Today:

- Admin
- Framing
- Cameras
- Lenses
  - Lens laws
  - Typical lenses
  - Focal lengths
  - Aperture, depth of field

JH Bring to class:
Closeup lenses
extension tubes
Iris
View camera

Please make a table tent with your name on it

- Admin:
  - Office hours: Monday 12 pm here or ECME 220, and by appointment.

PHOTOGRAPHY FUNDAMENTALS

1) Framing
2) Camera
3) Lenses
4) Exposure Control
5) Resolution

1) Framing
   a. #1 rule of photography: Make The Subject Fill The Frame
      Image dimensions of less than 700 pixels won't be accepted.

b. Know your scale. Take an extra image with a ruler in it.
You'll need to specify your FOV = Field of View
i.e. "top to bottom was 10 cm"
Sometimes the image will supply the scale, such as the diameter of a jet.

04.Photog1
Wednesday, January 27, 2010 2:23 PM

c. Work it. Take many images, from varied POV = Points of View

- Get close, pull back. Move around the sides.
- Try a mirror to see the back.
- Consider making a stereo image
- Try video, a few seconds or minutes

Video tutorials
http://vimeo.com/videoschool/101

Vimeo = upscale YouTube.
FV videos will be posted there by FlowVis@CUBoulder

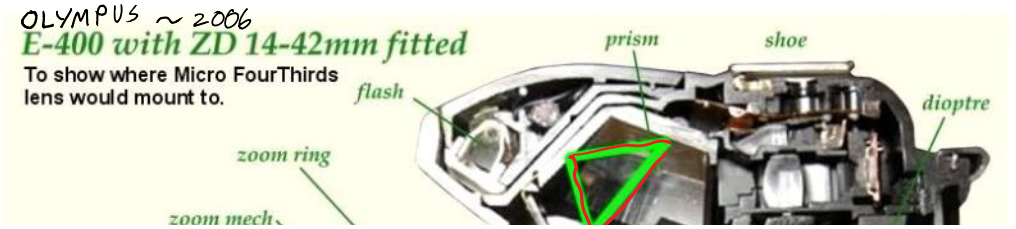
- Change the lighting.
- Try time lapse (smartphone camera app is easy to use)
- Consider the motion: Capture the whole track, and also zoom in on a particular moment/location
- Plan a second try. Look at results at full resolution first, not just on camera LCD. Takes time.

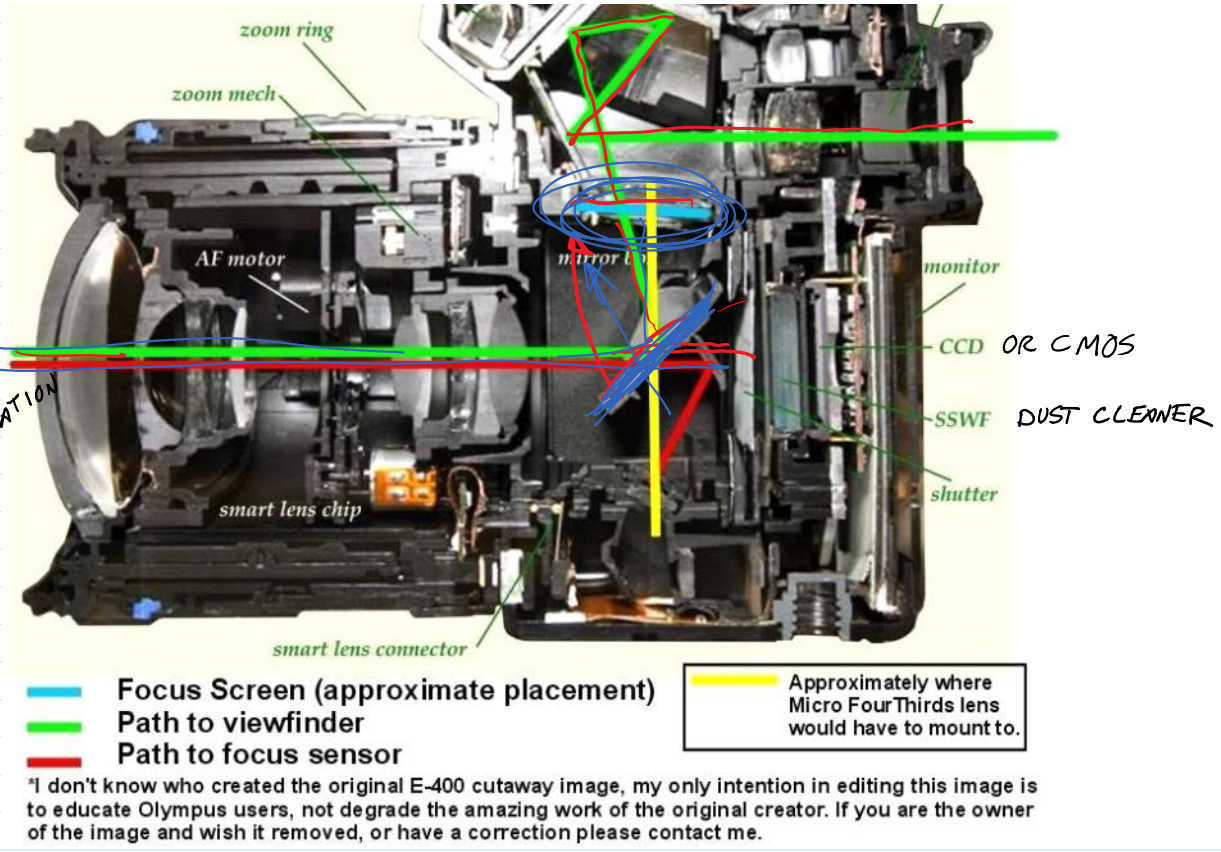
Small groups: Discuss what POV you will start with, and how you will vary it. Which of these techniques will you try?

2)Cameras: Roughly 3 common types, but technology is changing quickly

DSLR	Point and Shoot	Camcorders
Digital Single Lens Reflex	PHD Push Here Dummy	

DSLR





http://media.photobucket.com/image/dslr%20optics%20diagram/Mikefellh/E-300Stuff/WhereM43lensWouldBe.jpg

AE = auto Exposure
AF = Auto Focus

Mirror flips up when shutter triggered = REFLEX.
For long exposures, lock mirror up to prevent vibration.
Use circular polarizers on lens front to get past partial mirrors into AF and AE sensors

PHD: Small sensors; lower resolution even if mpx the same; diffraction limits approached?
Often no lens choices. Can still add close-up lens.
Composition is harder. LCD screens tough to use in sun, don't show fine focus (on low end cameras). Usually can't preview depth of field.
Much lighter, more portable.
Comparable performance at prosumer level.

CAMCORDERS: primarily for video. Records to disk or solid state memory. Usually longer record time than still cameras. Built-in effects, maybe editing, quieter mechanisms, set white balance, better microphones

Camera technology is changing rapidly. Lines between designs are shifting. Superzooms,

for example.

3) LENSES

Minute paper. What are the numbers on your lens? What do they mean?