Syllabus

Course information:

- **Lecturer**: *Professor Leo Radzihovsky*
- **Office**: *Duane Physics F623* (*Gamow Tower*)
- **Phone**: *303-492-5436*
- **Email**: *radzihov@colorado.edu (best way to reach me)*
- **Office Hours**: *Tuesday, Thursday 3pm - 4pm (or by appointment)*
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- **Administrative Instructor**: *Susanna Todaro*
- **Office**: *Help Room in Duane Physics*
- **Email**: susanna.todaro@colorado.edu
- **Office Hours**: *Monday, Wednesday 3pm - 4pm (or by appointment)*

- **Class meets**: *Tuesday, Thursday 11am - 12:15pm, in Duane G1B30*
- **Home page:** http://www.colorado.edu/physics/phys1230/
- **Grader/TA**: *Susanna Todaro*
- **Text**: "Seeing the Light" by Falk, Brill, Stork
- **Course description**: *An elementary introduction to light, with focus on geometrical (ray) optics*
- **Prerequisites**: *algebra, physical science (at a high school level), interest and desire to learn*

- **First day of class**: *Tuesday, January 14, 2014*
- **Homework (30%)**: *due weekly Tuesdays in class, unless otherwise specified*
- **Class participation clickers (5%)**: *attendance and participation resolves grade ties*
- **Midterm exam #1 (20%)**: *in class, Thursday, Feb 20, 2014*
- **Midterm exam #2 (20%)**: *in class, Tuesday, April 15, 2014*
- **Final exam (25%)**: *Duane G1B30 at 4:30-7pm, May 5, 2014*
- **Last day of class**: *Thursday, May 1, 2014*

Course description:

This course is an elementary introduction to light, a form of electromagnetic waves visible to human eye. Students will be introduced to fundamental properties of light using waves (wavelength, frequency, speed, intensity, spectrum) and rays (refraction and reflection) descriptions. Building on these fundamentals, we will study apertures, mirrors, and lenses and based on these will learn about operation of microscopes, telescopes and cameras on one hand and an eye, color and color perception on the other.

Course outline:

- **Fundamentals of light**
  - electromagnetic waves
  - light properties
  - ray (geometric) optics
- **Applications**
  - apertures, lenses, mirrors
  - optical instruments
  - the eye
- **Perception**

- color
- image processing