

Written Communication Outcomes 1.1A.1, 1.1A.2; and Critical Thinking Outcome 1.5.3 COURSE: GSCI 685: Writing in the Sciences

Objectives: Students will effectively develop, express, and exchange ideas in the English language, . . . in writing . . . , with clarity and coherence. Students will recognize, analyze, criticize, evaluate, and formulate arguments in ways characterized by intellectual courage and reflective self-criticism.

By graduation students will:	Not Proficient 1 Point	Developing Proficiency 2 Points	Proficient 3 Points	Exceeding Proficiency 4 Points
<p>Write a <i>persuasive essay</i> that includes the following: a clear and debatable thesis, fully developed and supported ideas, clear organizational structure, effective consideration of opposing arguments, use of credible sources, appropriate documentation of sources, consideration of a target audience, and conventional grammar and mechanics. (1.1A.1)</p>	<p>Literature review lacks a clear and debatable thesis and it is unorganized and lack structural elements (headings and sub-headings). Opposing arguments are not addressed. Few credible sources are used, and sources are not appropriately documented or synthesized. Poor grammar and mechanics.</p>	<p>A thesis is provided, but it is imprecise and not clearly supported by the literature review. Structural elements are provided, but they are not logical nor is information sufficiently organized within them. Credible sources are used, but documentation is inconsistent and they are not well-synthesized. Opposing arguments are mentioned, but discussion/rebuttal is insufficient. Numerous grammatical and mechanical errors.</p>	<p>Clear and debatable thesis is provided, and is generally well-supported by the review of credible sources. A few literature gaps exist that need to be addressed for the thesis to be “fully-supported.” Sources are well-synthesized, but unnecessary summary/description of individual sources exist. Review is well-organized and includes logical structural elements. Opposing arguments are sufficiently addressed. Few grammatical and mechanical errors.</p>	<p>Clear and debatable thesis is provided. Credible sources used to support thesis, and sources are well synthesized with little-to-no unnecessary summary/description of individual sources. Review is comprehensive (with no obvious literature gaps), well-organized and includes structural elements logical structural elements. Opposing arguments are sufficiently addressed. Few-to-no grammatical and mechanical errors.</p>
<p>Produce a <i>discipline-specific document</i> judged proficient according to a department-approved rubric in the student’s major. (1.1A.2)</p>	<p>Poster title is wordy and not representative. Research question (can be a purpose, objective, or hypothesis) is not explicitly stated. Research justification is not provided. Data and methods are unjustified and unclear. Results are unclear and no visualizations are provided. Discussion/conclusion not provided. Verbose text with poor balance between text</p>	<p>Poster title is descriptive, but wordy. Research question is explicitly stated, but the question is imprecise. Research justification is provided, but it is unclear what the contribution of the current research is. Data, methods, and results are clear but unjustified. Visualizations are provided to complement results, but their message is unclear, and they are not tied to written material. Discussion/conclusion provided but lacks context and alternative approaches and</p>	<p>Poster title is concise and descriptive. Research question is explicit and precise. Research justification is provided but is not comprehensive. Data, methods, and results are clear and justified. Visualizations with a clear message are provided to complement results, but additional supporting graphics are needed. Discussion/conclusion provides context. Alternative approaches and explanations are discussed, but detail is lacking. Sufficient balance between brief</p>	<p>Poster title is concise, descriptive, and catchy. Research question is explicit, precise, and well-justified question. Contribution of research is apparent. Data, methods, and results are clear and justified. Sufficient visualizations with a clear message are provided to complement results. Discussion/conclusion provides context. Alternative approaches and explanations are sufficiently addressed. Sufficient balance between brief statements, bullets,</p>

	and visualizations. Poor poster design.	explanations are not addressed. An attempt is made to use brief statements and bullets, but the poster is still overwhelmed with text. Poster design is balanced.	statements, bullets, and visualizations. Poster is well-designed and balanced.	and visualizations. Poster is well-designed and balanced.
Produce a written document on a difficult question involving the disciplinary content of the student's major that subjects the student's reasoning to <i>sustained, intelligent criticism</i> according to the standards of that discipline. (1.5.3)	Report title is wordy and not representative. Research question (can be a purpose, objective, or hypothesis) is not explicitly stated in the introduction. Research justification is not provided in the introduction. Data sources and any processing/manipulation are not provided. Methods are unjustified and unclear. Results are unclear and no visualizations are provided. Discussion/conclusion does not summarize importance, justification, and question of the research, nor does it place research in context or provide guidance for future research. Alternative approaches and explanations are not considered. Incomplete information or wordy text force report under or above word limit.	Report title is descriptive, but wordy. Research question is explicitly stated in the introduction, but the question is imprecise. Research justification is provided in the introduction, but it is unclear what the importance/contribution of the current research is. Data sources are provided, but processing/manipulation are not clearly documented. Methods are clear, but unjustified. Results are clear and provide some complementary visuals, but the message of the visuals is unclear and they are not well-integrated with the text. Discussion/conclusion sufficiently summarizes the importance, justification, and question of the research, but context is lacking and clear guidance for future research is not provided. Alternative approaches and explanations are not addressed. Reports falls within word limit.	Report title is concise and descriptive. Explicit and precise research question is provided in the introduction. Research justification is provided but is not comprehensive. Data sources are provided and processing/manipulation is documented. Methods are clear and justified. Results are clearly summarized and accompanied by some well-designed visualizations, but additional supporting graphics are needed. Discussion/conclusion summarizes the importance, justification, and question of the research. Research is placed in context and guidance for future research is provided, but alternative approaches and explanations are discussed, but detail is lacking. Report falls within the word limit.	Report title is concise, descriptive, and catchy. Explicit and precise research question is provided in the introduction. Comprehensive research justification is provided in the introduction. Data sources are provided and processing/manipulation is documented. Methods are clear and justified. Results are clearly summarized and are accompanied by necessary, well-designed visualizations. Discussion/conclusion summarizes the importance, justification, and question of the research. Research is placed in context and guidance is given for future research. Alternative approaches and explanations are sufficiently addressed. Report falls within the word limit.

Department/Program: Geosciences/BS in Geosciences and BA in Environmental Geosciences

Assignment to meet 1.1A.1: Research Project Literature Review (see Appendix B in the syllabus)

Assignment to meet 1.1A.2: Research Project Poster (see Appendix D in the syllabus)

Assignment to meet 1.5.3: Research Project Report (see Appendix C in the syllabus)