Final Project Guidelines

Phys 360 | Fall 2025

Annotated Bibliography and Outline (Due 10/23, 10:00 AM)

Annotated Bibliography

There are many types of annotated bibliographies. The purpose of *this* annotated bibliography is to summarize sources so that you can refer back to them for writing your paper. Each entry should include:

- The full citation of your source. You do not need to use a specific style, but be consistent throughout your bibliography. If you don't have a preference, use APA.
- An overview summary (2-4 sentences) of what the article is about.
- More detailed summary (3-7 sentences) of information from the article that you will utilize in your paper.
- (As needed) Direct quotes (indicated by quotation marks) with the page numbers cited that you may use in the paper.

Additional guidelines:

- The annotated bibliography must be in your own words, unless you use properly attributed direct quotes.
- You must include at least three sources. One of these may be the article you initially submitted in your first HW assignment and/or an article I gave you. The other two must be papers from a peer reviewed journal or a textbook. Additional web-based sources (beyond your three articles) may also be listed (with full citations) but they must come from a scientifically reputable source. Note that Wikipedia can be helpful for gaining an overview and identifying further peer-reviewed citations, but it cannot be used as a primary source.

Outline

The purpose of this outline is for you to organize your thoughts and demonstrate the logic of your paper. Your outline should clearly indicate what the section headers and subheaders will be. Under each header, the outline should be detailed enough that I can tell what each of the main points will be. There are no specific formatting requirements for your outline.

Paper Draft (Due Thursday 11/13, 10:00 AM)

Your paper draft should be a complete paper that meets the paper guidelines:

- A strong paper is between 3000 ± 250 words of text (not including citations). Shorter will not be sufficient detail, and longer will be too detailed and/or wordy. If you are finding your paper too long or too short, see me for advice on where to elaborate/cut.
- Your paper should be appropriate to the audience (targeted toward someone taking Phys360). This means you will need to explain concepts and jargon thoroughly, show derivations (if need be) and include relevant equations.
- Your language should be precise and professional.
- All references must be cited within the text, and the full citations must be included at the end of the paper. Your paper must include at least three sources (see annotated bibliography guidelines).
- Use quotations sparingly. You are expected to fully explain technical ideas in your own words, rather than use quotes.
- Figures must be either your own work or they must be properly attributed.
- The UMD academic integrity policy will be strictly enforced. If you have questions about what constitutes plagiarism, please ask.

If there is something you're having difficulty with, please ask. You are welcome to even send me excerpts of text before the deadline for feedback. After completing the paper draft, you will receive peer feedback and feedback from me.

Peer Reviews (Due Tuesday 11/25, 10:00 PM)

If you submit your paper draft on time, you will be assigned one paper to peer review. If you do not, you will not be eligible to complete your peer review and will be assigned 0 for the peer review. I will give you a short rubric to assess your peer, as well as several prompts for written feedback. See below for the rubric. Your peer review grade will be based on completion and accuracy of your review.

Final Paper (Due Thursday 12/04, 10:00 AM)

Your final paper should meet the guidelines listed under “Paper Draft” assignment and incorporate the feedback from your peers and me.

	Beginning	Developing	Succeeding
Depth of understanding of the topic	Paper does not demonstrate understanding of the topic There may be substantive misunderstandings of material.	Accurately covers physics concepts, but may be missing important nuances. Demonstrates understanding for a popular audience, but not beyond that.	Demonstrates thorough understanding of the topic, drawn from multiple sources. No discernible errors.
Organization and flow	Paper is missing significant sections. OR No organization of ideas	Has the essential components of a research paper but the text needs to be reorganized.	The paper is organized and easy to follow. Sections are clearly labeled. Text flows smoothly between sections
Appropriate level of writing	No effort made to tailor the paper to the appropriate audience. OR Not enough of the paper is submitted to allow this category to be judged.	The paper is written at too high of a level, for example, assuming knowledge of jargon or equations beyond the scope of the class. OR The paper is written at a general audience rather than a physics student audience. The paper may be missing relevant equations or deep discussion of physics topics	The paper is written at a level understandable to 360 classmates. Jargon and concepts are explained thoroughly, but descriptions may rely on knowledge of topics covered in 360 (or prerequisite classes). Relevant equations are used.
Precise, professional language	No effort made to use precise professional language. OR Significant grammar or spelling errors that cause confusion for readers.	The text occasionally uses vague words or meaningless adjectives. Explanations are somewhat difficult to follow. OR A fair number of minor spelling, grammar, or punctuation errors, but the errors do not cause significant confusion.	The text is written clearly with enough precision to communicate ideas clearly. Language is appropriate and professional. Explanations are easy to follow. Evidence of careful proofreading.
Appropriate use of sources	Fewer than 3 works cited.	The paper cites 3 or more sources. There may be claims made in the text which need additional references. The paper may over-rely on use of quotations to convey technical material.	The paper cites 3 or more sources. The work is appropriately cited within the text. Key technical details are summarized in the author’s own words (rather than relying on large quotes).

Poster Session (Due 12/11, 2:00pm, last day of class)

The last day of class will be a poster session where you present your research topic to the rest of the class. You will be given a large post-it note to write your findings on. You can freehand text on the post-it note, but I recommend that you print out text on printer paper and glue (or tape) it onto the post-it note.

The class will be divided up into groups. Each group will have approximately 40 minutes to present your poster in an informal format. You should treat your poster as a tool to help you communicate your results. Your poster will be evaluated on (1) your ability to verbally communicate your findings to your peers and (2) the extent to which your poster helps you communicate the important aspects of your project to the audience.