

PHY431 Honors Project

Honors credit for PHY431 will be based on a written technical paper describing an assigned topic in optics.

You need to select a topic by November 1.

An outline of your paper is due on November 15.

The paper is due on December 1.

The boundary conditions are:

Paper

Cover page: title, author, and 1 paragraph abstract

Text: length to be 10 - 15 pages: 1.5 line spacing, 1" margins, pagination, citations and bibliography

Attach graphics, tables at end of paper: do not include in body.

Bibliography page: include all resources; must contain at least 2 journal articles

Submission: 1 hard copy and 1 doc, docx or pdf file (email to cwlai@msu.edu)

Grading

Pass/Fail.

The grade is determined by (1) the depth of research, (2) your understanding of the topic, and (3) overall readability. Although you are encouraged to start by looking up web-based information, your references should be books and journal articles.

You are welcome to swap topics based on your interests (just let me know).

Example Topics

Metamaterials and invisibility

Optical cooling or trapping

Optical lattices (atomic traps)

LIGO LIGO - Laser Interferometer Gravitational Wave Observatory

Adaptive optics

Linear optical quantum computing

Near-field scanning optical microscopy (NSOM)

Confocal microscopy

PillCam video capsule

LASIK or Lasik (laser-assisted in situ keratomileusis)

Keratotomy

EUV lithography

Single molecular spectroscopy