

Critical Reasoning

Student Learning Outcome: Students will demonstrate university-level critical reasoning proficiencies through written expression.

The Value of Critical Reasoning

Critical reasoning is a form of higher order thinking and writing that requires students to analyze arguments based on the conventions of logic and coherence, distinguish sound premises from faulty ones, detect fiction from fact, discern strong from weak conclusions, recognize patterns of

cause and effect, determine consequences, evaluate sources, and become information literate. Critical reasoning provides the foundation for academic excellence, professional expertise, and informed citizenship.

Supporting Skills

1. Students will state clearly and describe comprehensively an issue or problem to be critically considered.
2. Students will draw, cite, and apply evidence from multiple, highly credible sources.
3. Students will articulate and defend a position with compelling arguments.
4. Students will offer a thorough exploration and demonstrate a nuanced understanding of the conclusions drawn through critical consideration of a problem or issue.

Course Content Criteria

(Courses must meet all categories in Content Criteria. In order to meet these requirements, potential instructors should coordinate closely with the Office of General Education and the Director of Critical Reasoning.)

1. Courses in this category have a sustained focus on the development of the skill of critical reasoning as expressed in written form.
2. Courses in this category provide multiple opportunities for formal, out-of-class drafting and substantial revision, based on closely commented instructor feedback, totaling 4500 to 6000 words of writing. (The equivalent of approximately 15–20 full pages of 12-point, double-spaced text, not including tables, figures, illustrations, bibliographies, and other extra-textual components.)
3. Courses in this category cultivate skills of information literacy to locate, evaluate, and use source materials that are reliable and relevant. In addressing the importance of using sources critically and appropriately, courses in this category address issues relating to the attribution of sources and plagiarism.
4. Courses in this category utilize pedagogical materials (textbooks, websites, published articles, etc.) specifically focused on the teaching of critical reasoning skills (e.g. cognitive biases, evidence, logical fallacies, argumentation, scientific method) as relevant to the discipline.
5. Courses in this category include, as a final assessment, an individually assigned, written, thesis-driven, research-based paper with annotated bibliography that requires students to demonstrate each of the skills in the Critical Reasoning Assessment Rubric (below).

Glossary

1. **Critical reasoning:** Following the lead of John Dewey, critical reasoning is the “active, persistent, careful consideration of a belief or supposed form of knowledge in light of the grounds that support it and the further conclusions to which it tends.” (Dewey, John. *Experience and Education*. New York, Macmillan, 1933.) More specifically, students engaging in critical reasoning analyze, conceptualize, interpret, synthesize, or evaluate information, and ground their claims in appropriate internal evidence or external sources. Critical reasoning promotes the values of clarity, accuracy, precision, consistency, relevance, sound evidence, validity, depth, breadth, and fairness.
2. **Argument:** A coherent series of reasons, statements, or facts intended to support or establish a claim(s) or hypothesis(es).
3. **Conclusion:** A statement that follows logically from the premises.
4. **Problem or issue:** The final assessment should be a paper that considers a range of evidence on an issue that is subject to debate in a given academic discipline. Issues may be political, social, ethical, scientific, or technological in nature, although this list is not exhaustive. In writing, the student should consider the available evidence and draw a conclusion from that evidence. The range of topics that can be considered is broad, but any topic chosen must be one that is not firmly settled by the evidence that exists.
5. **Drafting:** A process through which students will respond to the assignment in stages that might include brainstorming, outlining, creating an initial version of the assignment, peer editing, conferencing, and revision.
6. **Revision:** The process of assessing drafts for clarity, cohesion, precision, and argumentation.
7. **Information literacy:** Encompasses the discovery of information, the understanding of how information is produced, and the use of information according to the standards of critical thinking established throughout the course.
8. **Annotated bibliography:** A mechanism for justifying the relevance and reliability of the sources selected by the student and used in the final research paper. This can include a formal annotated bibliography, a literature review, or some other equivalent, discipline-specific format.
9. **Internal evidence:** The materials within a work that, when analyzed, reveal the relations of its parts to the whole.
10. **Sources:** Works of art, computer code, peer-reviewed scholarship, data, public records, authoritative reference works, histories, experience, oral histories, electronic media, or other forms of knowledge accepted by scholars and practitioners in relevant fields.
11. **Premise:** An initial statement, claim, assumption, or hypothesis that forms the basis of an argument.

12. **Position:** Broadly this is the argument the student is making and/or the conclusion they have drawn. In many instances, this will also be the thesis.

Critical Reasoning Assessment Rubric

Supporting Skills	Exemplary 4	Accomplished 3	Developing 2	Beginning 1
Explanation of Issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, with a clear, focused explanation of the relevance and importance of the issue. Sufficient background and context to the issue, necessary for full understanding, is given.	Issue/problem to be considered critically is stated, described, and clarified in a largely focused manner so that understanding is not seriously impeded by omissions. Some background and context to the issue is given, sufficient to provide a general understanding.	Issue/problem to be considered critically is stated but description is unfocused or incomplete. Little background or context to the issue is given, such that the relevance and importance of the issue is unclear.	Issue/problem to be considered critically is stated without clarification or description. No context or background to the issue is given.
Evidence and sources /premises	Evidence is properly cited from multiple, highly credible sources, such that the merits of multiple sides/viewpoints on the problem are clear. The evidence is skillfully interpreted and synthesized to demonstrate a clear and nuanced understanding of its relevance to the issue/problem.	Evidence is properly cited, drawn from relevant and credible sources; various viewpoints are considered, though there may be some limitations in terms of quantity or variety of sources and the viewpoints that are explored. The use of evidence shows some level of interpretation and evaluation, contributing to a reasonable, relevant analysis or synthesis, but some complexities of the issue/problem may be overlooked.	Some evidence is drawn from relevant and credible sources, but there may be instances of using unreliable or outdated information and instances where expert viewpoints are mentioned but not thoroughly explored. The use of evidence lacks significant interpretation or evaluation, resulting in a limited analysis or synthesis; some evidence may lack relevance and/or may not be properly cited.	Limited or no use of evidence from relevant and credible sources and/or the evidence presented is inadequate or unrelated to the topic and/or expert viewpoints are absent; the reasoning relies heavily on personal opinion or conjecture. The lack of evidence undermines the overall strength of the argument; evidence that is included is not properly cited.
Student's position.	The <u>position</u> is well-defined, clear, and strongly supported with compelling arguments, The position demonstrates a sophisticated understanding of the subject matter and its nuances, showcasing higher-order critical thinking skills. Limitations and biases of the	The position is defined and adequately supported with relevant arguments that consider a range of complexities related to the topic. The position shows a reasonable understanding of the subject matter and its nuances, displaying effective critical thinking skills. Certain limitations of the student's	The position is somewhat defined but lacks strong support with convincing arguments and may overlook some complexities related to the topic. The position displays a basic understanding of the subject matter but lacks deeper critical thinking insights and may not be fully developed	The position is unclear or poorly defined, lacking substantial support with weak or irrelevant arguments, overlooking complexities related to the topic. The position shows a lack of understanding of the subject matter and its nuances, displaying little evidence of critical thinking skills. Limitations in the student's position are superficially acknowledged or not acknowledged at all.

	student's position are implicitly or explicitly communicated.	position are implicitly or explicitly acknowledged.	or well-articulated. Limitations of the student's position are superficially acknowledged.	
Consequences and implications	The outcomes, consequences, and implications are thoroughly explored and demonstrate a nuanced understanding of how the <u>conclusions</u> impact the broader context. Consequences, significance, and /or implications are clearly articulated and future directions are considered.	The outcomes, consequences, and implications are adequately explored and demonstrate a reasonable understanding of how the conclusions impact the broader context. Consequences, significance, and /or implications are generally well-articulated and some logical next steps are enumerated.	The outcomes, consequences, and implications are superficially explored and demonstrate a basic understanding of how the conclusions impact the broader context. Consequences, significance, and /or implications are not fully developed or articulated and next steps may be absent, or not logical, if enumerated.	The outcomes, consequences, and implications are unclear or unexplored. Demonstrating a lack of understanding of how the conclusions impact the broader context. Consequences, significance, and /or implications are not articulated and next steps are absent.