Digital Photography Class

Pre-flight check
Get your camera ready to go the day before the event.

- Make sure you have all the memory cards you need. Make sure they're empty.
- Charge your batteries and pack some extras.
- Check your settings and make sure they're right for the type of environment you'll be shooting in.

Take your time and double-check everything. When you're done, pack everything up neatly so you're ready to go.

NOTES

Tips

1. **Shutter Lag**

   Tip: *Keep the camera still for a few seconds even after you depress the shutter release button.*

   For conventional cameras, the time lag from the moment your finger depresses the shutter release button till the moment the shutter opens is virtually negligible. On the other hand, for most digital cameras, there is a noticeable time lag.

2. **Optical vs Digital Zoom**

   Tip: *Try not to use the digital zoom function.*

   Optical zooms work basically like your conventional zoom lens whereby lens elements in various groups are moved to change the focal length of the lens. Digital zooms are only present in digital cameras, and basically work by utilizing only a smaller portion of the CCD element. (The CCD, or charge-coupled device, records picture information.) This reduces the angle of view and hence gives the impression that you are closing in on a subject far away.

   Image quality obviously suffers when a smaller area of the CCD is used to represent the same image size. There is a noticeable increase in "noise" in the final

image, which can be compared to graininess in conventional film. Hence, image quality is high for optical zooms and rather poor for digital zooms.

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3. **LCD vs Viewfinder**

Tip: *Use the LCD for more accurate frame coverage.*

It is true that using the LCD to compose your photographs is the fastest way to drain your batteries. In fact, it is advisable to switch off the LCD and use the viewfinder to conserve battery life. In addition, most LCDs are very difficult to view under bright sunlight, and using the viewfinder helps in composition.

On the other hand, viewfinders suffer from parallax error as the image is slightly "off" from the actual image. This is most prominent when your subjects are closer to the camera. For accurate frame coverage, compose your images with the LCD.

4. **ISO Setting**

Tip: *Use a low ISO setting.*

As digital cameras were made for photographers, so-called film speed settings (based on ISO ratings) were incorporated. The ISO number refers to the film 'speed', how fast or slow the film is. The higher the number, the more packed with grains of silver halide the film is. These grains are what capture the lights and darks of an image. In low light situations you want lots of little grains to help capture an image. Hence, you want a high, or fast, ISO like 400 or more. In low light, you don't need it, so you want a low or slow ISO, like 100. The more grains, the "grainier" the image. Many digital camera users are stumped as to the need for ISO when there is no film involved. This is an example of how legacy requirements affect even the design of new high-technology products! Unless you really need to, don't change the ISO setting higher then 100. You will be able to get the shot but the results may not be very pleasing due to increased "noise".

5. **White Balance & Color Temperature**

Tip: *Use the white balance "auto" setting. If you get strange color tints, try to calibrate the white balance or change to preset settings to suit the color temperature of the light source.*

Color temperature measures the color quality of a light source. The concept of color temperature is based on the radiation emitted by a black-body and is very technical and complicated. To the photographer, the lighting is "warm" if there is a yellowish hue, and "cool" if there is a bluish hue.

Digital photography brings a whole new dimension to the area of color temperature in photography. Previously, in conventional photography, the photographer had to use color correction filters to correct for the various color temperatures. There was also the choice of tungsten or daylight-balanced film. For digital photographers, things are less complicated as color temperature correction is usually automatic.

White balance is quite a new term for conventional photographers, although videographers have long been using it. Basically, white balance is what the camera perceives as true white. A white object may be yellowish-white under tungsten lights, slightly greenish-white under fluorescent lights, or slightly bluish-white on a cloudy day. Basically, the camera tries to adjust the color balance to achieve a tonality of white that is "correct".

NOTES

6. **Aspect Ratio**

Tip: *Compose images with the knowledge that the aspect ratio is 4:3, and not 3:2.*

On the commonly used 35mm film format, the size of the negative is 36x24mm, which translates to an aspect ratio of 3:2. For most digital cameras today, the aspect ratio is usually 4:3, as can be seen from an image size of 800x600 pixels, or 1600x1200pixels.

This means that the image from a conventional 35mm camera is longer than that from a digital camera. In such a case, digital photographers should bear in mind the difference when composing an image.

Image scanned from 35mm film

Image taken on Nikon Coolpix 950

NOTES

7. **Low Light – long exposure v. flash**

Tip: *in dark situations, take one shot w/ flash, one w/ long exposure.*

In low light, you have two choices, use a flash or leave your shutter open longer to allow more light in. When using a flash, stand about four to eight feet away from your subject to get good exposure. If you get too close, everyone will be overexposed (and they'll all be rendered blind). If you're too far away, the flash cannot reach the subject, and your image will be dark and muddy If you or your subject is in front of a mirror, window, or other reflective surface, the flash will reflect back. You'll get a supernova where your subject should be. Let your subjects, not your flash, be the stars. A slight profile shot will help reduce red-eye. Try to have your subjects look a little off to the side rather than directly into the flash. When opting for a longer exposure, you can create interesting light patterns and blurs when capturing motion. Do expect a slight increase in "noise" again, especially in the shadow areas.

Night Scene - 8 second exposure on Nikon Coolpix 950

NOTES

8. **Image Quality & Resolution**

Tip: *Use the settings that suit your needs best. If you just need to send an image via email, try to go for a low image size and quality, as the file size is smaller.*

If you need to print the image, always go for the highest image quality and size, though the relatively large file size would mean a need for more storage space, and also take longer processing time both on your computer and on your digital camera.

Image quality is primarily dependent on the compression technique and level of compression, and also directly affects the file size. If an image is saved in TIFF, the quality is the highest and as there is no compression that affects the image quality, the file size is also very big.

If an image is saved in JPEG, the quality is not as high as TIFF as it undergoes compression. The image quality is then dependent on the amount of compression. The higher the compression, the smaller the file size, and the lower the image quality. Conversely, a low compression would mean a larger file size, but better image quality.

Child Portrait (comparisons based on left eye)

JPEG - high compression

TIFF – uncompressed

NOTES

9. **Tweaking the Image**

Tip: Most images from digital cameras are not at their best. Tweak the color balance, levels, brightness and contrast for a more pleasing image.

Whilst the quality has improved tremendously over the past 2 years, images taken on most digital cameras still lack the punch of conventional photographs. But, digital photographers have the benefit of using simple image editing tools to boost the quality of their images. In the past, conventional photographers had to spend many hours in the darkroom just trying to get that perfect image.

There is no fixed rule as to how to tweak your image, as this differs from camera to camera. Experimentation needs to be done, but in general, the images from digital cameras are rather cold, and the contrast is lacking. If this is the case with your images, try to increase the levels of red and yellow, and push up the contrast slightly.

10. Shoot Shoot Shoot!!!!

Tip: When in doubt, shoot it.

This is digital. It won't cost more if you shoot 1,000 images, so shoot, shoot, shoot! The only way to ensure great images is to take a lot of not-so-great shots and pick out the cream of the crop.

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