

Student Learning Outcomes Assessment Summary

Natural Resources Management, BS

School of Natural Resources Management and Extension

AY 2017-18

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1. Assessment information collected

1) Selected 300 and 400-level course exams, term papers, and other projects were reviewed with the following Association of American Colleges and Universities (AACU) VALUE Rubrics:

- Critical Thinking,
- Problem Solving,
- Oral Communication,
- Written Communication, and
- Inquiry and Analysis,

For each rubric, the following scores were utilized: 1 = benchmark, 2 and 3 = milestones, and 4 = capstone. The rubrics can be found at:

<http://www.uaf.edu/files/provost/SLOA/NaturalResourcesManagementBSPlan2017.pdf>

- 138 individual assessments were conducted
- Evaluations were conducted in 5 distinct classes: GEOG 483 (i.e., posters presented by NRM students), NRM 300, NRM 366, NRM 380, NRM 484
- 5 categories of tasks were evaluated: assignments, class projects, exams, final papers, poster presentations
- 12 different tasks were evaluations: 5 unique exams, 3 unique class projects, 2 unique assignments, poster presentations, and final papers.
- Not all rubrics were applicable to each task evaluated, nor all components of each rubric:
 - Critical Thinking, ns ranged from 59 to 62.
 - Problem Solving, ns ranged from 29 to 34.
 - Oral Communication, ns was 11
 - Written Communication, ns ranged from 46 to 58.
 - Inquiry and analysis, ns ranged from 28 to 59.

2) Three posters presented by SNRE students at the Undergraduate Research and Scholarly Activity (URSA) Research Day were evaluated with the VALUE rubrics. This represent all students presenting at URSA, spring 2018.

- 3) Nine exit interviews were conducted by the SNRE Director of Academic Programs.
- 4) Three graduates from the class of 2017 were entered into the SNRE alumni database. One of those students successfully contacted regarding employment.

2. Conclusions drawn from the information summarized above

1) Assessment of exams, term papers, and other class projects

Across the 27 individual items within the rubrics evaluated, all but 3 had mean scores above 3 (upper milestone; Table 1, Appendix I). The three individual items that did not achieve a mean above 3 (Critical Thinking: conclusions, Problem Solving: evaluate outcomes, and Oral Communication: supporting material), had means of 2.9. All but 4 of the 27 items had 70% of the individual evaluations achieving a score of 3 or 4 (upper milestone and capstone, respectively). The four rubrics that did not achieve scores of 3 or 4 across 70% of evaluations were: Critical Thinking: evidence, Critical Thinking: conclusions, Problem Solving: evaluate outcomes, and Oral Communication: supporting material.

When examining scores within the type of task being evaluated (e.g., exam vs. assignment), low ns for some tasks makes comparisons difficult (Table 2, Appendix I). Nonetheless the following insights can be gleaned:

- The Final Paper evaluations are noteworthy for the high percentage of scores that were high milestones and capstones (i.e., 3 and 4, respectively).
- Exams and Assignments had 4 and 1, respectively, individual items with less than 70% of scores achieving a 3 or 4. Of those, Inquiry and Analysis: conclusions was the lowest at 61%.
- Scores (both the mean and % scoring a ≥ 3) were variable for the poster presentations, with 9 of the 22 rubrics failing to achieve 70% scoring 3 or 4.
- Although the n was low for many of the items, the class project evaluations had a large number of rubrics that failed to achieve 70% of scores of 3 or 4.

2. URSA Posters

Scores across the three URSA posters were variable; 6 of the 17 individual items within the rubrics assessed did not achieved 100% of scores rated as 3 or 4. Of particular note is Critical Thinking: evidence, with 2 of 3 posters falling below a score of 3.

3. Exit interviews

The exit interviews asked four questions relevant to student outcomes. The questions and a summary of responses are below.

a. In what ways were expectations not met?

All but one indicated that expectations were mostly met. Expectations not met included insufficient coursework in particular areas (agriculture, forestry); insufficient emphasis on introducing students to program; insufficient "hands on" learning (though others praised this in program); too much repetition between some classes, especially introductory courses; some courses too easy; some lower division courses should be upper division (especially NRM 204).

b. What changes to the degree/school would have allowed your expectations to be better met?

More outside resources and hands on learning experiences; better student orientation; less repetition among early classes (and more new material); more forestry; more emphasis on how to obtain outside information, especially policies and regulations.

c. Do you feel the NRM degree has prepared you for your post-degree plans? (list specific factors)

Yes: broad diversity of courses; well set for grad school; GIS series strong; URSA experience excellent; internship valuable

No: few specific skills learned; needs more emphasis on hands-on courses; help in identifying concentration; missing courses in specific areas (Rec mgmt, forestry)

d. Are there ways the NRM degree has failed to prepare you for your plans?

Need better professional connections with agencies, etc.; lack of forestry; encourage identifying concentration after NRM 290; NRM 111 cited as weak point (and repetitive of NRM 101); emphasis on basic skills (e.g. Microsoft Excel)

4. Tracking of alumni

The student successfully contacted is working in a natural resources management position at the Alaska Department of Fish and Game.

3. Curricular changes resulting from conclusions drawn above

The class project evaluations with the ns of 2 and 1 consisted of NRM 484 and NRM 300. The low scores associated with those evaluations were from NRM 300 Internship in Natural Resources Management, a class mostly self-directed. While NRM 300 does have a minimum GPA requirement, it was waived in this case. When faculty convene in fall 2018, they will discuss if the GPA requirement should be strictly enforced. Also to be discussed is whether revised guidelines/expectations for NRM 300 are needed. Further, if NRM 300 will become a broader part of the curriculum, increased contact between the faculty mentor and student might be necessary.

It appears URSA mentors must work more closely with their advisees. Faculty will discuss if a formal timeline for URSA tasks is needed. However, it should be noted the earlier date of the URSA Research Day might have impacted the quality of some posters.

Results of the NRM BS SLOA will be presented at the first fall 2018 faculty meeting. While it does not appear significant changes to curriculum are warranted, faculty will discuss strategies for boosting the rubrics with mean scores near or below 3.0/close to or fewer than 70% or scores achieving a 3 or 4.

4. Identify the faculty members involved in reaching the conclusions drawn above and agreeing upon the curricular changes resulting

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5. Has your SLOA plan been updated to include assessment of the program's Communication Plan, as required by Faculty Senate motion? (required for baccalaureate programs only)

Yes, rubrics were included for written and oral communication.

Appendix I: Supporting Data

Table 1. Rubric Scores Across all Evaluations.

Rubric	n	Mean	Median	% => 3
Critical Thinking: Explain issues	62	3.5	4	94%
Critical Thinking: Evidence	61	3.1	3	69%
Critical Thinking: Influence context assumptions	62	3.0	3	76%
Critical Thinking: Position	62	3.1	3	77%
Critical Thinking: Conclusions	59	2.9	3	66%
Problem Solving: Define problem	35	3.4	4	89%
Problem Solving: Identify strategies	34	3.3	3	85%
Problem Solving: Solutions-hypotheses	34	3.1	3	82%
Problem Solving: Evaluate solutions	35	3.0	3	71%
Problem Solving: Implement solutions	32	3.0	3	75%
Problem Solving: Evaluate outcomes	29	2.9	3	66%
Oral Communication: Organization	11	3.1	3	82%
Oral Communication: Language	11	3.2	3	91%
Oral Communication: Delivery	11	3.2	3	82%
Oral Communication: Supporting material	11	2.9	3	64%
Oral Communication: Central message	11	3.3	3	91%
Written Communication: Context purpose	46	3.5	4	91%
Written Communication: Development	58	3.4	4	84%
Written Communication: Disciplinary conventions	58	3.4	4	88%
Written Communication: Sources evidence	46	3.4	4	83%
Written Communication: Syntax mechanics	58	3.4	4	90%
Inquiry and Analysis: Topic selection	30	3.7	4	93%
Inquiry and Analysis: Existing knowledge	44	3.2	3	80%
Inquiry and Analysis: Design	59	3.2	4	75%
Inquiry and Analysis: Analysis	57	3.3	4	77%
Inquiry and Analysis: Conclusions	56	3.2	3	73%
Inquiry and Analysis: Limitations	28	3.4	4	86%

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Table 2. Rubric Scores by Task being Evaluated.

Rubric	Exam			Assignment			Poster presentation			Final paper			Class project		
	n	Mean	% => 3	n	Mean	% => 3	n	Mean	% => 3	n	Mean	% => 3	n	Mean	% => 3
Critical Thinking: Explain issues	18	3.7	100%	2	3.0	50%	32	3.5	97%				10	2.9	80%
Critical Thinking: Evidence	18	3.3	72%	2	3.5	100%	32	3.1	69%				9	2.4	56%
Critical Thinking: Influence context assumptions	18	3.2	83%	2	3.0	100%	32	3.0	72%				10	2.5	70%
Critical Thinking: Position	18	3.1	78%	2	3.0	50%	32	3.2	84%				10	2.8	60%
Critical Thinking: Conclusions	18	2.9	67%	2	3.0	50%	32	3.0	69%				7	2.6	57%
Problem Solving: Define problem				1	2.0	0%	24	3.6	96%				10	3.2	80%
Problem Solving: Identify strategies				1	2.0	0%	24	3.4	92%				9	2.9	75%
Problem Solving: Solutions-hypotheses				1	2.0	0%	24	3.2	83%				9	3.1	89%
Problem Solving: Evaluate solutions				1	2.0	0%	24	3.0	71%				10	3.0	80%
Problem Solving: Implement solutions				1	3.0	100%	24	3.0	71%				7	3.0	86%
Problem Solving: Evaluate outcomes							24	3.0	67%				5	2.4	60%
Oral Communication: Organization													11	3.1	82%
Oral Communication: Language													11	3.2	91%
Oral Communication: Delivery													11	3.2	82%
Oral Communication: Supporting Material													11	2.9	64%
Oral Communication: Central message													11	3.3	91%
Written Communication: Context purpose				2	3.5	100%	26	3.3	85%	18	3.8	100%			
Written Communication: Development				2	2.5	50%	38	3.2	79%	18	3.8	100%			
Written Communication: Disciplinary conventions				2	3.0	50%	38	3.3	84%	18	3.7	100%			
Written Communication: Sources evidence				2	3.0	50%	26	3.1	73%	18	3.9	100%			
Written Communication: Syntax mechanics				2	2.5	50%	38	3.3	87%	18	3.8	100%			
Inquiry and Analysis: Topic selection				8	3.9	100%	4	3.8	100%	8	4.0	100%	10	3.4	80%
Inquiry and Analysis: Existing knowledge				8	3.6	88%	18	3.3	83%	8	3.8	100%	10	2.4	50%
Inquiry and Analysis: Design	15	3.3	73%	8	3.6	88%	18	3.2	72%	8	3.6	100%	10	2.7	50%
Inquiry and Analysis: Analysis	15	3.3	73%	8	3.6	88%	18	3.2	72%	8	3.6	100%	8	2.8	63%
Inquiry and Analysis: Conclusions	15	3.1	73%	8	3.6	88%	18	3.0	61%	8	3.9	100%	7	2.9	57%
Inquiry and Analysis: Limitations				7	3.7	100%	3	3.7	100%	8	3.8	88%	10	2.9	70%

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Table 3. URSA Poster Presentation Evaluations.

Rubric	n	Mean	Median	% => 3
Critical Thinking: Explain issues	3	3.0	3.0	67%
Critical Thinking: Evidence	3	2.7	2.0	33%
Critical Thinking: Influence context assumptions	3	2.7	3.0	67%
Critical Thinking: Position	3	3.0	3.0	100%
Critical Thinking: Conclusions	1	4.0	4.0	100%
Problem Solving: Define problem	3	3.3	3.0	100%
Problem Solving: Identify strategies	2	3.5	3.5	100%
Problem Solving: Solutions-hypotheses	3	3.3	3.0	100%
Problem Solving: Evaluate solutions	3	3.3	3.0	100%
Problem Solving: Implement solutions	1	4.0	4.0	100%
Problem Solving: Evaluate outcomes	1	4.0	4.0	100%
Inquiry and Analysis: Topic selection	3	3.7	4.0	100%
Inquiry and Analysis: Existing knowledge	3	3.0	3.0	67%
Inquiry and Analysis: Design	3	3.0	3.0	67%
Inquiry and Analysis: Analysis	2	3.0	3.0	50%
Inquiry and Analysis: Conclusions	1	4.0	4.0	100%
Inquiry and Analysis: Limitations	1	4.0	4.0	100%

The ns varied because the projects differed and not all rubrics were applicable to each project.

The oral communication and written communication rubrics were not applied.