**Basic Exposure Exercise**

This is designed for a DSLR, or other camera with an Aperture Priority mode. It is best to use either evaluative or center-weighted metering, which are less sensitive to small variations than spot metering.

**Aperture**

Find a subject to take pictures of. It doesn’t need to be artistic, just steady for the next 10 minutes. The scene needs to include an object fairly close to you and at least one object 15 feet or farther from you: for example, something in front of a window with a long view behind it. Set your camera on a tripod or on a stack of books or something, so each shot will be consistent. Frame the scene in your viewfinder to include both the near and far objects.

Set your camera to Aperture Priority mode and start with the largest aperture you have for your lens (e.g., the smallest f number). Focus on the near subject in your scene and take a picture of the subject. Remember the shutter speed that the camera selects.

Now, change your aperture to one stop higher aperture number (smaller opening). Standard whole stops are f/2, f/2.8, f/4, f/5.6, f/8, f/11, f/16, f/22, f/32. Note that they differ by a factor of 1.4 (a factor of 2 over two stops). Take another photo, and again note the shutter speed. Also, compare the overall brightness of the second photo to the first. They should be the same brightness, and the shutter speed should have doubled since the first shot.

Repeat this for the rest of the whole stops listed, each time noting the aperture, shutter speed, and comparing the brightness. When you’re done, flip back through the images, and note what happens to the background as the aperture is closed (higher numbers). You should begin to see more and more detail in the distant objects as the aperture is closed.

**Bonus Exercise:** Repeat the exercise above, this time focusing on the distant object rather than the near object.

**Sensitivity (ISO)**

Now change your sensor sensitivity (ISO) value. Standard whole stop values are 100, 200, 400, 800, 1600, 3200, 6400, 12800, etc. Take a photo at the highest sensitivity you have, and note the effect on the shutter speed. Each stop more sensitive should make the shutter speed decrease by half. Compare this photo to the ones you took before, zooming in on some detail in your subject. You will likely notice some green and/or purple speckles – noise – in the higher sensitivity images. As we have discussed in class, higher sensitivity offers more flexibility, but at a cost of higher noise.

**White Balance**

Now pick any exposure settings, and change the white balance from auto to each of the settings your camera offers. Note how the recorded image shifts ‘warmer’ (more reds and yellows) or ‘cooler’ (more blue) with different settings. With some cameras you can observe this difference in Live View, without taking the pictures. Which one matches your view of the subject with your eyes the best?

**Your Camera’s Sensor**

Finally, look online, or in your User’s Manual, and learn a little bit about how many pixels your camera’s sensor has, and what size the sensor chip is. The graphics I used in the class can be found at <http://en.wikipedia.org/wiki/Image_sensor_format> . Look up your camera’s crop factor (also shown in a chart at this link). It is probably 1, 1.5, 1.6, or 2.