**Photography 1**

**TODAY:** Admin
- Framing
- Cameras
- Lenses
  - Lens Laws
  - Typical Lenses
  - Focal Lengths
  - Aperture

**Admin:** Office Hours
- M, W 4:30-5:30 ECME 220
- Latte Break 4-4:30 all are welcome

**Photography Fundamentals**

**Minute Paper:** What questions do you have about your camera?

1. Framing
2. Camera Types
3. Lenses
4. Exposure Control
5. Resolution

**1) Framing**

#1 Rule of Photography

Make the Subject Fill the Frame

- Mask off distracting features
- Keep a scale
  - Photograph a ruler
- Field of View (FOV)
Field of View (FOV) “top to bottom” x cm

WORK IT

POV = Point of View

Change perspective
Mirror to see back side
Change lighting
MANY pictures different realizations

Consider stereo

Video – few seconds or minutes
Consider motion – see whole track zoom in

TAKE LOTS of images

TWEAK framing POV & FOV

2) CAMERAS

SLR vs Point + Shoot PHD Push here Dummy

8

15

Single lens Reflex

PhD

Mirror
ground glass
screen
Focusing screen
lens

Mirror body

Sensor
CCD
CMOS

Mirror flips UP = Reflex

Long exposures need to Lock Mirror UP

Small Sensors
No lens choice

3) LENSES

Defined by FOCAL LENGTH & APERTURE

5 - 60 mm

1 - 3.5 - 5.3
Apertures

\[ \frac{W}{T} \]

\[ \frac{28-135}{3.5-5} \]

\[ \frac{10.5}{1,35-3.6} \]

\[ \frac{8-200}{0.45 \text{ m} / 1.5 \mu} \]

\[ \frac{59-259 \text{ mm}}{1.8 \text{ - 4.8}} \]

**FOCAL LENGTHS**

- \( f \) = distance from lens to sensor
- \( f \) ↑ For objects seem closer

**Zoom in** \( \frac{T}{W} \)

- Tight
- Wide

- Tele
- Long
- Short

\[ \text{ZOOM = Range of focal length} \ f \]

Next: Lens Laws