

Program Assessment Report
B.S. in Environmental, Soil and Water Science
University of Arkansas
Academic Year 2019-2020

1. Department Name & Contact Information

Robert Bacon, Dept Head
Crop, Soil, and Environmental Sciences Dept.
115 Plant Science Bldg
479-575-5715
rbacon@uark.edu

2. Department Mission

The mission of the Department of Crop, Soil, and Environmental Sciences is to provide superior education programs at the undergraduate and graduate levels, conduct innovative research and extension programs in the crop, soil, and environmental sciences and provide superior service for citizens of Arkansas and the nation.

3. Program Goals

1. Graduates have the discipline-specific knowledge in soil, water, and environmental sciences required to perform successfully in private, government, or academic entry-level positions.
2. Graduates are able to critically analyze, synthesize, and evaluate new information to make informed decisions.
3. Graduates have the ability to solve complex, multidisciplinary problems.
4. Graduates are able to prepare and synthesize information to effectively communicate, both orally and in writing.

4. Student Learning Outcome 1. Students will demonstrate the discipline specific knowledge required to function as environmental, soil, and/or water science professionals.

A. Assessment Measure for Outcome 1

- Achievement is measured using **pre- and post-assessment**.
- This is a **direct** measure of student learning.
- Pre- and post-assessments of 20 test questions from the ESWS faculty represent essential discipline specific knowledge and skills of students completing an environmental, soil, and water science degree.
- The initial assessment was generated by ESWS faculty during the spring 2016. Following performance and feedback from students in 2016, the pre/post-test was reviewed and three questions were revised while two were deleted and replaced with new questions during 2017. Although content overlaps, questions could roughly be divided into 5 water, 7 environmental, and 8 soil science based questions. Questions were conceptual in nature or calculation based. If the calculation based questions are separated and considered a separate category, the tests consists of 4 water, 7 environmental, and 4 soil science based and 5 calculation based questions.
- Target populations are at least half of the incoming fall freshmen and half of the spring graduating ESWS classes.
- ENSC 1001L Environmental Science Laboratory (FA, SP) or CSES 1203 (FA, SP) required courses for all ESWS students are the target courses for the pre-test.

- ENSC 4263 Environmental Soil Science (SP even), CSES 4553 Wetland Soils (SP odd), ENSC 4034 Analysis of Environmental Contaminants (SP even), optional advanced courses for ESWS students that should capture at least half of the senior population are the target courses for the post-test.
- Scores are calculated for each assessment with the range, average, and median calculated for the pre- and post-assessments to calculate the change in scores from pre- to post-assessment.

B. Acceptable and Ideal Targets (not required for indirect measures)

- Acceptable: We are targeting a 50% increase in the mean and/or median test scores between the two populations (incoming and graduating students).
- Ideal: We are initially targeting a 75% increase in the mean and/or median test scores between the two populations (incoming and graduating students).

C. Summary of Findings

- The pre- and post-assessments were not administered during 2019-2020 academic year.

D. Recommendations

- A couple of challenges in the ESWS degree plan are the large percentage of transfer students and the flexibility in course choice for ESWS students. Not all graduates complete the same courses. Nonetheless, the ESWS faculty should review and articulate expectations of ESWS related knowledge within the knowledge dimension (factual, conceptual, procedural, and metacognitive) and administer the pre- and post-test during 2020-2021 as this assessment has not been implemented the past two academic years.

5. Student Learning Outcome 2. Students will demonstrate the ability to critically evaluate situations or scenarios to arrive at well thought out and supported decisions and outcomes.

A. Assessment Measure for Outcome 2

- Achievement will be measured using a critical thinking scenario and rated using a **critical thinking rubric**.
- This is a **direct** measure of student learning.
- ENSC 3933 Environmental Ethics (SP), ENSC 4023 Water Quality (FA), ENSC 4263 Environmental Soil Science (SP even), CSES 4553 Wetland Soils (SP odd), ENSC 4034 Analysis of Environmental Contaminants (SP even), optional advanced courses for ESWS students that should capture at least half of the senior population, are the target courses for the critical thinking assessment.
- Assessment scenarios will be generated to cover application of critical thinking in environmental, soil, water, or ecological contexts.

B. Acceptable and Ideal Targets (not required for indirect measures)

- Acceptable: 50% of seniors assessed will score proficient or greater.
- Ideal: 90% of seniors assessed will score proficient or greater.

C. Summary of Findings

- The critical thinking rubric was applied to assess the performance of 17 ESWS students on their fourth essay exam in ENSC 3933 Environmental Ethics during May 2020.
- Median performance was proficient for explanation of issues, evidence, influence of context and assumptions, and generation the student's position (perspective, thesis/hypothesis).

Performance for conclusions and related outcomes was rated a median basic level score of 2.4 and ranged from beginning to proficient.

D. Recommendations

- Critical thinking requires analysis, synthesis, and evaluation, i.e. learning at high cognitive levels. Results for ENSC 3933 indicate acceptable target proficiency achievement for most of the criteria assessing critical thinking.

6. Student Learning Outcome 3. Students will demonstrate the ability to work through and solve complex, multidisciplinary problems.

A. Assessment Measure for Outcome 3

- Achievement will be measured using a problem based scenario and scored using a **problem solving rubric**.
- This is a **direct** measure of student learning.
- ENSC 4023 Water Quality (FA), ENSC 4263 Environmental Soil Science (SP even), CSES 4553 Wetland Soils (SP odd), ENSC 4034 Analysis of Environmental Contaminants (SP even), optional advanced courses for ESWS students that should capture at least half of the senior population, are the target courses.
- Assessment scenarios will be generated to cover application of problem solving in environmental, soil, water, or ecological contexts.

B. Acceptable and Ideal Targets (not required for indirect measures)

- Acceptable: 50% of seniors assessed will score proficient or greater.
- Ideal: 75% of seniors assessed will score proficient or greater.

C. Summary of Findings

- Problem solving ability was not assessed during 2019-2020.

D. Recommendations

- Problem solving ability should be assessed during 2020-2021. Assessment should highlight areas where students are achieving at lower than proficient level.
- Problem solving does require comprehension, application, analysis, synthesis, and evaluation, i.e. learning at high cognitive levels; therefore, in general, faculty should continue to consider and articulate where and when students have opportunities to develop (learn and repeatedly practice) those cognitive skills within the curriculum.

7. Student Learning Outcome 4a. Students will demonstrate the skills required to effectively communicate technical/scientific information in oral platforms.

A. Assessment Measure for Outcome 4a

- Achievement will be assessed using an **oral communication rubric** during oral presentations where the student has compiled and evaluated the scientific literature as part of a class project and/or completed an independent research project as part of a special problems, research project or internship class.
- This is a **direct** measure of student learning.

- CSES 3023 CSES Colloquium (FA), an upper division, professional development, communication-intensive course that should capture at least half of the senior population, is one target course for the assessment.
- CSES 4253 Soil Genesis and Classification, provided another opportunity for students to present a term paper and for the oral communication rubric to be used to evaluate communication skills.

B. Acceptable and Ideal Targets (not required for indirect measures).

- Acceptable: 50% of seniors assessed will score proficient or greater.
- Ideal: 75% of seniors assessed will score proficient or greater.

C. Summary of Findings

- In total between the two courses eleven different ESWS students' oral communication skills were evaluated based on a presentations of research or term paper topics. The median scores for organization, language, supporting material, and central message were all proficient.
- The scores for delivery ranged from basic to proficient with an average of 2.6 and median of 2.5.

D. Recommendations

- Assessment showed an acceptable target of proficiency for most criteria within oral presentation skills.
- We will continue to collect data to assess performance in oral communication. Supporting and delivering concise, well supported scientific data to diverse audiences presents difficult challenges. However, the development of these skills are critical to functioning in society and in the workforce in the applied sciences. These are skills that employers often complain are lacking in college graduates.

8. Student Learning Outcome 4b. Students will demonstrate the ability to integrate, organize, and effectively present written reports of technical/scientific information.

A. Assessment Measure for Outcome 4b

- Achievement will be assessed using a **written communication rubric** for laboratory reports and technical/scientific proposals or term papers where the student has analyzed, synthesized and evaluated information from independent sources as part of a class project and/or completed an independent research project as part of a special problems, research project or internship class.
- This is a **direct** measure of student learning.
- Assessment of writing was conducted during the fall 2019 in CSES 4253 using a term paper assignment.

B. Acceptable and Ideal Targets (not required for indirect measures).

- Acceptable: 50% of seniors assessed will score proficient or greater.
- Ideal: 75% of seniors assessed will score proficient or greater.

C. Summary of Findings

- Five ESWS students were assessed using the written communication rubric.
- The median scores for content development and discipline convention were proficient.
- All scores were at least basic and ranged up to better than proficient (but not quite mastery) for use of sources and evidence. Context and purpose and sources and evidence were rated

between basic and proficient (2.5), and syntax and mechanics were rated as basic for all written assignments.

D. Recommendations

- Assessments indicate that writing skills remain at a basic level, even if discipline specific skills and content development skills progress.
- Writing skills assessment will continue in order to establish longer-term assessment results. If future assessment data indicate less than desired proficiency, curriculum revision to include more opportunities for development of writing skills should be supported by administration.

9. Overall Recommendations

- Current assessment approaches are beginning to provide enough data to establish baseline understanding of student achievement given the measures implemented in 2016. Continued data collection during the 2020-2021 academic year will allow faculty to better evaluate if and where changes to the student learner outcomes, and/or curriculum would better serve ESWS students.
- Some assessments that could bring about curriculum revisions, if they were deemed needed, would involve knowledge (outcome 1) while others would involve investments by administration (support for more writing intensive curriculum).

10. Action Plan

- There may be an opportunity with the upcoming changes occurring with the General Education Core to integrate assessment of problem solving and writing skills into assessment of Learner Outcome 6 that the department will be incorporating and is supposed to be getting training on and implementing during the next academic year.
- Continue to use and evaluate the pre- and post-assessment tests and review outcome 1.

11. Supporting Attachments

- Pre-/post-assessment for ESWS program
- Critical thinking rubric adapted from Association of American Colleges and Universities
- Problem solving rubric adapted from Association of American Colleges and Universities
- Oral communication skills rubric adapted from Association of American Colleges and Universities
- Written communication skills rubric adapted from Association of American Colleges and Universities

Environmental, Soil, and Water Science
Pre- and Post- Curriculum Knowledge Assessment

Name _____

Date _____

Semester and Year entered ESWS _____

PRE

POST

1. The dissolved oxygen in a BOD sample at 1:20 dilution is initially $11.4 \text{ mg liter}^{-1}$. After 5 days at 20°C the dissolved oxygen was $3.6 \text{ mg liter}^{-1}$. The BOD_5 of the sample is
 - a) $7.8 \text{ mg liter}^{-1}$
 - b) $31.2 \text{ mg liter}^{-1}$
 - c) 72 mg liter^{-1}
 - d) $156 \text{ mg liter}^{-1}$

2. Which of the following is/are true regarding water pollution?
 - a) water pollution occurs naturally
 - b) water pollution can be accelerated by human activity
 - c) water is considered polluted when it is unusable for a particular purpose
 - d) all of the above

3. Diversity is
 - a) greatest when many species are present at high relative abundances
 - b) calculated with the following equation $dN/dt = rN(1-N/K)$
 - c) the number of different species in a community
 - d) calculated with the following equation $N_t = N_0 e^{rt}$

4. Soil pH is important for controlling availability of nutrients, impacting reactions which has consequences for physical structure and the biological community and biochemical activity. Which is true at pH 5.5?
 - a) fungal activity is inhibited
 - b) soil micronutrient concentrations (such as B, Cu, Mn, Zn) are relatively available
 - c) soil molybdate concentration is greatest
 - d) soil phosphate concentration is greatest

5. Twenty dry tons of poultry litter compost (40% C, C/N = 9) was applied to an acre in March. How much net mineralization would occur in 137 days if its first order rate constant for N mineralization was $0.0001/\text{d}$?
 - a) 0.56 tons
 - b) 0.11 tons
 - c) 0.54 tons
 - d) 12.66 tons

6. Computer-based mapping, analysis, and location-based data management that can be used to solve problems is
 - a) Geographic Information System (GIS)
 - b) Global Positioning System (GPS)
 - c) Raster Imaging
 - d) Remote Sensing

7. Which of the following are considered the five soil-forming factors?
 - a) climate, relief, time, organisms, and plants
 - b) color, relief, time, organisms, and rocks
 - c) country, topography, temperature, animals, and rocks
 - d) parent material, relief, time, organisms, and climate

8. Common property and/or public goods, e.g. water, often require resource protection because
 - a) they are easily exploited due to their access and availability
 - b) the public is unaware of the value of these resources
 - c) these resources have no social value
 - d) their value is easily measurable in economic terms.

9. Which of the following soils would you expect to have the most contaminant movement in runoff?
 - a) 3% slope, silt loam texture, pasture
 - b) 4% slope, silty clay loam texture, soybeans
 - c) 1% slope, sandy loam texture, cotton
 - d) 1% slope, clay loam texture, pasture

10. Which of the following is not an ecological consequence of acid deposition?
 - a) decreased aquatic diversity and increased risk of harmful algal blooms
 - b) eutrophication
 - c) leaching of basic cations from soil and aluminum toxicity to plants
 - d) weathering from acid inputs that increases buffering capacity of soils

11. The problem that we currently face in global climate change is not that the earth has never been so warm, but the rapid changes in climate. Current models estimate that the average global temperature may rise between 2 and 6°C during the next century leading to which of the following consequences?
 - a) a consistent increase in temperature across the globe
 - b) inconsistent rates of change across species and locations altering ecology
 - c) lack of adaptation of plants and animals to new phenology and abiotic conditions
 - d) warmer climatic with unchanged precipitation patterns

12. Which of the following soil microorganisms are generally most numerous in a typical agricultural soil?
 - a) bacteria
 - b) fungi
 - c) nematodes
 - d) protozoa

13. During an analysis for soil test phosphorus of Mehlich-III soil extract analyzed by inductively coupled plasma- atomic emission spectroscopy, the laboratory technician extracts and analyzes a laboratory duplicate to check the precision of the method. This is an example of
 - a) quality assurance
 - b) quality control
 - c) field duplicate
 - d) method detection limit

14. Sulfate is extracted in 50 mL extract solution from 22 g of moist soil, reacted chemically to form a precipitate, and absorbance of light in the solution is measured in a spectrophotometer. The dry weight of a 10-g soil sample at equivalent moisture content was 8.1 g. The calibration curve for absorbance data based on standard solutions is shown below. The regression of the calibration curve gave an $R^2 = 0.997$, with a slope = 0.018, and the y-intercept = 0.002.

<u>Std. ($\mu\text{g S/mL}$)</u>	<u>abs</u>
0	0.002
12.5	0.205
25	0.478
50	0.883

The extraction solution absorbance of the soil sample is 0.381. Given these data, what is the concentration of $\text{SO}_4^{2-}\text{-S}$ ($\mu\text{g S/g}$) in the soil?

- a) 0.06
b) 2.6
c) 21.1
d) 58.8
15. Ammonium sulfate $(\text{NH}_4)_2\text{SO}_4$ is broadcast onto to a silty clay soil which is at a temperature of 25 °C and a moisture content of 0.3 g g^{-1} . What would be the immediate loss mechanism of concern for N?
a) denitrification
b) mineralization
c) volatilization
d) leaching
16. Estimate the CEC of a Mollisol at pH = 7, with 16% 2:1 smectite clay (average CEC of 80 cmol_c/kg), 3% kaolinite clay (average CEC of 8 cmol_c/kg), and 3.5% OM (average CEC of 200 cmol_c/kg).
a) 288
b) 35.83
c) 22.5
d) 20.04
17. A soil core 10 cm long and 2.5 cm in diameter is collected from a moist field. The moist soil weight in the core is 132 g. The empty core weight is 35 g. The dry soil weight is 78 g. What is the volumetric moisture content of the soil?
a) 0.20
b) 0.24
c) 0.30
d) 0.41
18. Which of the following water characteristics represents a eutrophic lake?
a) low dissolved P concentration
b) low light absorbance reading
c) long Secchi disk reading
d) low chlorophyll-a reading

19. Which of the following best describes the three key characteristics of a wetland?
- a) hydrophobic vegetation, hydrology, and organic soil
 - b) hydrophobic vegetation, continuous ponded water, and hydric soil
 - c) hydrophilic vegetation, continuous ponded water, and hydric soil
 - d) hydrophytes, hydrology, and hydric soil
20. Stream A supplies Town X's drinking water. What should one be concerned about regarding the quality of Town X's drinking water?
- | | |
|----------------|-----------|
| nitrate | 5 ppm |
| phosphate | 10 ppb |
| oxygen | 8.5 ppm |
| <i>E. coli</i> | 25/100 mL |
- a) fecal contamination and possible presence of pathogens
 - b) excessive nitrate
 - c) excessive phosphate
 - d) low dissolved oxygen

CRITICAL THINKING VALUE RUBRIC

for more information, please contact value@aacu.org



Definition

Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion, and can be demonstrated in assignments that require students to complete analyses of text, data, or issues..

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone Exemplary	Milestones		Benchmark Developing
		Proficient	Basic	
Explanation of issues	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.
Evidence <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

**Crop, Soil, and Environmental Sciences
Undergraduate Student Critical Thinking Performance
Assessment Rubric**

Student	_____	
Degree	ESWS	CPSC
Course	_____	
Assignment	_____	
Date	_____	

Student Learning Outcomes

Score using Rubric

- | | | |
|----|---|-------|
| 1. | Explanation of issues | _____ |
| 2. | Evidence | _____ |
| 3. | Influence of context and assumptions | _____ |
| 4. | Student's position (perspective, thesis/hypothesis) | _____ |
| 5. | Conclusions and related outcomes
(implications and consequences) | _____ |

*Rubric Scale
4 = Mastery
3 = Proficient
2 = Basic
1 = Developing

PROBLEM SOLVING VALUE RUBRIC

for more information, please contact value@aacu.org



Definition: Problem solving is the **process** of designing, evaluating, and implementing a strategy to answer an open-ended question or achieve a desired goal, involving problems that range from well-defined to ambiguous in a simulated or laboratory context, or in real-world settings..

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone Exemplary	Milestones		Benchmark Developing
		Proficient	Basic	
Define Problem	Demonstrates the ability to construct a clear and insightful problem statement with evidence of all relevant contextual factors.	Demonstrates the ability to construct a problem statement with evidence of most relevant contextual factors, and problem statement is adequately detailed.	Begins to demonstrate the ability to construct a problem statement with evidence of most relevant contextual factors, but problem statement is superficial.	Demonstrates a limited ability in identifying a problem statement or related contextual factors.
Identify Strategies	Identifies multiple approaches for solving the problem that apply within a specific context.	Identifies multiple approaches for solving the problem, only some of which apply within a specific context.	Identifies only a single approach for solving the problem that does apply within a specific context.	Identifies one or more approaches for solving the problem that do not apply within a specific context.
Propose Solutions/Hypotheses	Proposes one or more solutions/hypotheses that indicates a deep comprehension of the problem. Solution/hypotheses are sensitive to contextual factors as well as all of the following: ethical, logical, and cultural dimensions of the problem.	Proposes one or more solutions/hypotheses that indicates comprehension of the problem. Solutions/hypotheses are sensitive to contextual factors as well as the one of the following: ethical, logical, or cultural dimensions of the problem.	Proposes one solution/hypothesis that is “off the shelf” rather than individually designed to address the specific contextual factors of the problem.	Proposes a solution/hypothesis that is difficult to evaluate because it is vague or only indirectly addresses the problem statement.
Evaluate Potential Solutions	Evaluation of solutions is deep and elegant (for example, contains thorough and insightful explanation) and includes, deeply and thoroughly, all of the following: considers history of problem, reviews logic/reasoning, examines feasibility of solution, and weighs impacts of solution.	Evaluation of solutions is adequate (for example, contains thorough explanation) and includes the following: considers history of problem, reviews logic/reasoning, examines feasibility of solution, and weighs impacts of solution.	Evaluation of solutions is brief (for example, explanation lacks depth) and includes the following: considers history of problem, reviews logic/reasoning, examines feasibility of solution, and weighs impacts of solution.	Evaluation of solutions is superficial (for example, contains cursory, surface level explanation) and includes the following: considers history of problem, reviews logic/reasoning, examines feasibility of solution, and weighs impacts of solution.
Implement Solution	Implements the solution in a manner that addresses thoroughly and deeply multiple contextual factors of the problem.	Implements the solution in a manner that addresses multiple contextual factors of the problem in a surface manner.	Implements the solution in a manner that addresses the problem statement but ignores relevant contextual factors.	Implements the solution in a manner that does not directly address the problem statement.
Evaluate Outcomes	Reviews results relative to the problem defined with thorough, specific considerations of need for further work.	Reviews results relative to the problem defined with some consideration of need for further work.	Reviews results in terms of the problem defined with little, if any, consideration of need for further work.	Reviews results superficially in terms of the problem defined with no consideration of need for further work

**Crop, Soil, and Environmental Sciences
Problem Solving Performance
Assessment Rubric**

Student	_____	
Degree	ESWS	CPSC
Course	_____	
Assignment	_____	
Date	_____	

Student Learning Outcomes	Score using Rubric
1. Define Problem	_____
2. Identifying Strategies	_____
3. Propose Solutions/Hypotheses	_____
4. Evaluate Potential Solutions	_____
5. Implement Solution	_____
6. Evaluate Outcomes	_____

*Rubric Scale
4 = Mastery
3 = Proficient
2 = Basic
1 = Developing

ORAL COMMUNICATION VALUE RUBRIC

for more information, please contact value@aacu.org



Definition: Oral communication is a prepared, purposeful presentation designed to increase knowledge, to foster understanding, or to promote change in the listeners' attitudes, values, beliefs, or behaviors.

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone Exemplary	Milestones		Benchmark Developing
		Proficient	Basic	
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced, but is not explicitly stated in the presentation.

**Crop, Soil, and Environmental Sciences
Oral Communication Performance
Assessment Rubric**

Student	_____	
Degree	ESWS	CPSC
Course	_____	
Assignment	_____	
Date	_____	

Student Learning Outcomes

Score using Rubric

1.	Organization	_____
2.	Language	_____
3.	Delivery	_____
4.	Supporting Material	_____
5.	Central Message	_____

*Rubric Scale
4 = Mastery
3 = Proficient
2 = Basic
1 = Developing

WRITTEN COMMUNICATION VALUE RUBRIC

for more information, please contact value@aacu.org



Definition

Written communication is the development and expression of ideas in writing. Written communication involves learning to work in many genres and styles. It can involve working with many different writing technologies, and mixing texts, data, and images. Written communication abilities develop through iterative experiences across the curriculum.

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone Exemplary	Milestones		Benchmark Developing
		Proficient	Basic	
Context of and Purpose for Writing <i>Includes considerations of audience, purpose, and the circumstances surrounding the writing task(s).</i>	Demonstrates a thorough understanding of context, audience, and purpose that is responsive to the assigned task(s) and focuses all elements of the work.	Demonstrates adequate consideration of context, audience, and purpose and a clear focus on the assigned task(s) (e.g., the task aligns with audience, purpose, and context).	Demonstrates awareness of context, audience, purpose, and to the assigned tasks(s) (e.g., begins to show awareness of audience's perceptions and assumptions).	Demonstrates minimal attention to context, audience, purpose, and to the assigned tasks(s) (e.g., expectation of instructor or self as audience).
Content Development	Uses appropriate, relevant, and compelling content to illustrate mastery of the subject, conveying the writer's understanding, and shaping the whole work.	Uses appropriate, relevant, and compelling content to explore ideas within the context of the discipline and shape the whole work.	Uses appropriate and relevant content to develop and explore ideas through most of the work.	Uses appropriate and relevant content to develop simple ideas in some parts of the work.
Genre and Disciplinary Conventions <i>Formal and informal rules inherent in the expectations for writing in particular forms and/or academic fields (please see glossary).</i>	Demonstrates detailed attention to and successful execution of a wide range of conventions particular to a specific discipline and/or writing task(s) including organization, content, presentation, formatting, and stylistic choices.	Demonstrates consistent use of important conventions particular to a specific discipline and/or writing task(s), including organization, content, presentation, and stylistic choices	Follows expectations appropriate to a specific discipline and/or writing task(s) for basic organization, content, and presentation	Attempts to use a consistent system for basic organization and presentation.
Sources and Evidence	Demonstrates skillful use of high-quality, credible, relevant sources to develop ideas that are appropriate for the discipline and genre of the writing.	Demonstrates consistent use of credible, relevant sources to support ideas that are situated within the discipline and genre of the writing.	Demonstrates an attempt to use credible and/or relevant sources to support ideas that are appropriate for the discipline and genre of the writing.	Demonstrates an attempt to use sources to support ideas in the writing.
Control of Syntax and Mechanics	Uses graceful language that skillfully communicates meaning to readers with clarity and fluency, and is virtually error-free.	Uses straightforward language that generally conveys meaning to readers. The language in the portfolio has few errors.	Uses language that generally conveys meaning to readers with clarity, although writing may include some errors.	Uses language that sometimes impedes meaning because of errors in usage.

**Crop, Soil, and Environmental Sciences
Written Communication Performance
Assessment Rubric**

Student	_____	
Degree	ESWS	CPSC
Course	_____	
Assignment	_____	
Date	_____	

Student Learning Outcomes	Score using Rubric
1. Context of and Purpose for Writing	_____
2. Content Development	_____
3. Genre and Disciplinary Conventions	_____
4. Sources and Evidence	_____
5. Control of Syntax and Mechanics	_____

*Rubric Scale
4 = Mastery
3 = Proficient
2 = Basic
1 = Developing