

Your name: _____

Camera _____

Lens (focal length and lens speed): _____

EXPOSURE TESTS: COLOR BALANCE / THE ZONE SYSTEM / DYNAMIC RANGE / ISO & NOISE

The completed exposures for this project are due at the start of class, Tuesday, February 8. There are examples of each of these tests on the web site. I strongly recommend that you work slowly and methodically and take written notes for each exposure.

ASSIGNMENT OBJECTIVES

To master on-camera color-balance. To refresh and clarify critical aspects of exposure. To refine your understanding of contrast and dynamic range, as well as the relationship between exposure, digital values and corresponding tonal values in a print.

For the duration of this project, please use **ONLY** manual exposure settings. Set your resolution to the highest possible jpeg setting, use the least amount of compression, and turn off any special effects or adjustments (such as sharpening).

COLOR BALANCE EXERCISE

You will need a clean **WHITE** sheet of paper for this exercise.

Set your camera to its lowest ISO setting and make all exposures in **MANUAL** settings.

Locate a scene you wish to photograph that is illuminated **ONLY** by **natural daylight** and has a range of colors in the scene, including some neutral values (whites or grays).

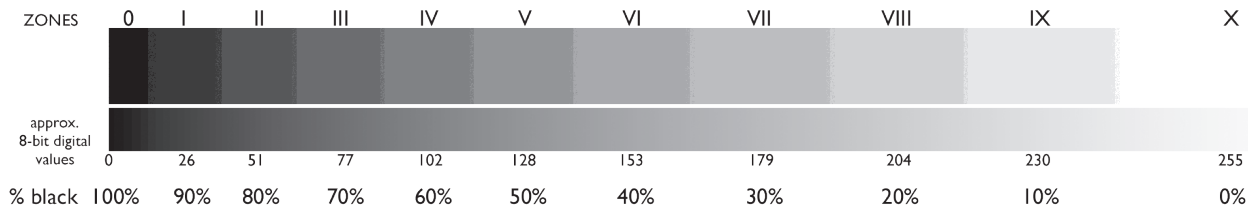
Photograph the exact same scene each of three ways:

1. With color balance set to **AUTO**
2. With color balance set to what you believe to be the correct **PRESET VALUE**
3. Use your white piece of paper to create a **CUSTOM** white balance, and use this setting for the third picture.

Repeat these steps for scenes illuminated by **tungsten**, **fluorescent**, and **mixed** (two or more combined sources) lighting conditions. You should have 12 total image files when you complete this portion of the assignment. Please make sure that you properly follow the prescribed sequence (don't mix the order of exposures up. If you mess up, delete files and start over).

Download your files and name and number them so they'll form an alpha-numeric sequence when you create a contact sheet. For example, call your Daylight files something like "01-DaylightAuto, 01-DaylightPreset, 01-DaylightCustom."

Based on your contact sheet, what conclusions can you draw about the various white balance settings you used and the subsequent results?



Create a contact sheet that's 3 across and 4 down at 300 dpi and add your name using the text tool. Print it out.

ZONE SYSTEM TEST

- Find an evenly lit surface of with little color and some texture - plain concrete is a perfect choice as is lined notebook paper in the shade.
- Manually color balance your camera using a white piece of paper in the same lighting environment as your surface.
- Set your ISO to your lowest possible setting and leave it there for this portion of the assignment.
- Follow the chart below and record the exposure settings for the following zones.

FRAME

EXPOSURE SETTINGS

1	meter and expose at the recommended settings (this is ZONE V)	_____@_____
2	remeter, then stop down five stops to place the area at ZONE 0	_____@_____
3	remeter, then stop down four stops to place the area at ZONE I	_____@_____
4	remeter, then stop down three stops to place the area at ZONE II	_____@_____
5	remeter, then stop down two stops to place the area at ZONE III	_____@_____
6	remeter, then stop down one stop to place the area at ZONE IV	_____@_____
7	remeter and expose at the recommended setting ZONE V	_____@_____
8	remeter, then open up one stop to place the area at ZONE VI	_____@_____
9	remeter, then open up two stops to place the area at ZONE VII	_____@_____
10	remeter, then open up three stops to place the area at ZONE VIII	_____@_____
11	remeter, then open up four stops to place the area at ZONE IX	_____@_____
12	remeter, then open up five stops to place the area at ZONE X	_____@_____

You should have 12 total image files when you complete this portion of the assignment. Please make sure that you properly follow the sequence (don't mix the order of exposures up. If you mess up, delete files and start over). Make another 3 across, 4 down contact sheet with your name on it.

Based on your contact sheet, how many zones between (and including) 0 - X can you count with texture and tonality?

Command-click on the main image layer to select the image frames. Go to Edit>Stroke and use black, 2 pixels, to make an outline of your selection. Use the text tool to add your name and the appropriate Zone numbers below each frame. Print it out.

DYNAMIC RANGE and FLASH FILL

Set your light meter to “spot” mode. Look for an outdoor scene that has very low contrast. Meter your highlights and record the recommended exposure. Next, meter your shadows and record the recommended exposure. Count (in stops) the difference between the two and record this number. If the scene doesn’t have a dynamic range (a difference in stops) of approximately 3 stops, keep searching until you find one that does. Once you find an appropriate scene, choose an exposure setting right in between the two extremes and use that setting to make a picture.

Sketch the resulting histogram.

Repeat this procedure with scenes that have six and nine + stops difference.

Frame 1 - Very low contrast (approx. 3 stops) _____@_____ _____@_____ _____ _____@_____

SHADOW HIGHLIGHT DIFFERENCE FINAL EXPOSURE



Frame 2 - Normal contrast (approx. 6 stops) _____@_____ _____@_____ _____ _____@_____

SHADOW HIGHLIGHT DIFFERENCE FINAL EXPOSURE



Frame 3 - High contrast (approx. 9+ stops) _____@_____ _____@_____ _____ _____@_____

SHADOW HIGHLIGHT DIFFERENCE FINAL EXPOSURE



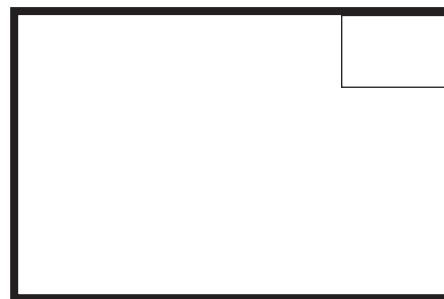
Frame 4 - Turn your flash on in a manual setting and set it to full power. Take a picture of your high contrast scene with your flash using your pre-determined manual settings. Sketch the resulting histogram. Did it change and if so, how?



ISO NOISE TEST

- Set your metering method to overall/average.
- Set your camera to lowest ISO/ASA setting available on your camera.
- Find a dimly lit scene with a medium dynamic range (six stops). Meter the scene, then make an appropriate exposure.
- Change your ISO setting to the highest possible value on your camera, remeter, adjust as necessary and expose.

Open each file from this test in Photoshop. Crop a small portion out of each image (approximately 1/16 of the overall size) to a final size of exactly 3in x 4in @ 300 dpi. Place the two cropped areas on a single photoshop canvas, label the ISO value for each frame with the text tool, add your name to the sheet, and print it out.



full frame

Crop this much of your picture to 3in x 4in @ 300 dpi.

Based on the print from this test, what conclusions can you draw about ISO settings and image quality on your camera?