Chapter 2 pages 11-top of 14 (you can skip the section from rangefinders to the end)

Single-lens-Reflex

- Reflex Mirror
- Focusing screen
- Pentaprism

Chapter 3

Film Speed

- Slow
- Fast
- ISO rating

Grain

- Fine grain
- Coarse Grain

Tonal Range

Contrast

Diagram page 27

Outline for review chapters 4,5,6

F-stop 1.4 2 2.8 4 5.6 8 11 16 22 32

Shutter speed (fractions 1/#) 1 2 4 8 15 30 60 125 250 500 1000

[The terms **lens aperture** and **f-stop** are often misunderstood and confused; lens aperture refers to the physical lens opening and f-stop represents a measurement of that opening]

Aperture

F-Stop

Fast Lens

Slow Lens

Focal length and angle of view

Normal Lens

Wide-angle lens

Telephoto Lens

Zoom Lenses

Depth of Field (DOF)

- Refers to the depth of the zone that is visibly sharp in the picture, from the closest to the farthest points of the scene.
    - Controlled by three factors
        - Lens Aperture (briefly explain how this effects DOF)
        - Distance to subject (briefly explain how this effects DOF)

- Lens focal length (briefly explain how this effects DOF)

Guess Focusing

Macro Lens

Ultrafast lens

Fisheye lens

Shutter - A curtain (or set of blades) that blocks light from entering and striking the film

Shutter Speed = Interval of time the shutter stays open

- Slow Shutter
- Fast Shutter

1/1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/250, 1/500, 1/1000 – Whole shutter speeds

Represented as whole numbers – drop the fraction

1, 2, 4, 8, 15, 30, 60, 125, 250, 500, 1000 – Whole shutter speeds

- Movement from one to another on either side of it indicates a movement of one **full-stop**
- Each full stop is half or double depending on which way you go.
- 1/60 is more than 1/125 – 1/60 → 1/125 is half the amount of time or one-stop less time
- 1/60 is less than 1/30 – 1/60 → 1/30 (or 60 to 30) is double the time or one-stop more

B for Bulb

Controlling Movement

- Freezing movement
- Creating blur
- Panning

- Camera Shake = Accidental movement that is one of the most common cause of unwanted blurring.
    - Simple rule: Turn the focal length or your camera into a fractional number and use at least that speed when photographing with that lens.
        - 50mm = 1/60
        - 105mm = 1/125
        - 250mm = 1/250 or faster
        - **** Steadying the camera illustration on page 6

Exposure - the amount of light that strikes the film when you press the shutter button to take the picture

Four factors that contribute to a good film exposure

1.

2.

3.

4.

Full f-stop and shutter speeds

f-stops 2 2.8 4 5.6 8 11 16 22

shutter speeds 1/1 1/2 1/4 1/8 1/15 1/30 1/60 1/125 1/250 1/500 1/1000

- The combination of these controls determines just how much light hits the film
- **** Each full f-stop or shutter speed setting lets in <u>half</u> as much light as the setting before it, and <u>doubles</u> the light of the full setting after it.

- Reciprocal relationship

Film/ISO Speed

Faster (more grainy) 1600 800 400 200 100 50 25 Slower (less grainy)

Each film speed represented here is one stop apart from the one before it or after it.

400 is two times as fast as 200 or the equivalent of one f-stop
800 is four times as fast as 200 or the equivalent of two f-stops

Light Meter

- *** Meters read the light in a scene and recommend an f-stop shutter speed setting that produces a **middle gray**, which is defined as the average gray on a scale from white to black.
    - Gray card

- Most scenes will include a range of tones from light to dark, if they average out to gray the meter will be accurate.
    - Problem areas are when you have overall light, overall dark, or extreme differences in lights and darks.

Handheld light meters

- Reflected light

- Incident light

Metering patterns – Not available on all cameras

- Centerweighted metering

- Multisegment metering

- Spot metering

Exposure modes

- Manual
- Program autoexposure – (P)
    - program shift
- Aperture-priority autoexposure – (A or Av)
- Shutter-priority autoexposure – (S or Tv)

Exposure strategies

- Overall meter reading
    - If mostly light areas add a little more light
    - If mostly dark areas reduce the exposure
- Averaged meter reading

Gray Card

- Provides middle gray tone for your meter to read (18% gray)
- Place in front of subject aimed towards the camera
- Take the meter reading from the card only; **make sure that you don't read light from the area around the card and that you don't cast a shadow or block the light source while you are taking a reading**.
    - Note: you need to fill the viewfinder with the gray card when you take the reading. It is not necessary to have the camera focused to take a meter reading
    - Note: You need to be in a manual setting so the exposure stays locked when you move your gray card out from in front of the camera (In any auto exposure mode you must use the autoexposure lock)
        - If when pointed at the gray the meter says to use f/8 at 1/125 that is the combination you use. The meter might tell you to use another exposure like f/4 at 1/125 when you remove the gray card for the same scene.
    - Most useful when you are photographing still-life arrangements, formal portraits, and other stationary subjects

Bracket exposures:

f-stops 2 2.8 4 5.6 8 11 16 22

shutter speeds 1/1 1/2 1/4 1/8 1/15 1/30 1/60 1/125 1/250 1/500 1/1000

Full stop bracketing example

Meter reads f/4 at 1/250 – to bracket f-stop use f/2.8 at 1/250, f/4 at 1/250, f/5.6 at 1/250
Meter reads f/4 at 1/250 – to bracket shutter-speed use f/4 at 1/125, f/4 at 1/250, f/4 at 1/500

f-stops 2 2.8 4 5.6 8 11 16 22

shutter speeds 1/1 1/2 1/4 1/8 1/15 1/30 1/60 1/125 1/250 1/500 1/1000

Partial bracketing with example

- Making extra exposures only in one direction – usually one at initial reading and the other two to allow in double the light
- Safe because negatives with a little more exposure are almost always easier to print than negatives with a little less exposure

Meter reads f/5.6 at 1/250 – to bracket f-stop use f/5.6 at 1/250, f/4 at 1/250, f/2.8 at 1/250
Meter reads f/5.6 at 1/250 – to bracket shutter-speed use f/5.6 at 1/250, f/5.6 at 1/125, f/5.6 at 1/60

Methods of adjusting exposure

Manual Adjustment

Autoexposure compensation setting

Film speed adjustment

Common Exposure problems

Backlighting

Low Light