

**Department of Earth and Space Sciences, Lamar University**  
**Assessment Results for the M.S. in Geospatial Sciences – Thesis Program**  
**2023-2024**

**Tabulated Excel Spreadsheet of Results:**

<b>Critical Thinking AY23-24</b>						
<b>Skill</b>	<b>Student #1</b>	<b>Student #2</b>	<b>Student #3</b>	<b>Student #4</b>	<b>Average</b>	<b>Met Target?</b>
Explanation of issues	3	3	4	2	3.00	Y
Evidence	3	2	3	1	2.25	N
Influence of Context and Assumptions	4	3	4	2	3.25	Y
Student Position	3	3	4	2	3.00	Y
Conclusions and Related Outcomes	3	3	3	1	2.50	N
<b>Average</b>	3.20	2.80	3.60	1.60	2.80	
<b>Oral Communication AY23-24</b>						
<b>Skill</b>	<b>Student #1</b>	<b>Student #2</b>	<b>Student #3</b>	<b>Student #4</b>	<b>Average</b>	<b>Met Target?</b>
Organization	4	4	4	3	3.75	Y
Language	3	3	3	2	2.75	N
Delivery	4	4	4	3	3.75	Y
Supporting Material	4	3	4	2	3.25	Y
Central Message	3	3	3	2	2.75	N
<b>Average</b>	3.60	3.40	3.60	2.40	3.25	
<b>Written Communication AY23-24</b>						
<b>Skill</b>	<b>Student #1</b>	<b>Student #2</b>	<b>Student #3</b>	<b>Student #4</b>	<b>Average</b>	<b>Met Target?</b>
Context of and Purpose for Writing	2	3	4	1	2.50	N
Content Development	3	3	4	3	3.25	Y
Genre and Disciplinary Conventions	3	3	3	2	2.75	N
Sources and Evidence	3	2	4	2	2.75	N
Control of Syntax and Mechanics	4	3	3	1	2.75	N
<b>Average</b>	3.00	2.80	3.60	1.80	2.80	

**Critical Thinking Assessment Results:**

The average score for the four students that were assessed is 2.80, which is below the 3.00 target for the average of all the skills in this outcome. The two critical thinking skills that did not meet the target are Evidence, and Conclusions and Related Outcomes. Two students did not meet the target in the first skill, and one did not meet the target in both skills. In fact, the latter student did not meet the target in any of the skills, which is what brought the average for all the skills down.

**Critical Thinking Action Plan:**

Evidence: This skill pertains to finding evidence from data or the literature to support ideas. For the next two years, the faculty that work with or teach the Geospatial Science students will stress the importance of finding evidence to support the students' ideas, theories, and conclusions. This will occur in classes and during thesis development. If the evidence is not there, the student needs to say so, find a better explanation that is supported by the evidence, or abandon the idea as unsupported. How well the students are doing this will be determined

by exams, term papers, and final projects, as well as conversations between the students and their thesis advisor or committee members. The skill will be reassessed in two years and compared to this year's results.

*Conclusions and Related Outcomes:* This skill ascertains how well the students logically tie their conclusions to a range of observations, interpretations, and a range of other information, including how other opposing viewpoints may not fit the evidence as well. It also ascertains how well the students clearly identify the consequences and implications of their conclusions. For the next two year, the faculty that work with or teach the Geospatial Science students will stress the importance of logically tying conclusions and related outcomes to the data and interpretation of the data. This will occur in classes and during thesis development. How well the students are doing this will be determined by exams, term papers, and final projects, as well as conversations between the students and their thesis advisor or committee members. The skill will be reassessed in two years and compared to this year's results.

### **Oral Communication Assessment Results:**

The average score for the four students that were assessed is 3.25, which is above the 3.00 target for the average of all the skills in this outcome. However, two critical thinking skills did not meet the target. These are Language, and Central Message. Although three students met the target in all the skills, they did not exceed the target. Therefore, the one student that did not meet the target in those skills dropped the average for all four students below the target for those skills.

### **Oral Communication Action Plan:**

*Language:* This skill relates to how well students use the language of their specialty (primarily correct use of terminology) as well as other word choices to succinctly relate the students' research to the audience. Over the next two years, emphasis will be placed on making sure the students understand the correct terminology to use when they are giving oral presentations in class, or simply answering questions. When the wrong terminology is used, or a better choice of words would improve communication, the instructor should work with the student to help them choose the correct terminology or better phrasing for what they are trying to say. This skill will be reassessed in two years and compared to this year's results.

*Central Message:* Once again, a single student dropped the average for this skill below the target average. It is expected that a student giving an oral presentation will have one (and sometimes more) central message that is clear, consistent, and supported by the data. For the next two years, faculty will make sure that students giving oral presentations have a clear and succinct central message that they deliver in a compelling way such that the audience is very clear on the message and the conclusions. If the students do not accomplish this in their presentation, the faculty member will review the presentation and give the student ideas that could help them develop a clear central message supported by the data. This skill will be reassessed in two years and compared to this year's results.

### **Written Communication Assessment Results:**

The average score for the four students that were assessed is 2.75, which is below the 3.00 target for the average of all the skills in this outcome. In this outcome, students did not meet or exceed the target on four out of five written communication skills. These are Context of and Purpose for Writing, Genre and Disciplinary Conventions, Sources and Evidence, and Control of Syntax and Mechanics. This is far more than expected and illustrates the need for our graduate students to get more feedback from faculty and advisors on their writing in classes and on their thesis before it is turned into the Graduate College.

### **Written Communication Action Plan:**

Conducting action plans for four skills in this outcome will be difficult to do over the next two years, so it is proposed that in general, faculty will pay closer attention to written products from graduate students in the Geospatial Sciences M.S. program and give more feedback before a final product is turned in. If this is not working, then students that are having the most difficult time, and not showing significant signs of improvement, will be recommended to take a technical writing course to help them hone their writing skills overall. All these skills will be reassessed in two years and compared to this year's results to determine if any improvement has occurred and where it has occurred.

Context and Purpose of Writing: Students performed the worst in this skill, so more emphasis will be placed on this area during the next two years of faculty critiques of our graduate students' writing. For this skill, students are expected to demonstrate adequate consideration of context, audience, and purpose. They are also expected to show a clear focus of the assigned task(s) of the writing assignment or thesis. If the students are not demonstrating that they are performing adequately in these areas on their writing assignments and rough drafts of their thesis, faculty and advisors will inform the students of this, show them ways to improve, and if possible, have the students correct the problem areas and resubmit their assignments or subsequent drafts of their thesis.