Literature Review

Requirements

- Provide a 3 page (single spaced) document (in the same IEEE style used for the LaTeX tutorial)

- Your review must discuss a minimum of 3 journal articles
  - If you are unable to locate enough journal articles related to your subject, you may use other reliable sources

What is a Literature Review?

- Whatever the subject of your final project, others have likely written about it.
  - Research results have been published in journals and conference proceedings
  - Experts in the field have informed opinions on the subject
  - Your subject has a history and/or exists within the context of a larger field

- A Literature Review synthesizes the existing writing on a particular subject

What makes a Literature Review different from a research paper?

- A literature review is often part of a research paper
  - Ideally, a research paper should start with the author researching the existing literature
    - To explore the experts' understanding of the subject
    - To identify common conclusions
    - To identify any contradictions or controversies
  - In a research paper, after analyzing the existing literature, the author presents an argument, backed up by original or cited research.
  - A Literature Review demonstrates this analysis.

What isn't a Literature Review?

- A Literature Review is not about your own argument, or your own opinion, or your own personal experience regarding a subject.

- Yes, your own biases and opinions may dictate what sources you choose to review and how you choose to synthesize them, but the goal is to choose good sources and to treat them fairly.

Possible approaches

- You can:
  - Provide a well-sourced history of your subject
  - Describe current research related to your subject
  - Talk about practical applications involving your subject
  - Discuss controversies involving your subject

- Important: do not try all (or even more than one, in most cases) of these approaches in the same review.
  - Pick a clear angle and stick with it

More resources on writing a Literature Review

- Writing Center at UNC Chapel Hill
  - http://writingcenter.unc.edu/handouts/literature-reviews/

- Ten Simple Rules for Writing a Literature Review
  - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3715443/

Will this be part of my Final Project?

- It can be, but it doesn't have to be.
- You are highly encouraged to write this with the final project in mind
  - I recommend that you write something that would be useful as part of your final project.
  - This will also save you some work at the end of the quarter.

- Use this as an opportunity to collect information, perspectives, and useful figures and illustrations about your subject.

- If your Final Project is not approved or you change projects, you won't have to write a new Literature Review.
  - But your Review must at least be relevant to your original project proposal.

Citing reliable sources

- What makes a source reliable?
  - Is it fact checked?
  - Peer reviewed?
  - Written by a noted expert in the field?
  - Published in a respected magazine?
  - Or is it just a website created by an opinionated hobbyist?

Best sources:
Peer reviewed journals.

- Many full-text academic journals are available on the Web of Science
  - http://library.ucsc.edu/find/databases
  - Under "Popular tools" select "Web of Science"
- Full access is available on campus
- Off-campus you'll need to put in a valid number from your student ID.
  - This must be activated at one of the libraries.

Need research help?

- Talk to your friendly local reference librarian.
  - Both the Science & Engineering Library and McHenry.
- Or call one on the phone
  - Call 831-459-5171 (Mon-Fri 1pm–5pm)
- Or get free help from a person 24/7 online.
  - http://guides.library.ucsc.edu/ask-a-librarian

IEEE Style Guide

- This project should be formatted using the IEEE style guide
  - You may use LaTeX as you did in the earlier tutorial
  - You are also welcome to use an IEEE document template, such as: https://www.ieee.org/publications_standards/.../2014_04_msw_a4_format.doc

- Make sure citations are in proper format

- Example citation[1]

[1] R. L. Myer, "Parametric oscillators and nonlinear materials," in Nonlinear Optics, vol. 4, P. G. Harper and B. S. Wherret, Eds. San Francisco, CA: Academic, 1977, pp. 47-160.