

141 midterm review

FILM EXPOSURE

Exposure is controlled by:

1. f/stop (or aperture) located in the lens
2. Shutter speed. The shutter is:
 - a. located in the camera body on a 35mm single-lens reflex
 - b. located in the lens on a 4x5 view camera

The B setting holds the shutter open for as long as the shutter release is held.

The X setting on the shutter is for electronic flash synchronization, M is for flash bulbs.

The T setting is for long exposures. Pressing the shutter once on T opens the shutter, pressing it again closes the shutter.

Equivalent exposures are adjustments made to shutter speeds or f/stops which change a visual effect without altering film or print density. Example: changing from f8 at 1/125 to f11 at 1/60, increases the depth of field in the scene while maintaining an equal exposure.

FILM CHARACTERISTICS

1. a. sensitivity b. contrast
c. resolution d. grain
2. Doubling or halving the ISO requires a one stop change in exposure.
3. High-speed films (ISO 400, 3200) have: more grain and sensitivity, less contrast and a lower resolution.
High speed films can be used in low light.
4. Medium speed films (ISO 100, 125) have: less grain and sensitivity and higher resolution and contrast than high speed films.
5. Low speed films (ISO 50) have: less grain and sensitivity than higher speed films, but more contrast and a higher resolution than faster films. Low speed films require more light than medium or high speed films.

LENSES

Lenses vary in both focal length and speed.

A fast lens opens to a wider aperture.

Normal lens for a film SLR 35mm camera-50mm.

Normal lens for a 4x5 view camera-135-150 mm.

This is often referred to in inches, i.e. a normal lens on a 4x5 is a 6" lens.

View camera lenses:

- a. Are slower.
- b. Stop down to smaller apertures (f64 or f90)

Enlargements should be made using the normal lens for that film format.

Short or Wide-angle Lenses

1. Common wide angle lenses for a 4x5 view camera: 90mm and 75 mm
2. Give a wider angle of view than a normal lens.
3. Have more depth of field than longer lenses.
4. Increased feeling of space.

Long or Telephoto Lenses:

1. Common long lenses for a 4x5: 210mm, 300mm
2. Give a narrow angle of view.
3. Are generally slower than wide lenses.
4. Less depth of field than shorter lenses.
5. Compress space.

DEPTH OF FIELD- The area of the image in front and back point of focus, that falls within acceptable focus.

Depth of field (DOF) is determined by:

1. F/stop (smaller apertures increase DOF) i.e. f 11 gives more depth of field than f8.
2. Camera subject distance.
The closer the subject, the less DOF
3. Lens focal length (the shorter the lens the greater the DOF -- i.e. a 90mm lens offers more DOF than a 150mm lens).
4. On a view camera the depth of field can be controlled with the camera's swings and tilts.

VIEW CAMERAS

1. Swinging and tilting the lens board on a view camera controls depth of field.
2. Swinging and tilting the back of a view camera controls perspective -- the shape of the subject.

Advantages

1. Large negative size (4x5s require only 2x enlargement for 8x10 print).
2. Depth of field and perspective control.
3. Leaf shutters synch. with flash at all speeds.
4. Less grain & better resolution than 35 or 2^{1/4}
5. Negatives can be developed individually

Disadvantages

1. View cameras have longer & slower lenses (150mm) than 35mm cameras.
2. Upside down viewing.
3. Use leaf shutters-- slower and increases cost of each lens.

THE ZONE SYSTEM is an approach to film exposure and development which offers more precise control of each negative.

1. Film exposure determines low value density. To increase detail in shadows, increase exposure. Density of low values remains constant after first 50% of film developing time. That is, the shadows of a given scene will have approximately the same density whether the film is developed for 3.5 or 6 minutes. Developing film for a longer period does little to increase overall negative density.

2. High values are determined by film development. To make whites whiter in a print, time in the film developer should be increased.

3. With sheet film, low values should be placed and high values should be allowed to fall.

4. With roll film, high values should be placed and low values should be allowed to fall.

TERMS TO UNDERSTAND

Developer (both film or paper)

Converts exposed silver halide crystals to metallic silver.

Stop Bath (both film or paper)

Stops developer action. Water is used for stop bath with films. Diluted acetic acid is used for papers.

Fixer or Hypo (both film or paper)

Removes unexposed silver halide crystals.

Hypo Clear (both film or paper)

A chemical wash which removes chemicals from film or paper emulsions and shortens wash times. (Not used with RC papers.)

Photo Flo

Used to prevent water spots on film.

Burning:

adding exposure to an area of the print in order to make that area darker.

Contrast:

When printing, contrast is controlled with variable contrast filters. The higher the filter number the greater the contrast.

Because of their density and color, filters require varied amounts of exposure.

Dense (dark) term used to describe a negative with too much exposure -- overexposed.

A dense negative usually requires a low number filter.

Thin (light) term used to describe a negative that has been under-exposed. A thin negative usually requires a high number filter.

Film development time is determined by:

1. the temperature of the developer
2. the ISO of the film
3. the contrast range of the original scene

Dodging: decreasing exposure to an area of the print in order to make that area lighter.

Emulsion: the light sensitive, silver material, coating on both film and paper.

The emulsion is:

the dull side of film,
the shiny side of enlarging paper.

Flat: term used to describe a print with too little contrast

PRINT FOR THE WHITES:

Always give enough exposure for large white areas (the high values) to have detail and texture.

Only after whites have sufficient density can the proper filter be determined.

PHOTOGRAPHERS

Minor White: exploration of Zone System.

Influential East & West Coast photographer.
1940's -70's

Nicholas Nixon: large-format portraits.
Contemporary East Coast photographer.

Also, study the Zone Definition handout.

Practice Question:

If in a scene you are photographing, given the following:

You place your shadow in Zone III

The shadow reads f 8 @ 1/30

The sky reads f 8 @ 1/250

What is your exposure?

Answer: f 8 @ 1/125