczek, Undergraduate Coordinator	Soil and Water Science	bonczek@ufl.edu	352-392-1951
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Susan Curry	Soil and Water Science	scurry@ufl.edu	352-392-1951, ext. 252

AEC 3033C Introduction & Literature Review

75 Points

Assignment Objectives

1. To create a document that introduces your topic and explains the need for your research through the support of secondary sources.
2. To apply proper APA style to your writing.
3. To build a foundation for your analytical report.

Required Elements

- 1) Length of 1 ½ pages or more
- 2) Double spaced
- 3) 12 pt font
- 4) 1 inch margins
- 5) At least 5 sources (in-text citations & reference page) – DON'T OVERUSE DIRECT QUOTES
 - a. At least 2 specialized/government sources (i.e. academic journals, government documents)
 - b. At least 2 trade/business sources (i.e. field specific or trade publications, books)
 - c. At least 1 popular media source (i.e. newspapers, radio, blogs, magazines, TV, etc...)
 - d. Make sure you include a reference page

Description

- Your introduction & literature review should provide the reader with information that explains and provides background information regarding your topic. Your introduction should build a case for your research topic and indicate why it is important. In other words, if the reader was to ask "So what?" about your research, your introduction and literature review should answer the so what question. Your introduction and literature review should demonstrate that you have begun thinking about and answering questions in your question web. Eventually this will be the first page of your final analytical report. The first page needs to attract the reader's attention and draw them into the topic. The information in your introduction and literature review should be supported by sources and be formatted in APA style.

Introduction and Literature Review (75 points)

Item	Unacceptable	Acceptable	Superior	Pts Available	Pts Earned
"So What" question and need for research	An introduction and literature review that needs extensive revisions to appropriately answer the "so what" question and describe the need for research (0-7points)	An introduction and literature review that satisfies most of these requirements, but could do more to answer the "so what" question, describe the need for research, or provide more supporting literature (8-15 points)	An introduction and literature review that meets professional requirements, answers the "so what" questions and describes the need for the research, is supported by literature (16-20 points)	20	
Content and Detail	An introduction and literature review that needs extensive revisions to demonstrate adequate content and detail (0-7 points)	An introduction and literature review that satisfies most of these requirements, but could benefit from additional content and detail (7.5-10 points)	An introduction and literature review that meets professional requirements, provides adequate content and detail, is supported by literature (11-15 points)	15	
Grammar/Mechanics/Formatting /Page Length	An introduction and literature review that has more than 6 grammar/mechanical mistakes, or the type or amount of mechanical, rhetorical, or formatting errors that would distract readers, length of	An introduction and literature review that has between 3 and 6 grammar/mechanical mistakes, does not contain appropriate formatting, and is short of being 1 page long (9-15 points)	An introduction and literature review that has less than 3 grammar/mechanical mistakes, is formatted appropriately, and has an appropriate page length (16-20 points)	20	

	document is 1/2 page or less (0-8 points)				
Sources	Three or less of the required sources included, does not meet all requirements for each source level, all source not cited in-text or included on reference page (0-5 points)	Four of the required five sources included, or five sources included but does not meet the some requirements for each source level (6-8 points)	At least 5 sources included (at least 2 specialized/government sources, 2 trade/business sources, and 1 popular media source) both in in-text citations and on the reference page, no excessive use of direct quotes (9-10 points)	10	
APA Style	Correct APA style in-text citations and reference sheet with more than 6 errors (0-4points)	Correct APA style in-text citations and reference sheet with 6 or less errors (5-7 points)	Correct APA style in-text citations and reference sheet with 3 or less errors (8-10 points)	10	
Total Points				75	
Assignments submitted late (-10% each day)					
File not named correctly (-10%)					
Total Points Earned					
Comments:					