Optics I, PHY431, Spring 2017

Group Projects

Each group will give a presentation of 15 minutes on the assigned topic. Groups can propose a different topic, but it has to be approved by the instructor at least one week before the date scheduled for the presentation.

Presentations will be graded in terms of content, clarity, and class engagement (throwing candy to students to encourage question answering/discussion seems to work amazingly well). You can use any multimedia tool, propose in-class activities, show demos or videos, so be creative! Just let me know in advance if you need special technology. Every member of the group will have to contribute to the presentation, and the grade is individual.

Important! Regarding content: the optics should be presented at a level on par with the level of the class. E.g., if you present on how a rainbow works you should not be vague or general about how light refracts in a water droplet. You need to show us the optics: make as an accurate ray tracing diagram, explain the application of Snell's law and refraction, explain why the angles are what they are etc.

Feel free to consult with me prior to your presentation.

You may choose your topic/date from the following list. Email Prof. Comstock your selection. First come first served. We will update the schedule on D2L. You may also propose an alternate optics topic agreed upon by you and your partner, so long as there is a free slot. Make your selection by Tuesday, January 24. Presently we have 17 students enrolled; so, one group of three will be accepted.

GROUPS:

Group 1: Feb 21. Fiber Optics – Student 1 and Student 2

Group 2: Feb 28. The Eye and Eyeglasses –

Group 3: Mar 14. The Rainbow –

Group 4: Mar 21. Cameras and Photography –

Group 5: Mar 28. Lasers and LEDs –

Group 6: Apr 4. Color Perception –

Group 7: Apr 11. Super resolution microscopy –

Group 8: Apr 18. Ultrafast lasers (e.g., femtosecond pulses) –