

**Department of Physics**  
**University of North Carolina, Wilmington**  
**Learning Outcome Assessment Instruments: Research Paper**

**Goals:** This instrument is designed to be one tool for use in assessing Student Learning Outcomes, by means of an analysis of student competence in writing a scientific report describing an independent research project. It is *not* an assessment of student performance associated with any one course of study. The items to be assessed, although they may certainly reflect the student's course preparation, more generally reflect the student's acquisition of critical skills and competencies that the Department considers core objectives of the undergraduate physics curriculum. Those learning outcome objectives that are to be assessed by this instrument are as follows:

1. **Written Communication Skills:** Students will be able to write a well-organized, logical, scientifically sound research paper. Students should display effective communicative abilities in the categories listed below.
  - a. **Thesis Statement**
  - b. **Introduction**
  - c. **Body**
  - d. **Organization – Structural Development of the Idea**
  - e. **Conclusion**
  - f. **Mechanics | Usage**
  
2. **Scholarly Research Skills:** Students will demonstrate proficiency in analyzing and critiquing the development of physics ideas in published texts, reports, and research proceedings. Students should display effective reasoning in the categories listed below.
  - a. **Citations**
  - b. **Quality of References**

**Scoring:** The students will be assessed on each of these categories according to a 1–4 scale, broadly interpreted as follows:

- |   |   |
|---|---|
| 1 = competence in the category not demonstrated     | 3 = average degree of competence in the category demonstrated     |
| 2 = minimal competence in the category demonstrated | 4 = exceptional degree of competence in the category demonstrated |

## Research Paper Scoring Rubric

Name \_\_\_\_\_ Date \_\_\_\_\_

Competence Level	1	2	3	4
<b>Thesis Statement</b> Score _____	The statement is incomplete and/or unfocused.	States the paper's purpose in a single sentence.	Clearly states the paper's purpose in a single sentence.	Clearly and concisely states the paper's purpose in a single sentence, which is engaging, and thought provoking.
<b>Introduction</b> Score _____	There is no clear introduction or main topic, and the structure of the paper is missing.	The introduction states the main topic, but does not adequately preview the structure of the paper.	The introduction states the main topic and previews the structure of the paper.	The introduction is engaging, states the main topic and previews the structure of the paper.
<b>Body</b> Score _____	Each paragraph fails to develop the main idea.	Each paragraph lacks supporting detail sentences.	Each paragraph has sufficient supporting detail sentences that develop the main idea.	Each paragraph has thoughtful supporting detail sentences that develop the main idea.
<b>Organization – Structural Development of the Idea</b> Score _____	No evidence of structure or organization.	Logical organization; organization of ideas not fully developed.	Paragraph development present, but not perfected.	Writer demonstrates logical and subtle sequencing of ideas through well-developed paragraphs; transitions are used to enhance organization.
<b>Conclusion</b> Score: _____	Conclusion is incomplete and/or unfocused.	The conclusion does not adequately restate the thesis.	The conclusion restates the thesis.	The conclusion is engaging and restates the thesis.
<b>Mechanics   Usage</b> Score _____	Numerous and distracting errors in punctuation, capitalization and spelling. Numerous and distracting errors in sentence structure and word usage.	Many errors in punctuation, capitalization and spelling. Many errors in sentence structure and word usage.	Almost no errors in punctuation, capitalization and spelling. Almost no errors in sentence structure and word usage.	No errors in punctuation, capitalization and spelling. No errors in sentence structure and word usage.
<b>Citations</b> Score _____	Citations are absent.	Few cited works, both text and visual, but those listed are done in the correct format.	Some cited works, both text and visual, are done in the correct format. Inconsistencies evident.	All cited works, both text and visual, are done in the correct format with no errors.
<b>Quality of References</b> Score _____	There are virtually no sources that are professionally reliable. The reader seriously doubts the value of the material and stops reading.	Most of the references are from sources that are not peer reviewed and have uncertain reliability. The reader doubts the accuracy of much of the material presented.	While most references are professionally legitimate, a few are questionable (e.g., trade books, internet sources, popular magazines, ...). The reader is uncertain of the reliability of some of the sources.	References are primarily peer reviewed professional journals or other approved sources (e.g., government documents, agency manuals, ...). The reader is confident that the information and ideas can be trusted.