Introduction to Digital Photography

CDS Media Center (2009)

Definitions

Exposure—A measure of the amount of light that is allowed to reach the cameras image sensor. For any camera, this is a function of aperture size (f-stop) and shutter speed.

Aperture—The size of the lens opening used during an exposure.

F-Stop—Number indicating the current aperture size for an attached lens. Most lenses for SLR cameras have a range of aperture sizes from about f/2.8 – f/22.

SLR—Single lens Reflex Camera

ISO—Abbreviation for International Organization for Standardization. In Photography, ISO is used to refer to the sensitivity of the image sensor in a digital camera. Most SLR cameras have an ISO range of 100 (lowest sensitivity, lowest noise) – 3200 or higher (highest sensitivity, highest noise).

Noise—artifacts in an image due to insufficient exposure or use of a high ISO value.

Advantages of Digital Photography

1. ***Digital cameras allow you to preview images directly in the camera***. If you don't get the shot that you're looking for the first time, you can make adjustments and re-shoot immediately.
2. ***No More Film Developing Costs*** Transfer images onto your computer, sort, and print only the photos that you need.
3. Advanced In-Camera features such as histograms, white balance settings, auto-bracketing and more.

Quick Tips to Successful Photography

1. Read the owners manual for your digital camera. It's the best way to familiarize yourself with the features of your fixed lens or digital SLR camera.
2. Ensure adequate lighting. For the best light, shoot outdoors in indirect sunlight. If shooting indoors under low-light conditions—use a flash.
3. Make sure that your photo has a clear subject. If the subject of your photo is not clear—reframe your shot and try again.
4. Pay attention to composition. Remove distracting elements from the frame.
5. Preview shots in your camera to insure adequate exposure, focus, and clarity. Make adjustments for conditions, and take multiple exposures to insure that you get the shot.

Making a Successful Image

Exposure

Lighting is the single most important factor to getting a correct exposure. Many of the problems that you may encounter in photography (under-exposure, camera shake, etc) can be minimized by proper lighting.

For best results—shoot outdoors in indirect (diffuse) light. Always use a flash for indoor photos—unless you have a strong indirect light source such as a nearby window.

Flash Photography

The light from a flash diminishes by twice the distance from your subject. This means that for a flash to be effective—you need to get close enough to your subject so that light from your flash bulb hits your subject. For point and shoot digital cameras—the internal flash is generally very weak. If you are using a point and shoot camera—you'll need to get very close to your subject under low-light conditions. The pop-up flashes in SLR cameras are a bit better—and you can still get adequate lighting up to a distance of about 15-20 feet. Pop-up flashes generally produce a harsh directional light—which may not be the most flattering illumination for your subjects.

Detachable Flash units for SLR cameras are the best option for indoor work—and are good at distances up to 20-30 ft. You can couple these with a diffuser (many detachable flashes now come with a built in diffuser) to produce a softer flash.

Composition

Composition is probably the second most important consideration in making a successful image. Here are some general rules of composition:

Rule of Thirds

Divide the frame into three equal segments vertically and horizontally. Place points of interest along these lines or at the intersections of these lines to produce a balanced and compelling image.

For best results-- avoid putting your subject in the center of the frame.

Fill the Frame

For portraits, some of the most compelling images are close-ups which take up much of the frame. Filling the frame leaves very little negative space—and draws the immediate attention of the viewer.

Remove Distracting Elements

Compose your shots to remove any elements that might distract from the subject of your photo. This includes: trees growing out of the top of your subjects' head, distracting backgrounds, etc.

Choosing a Subject

When choosing a subject for your photos, you'll need to answer one basic question: "What am I trying to communicate with this photo?" If you're trying to communicate action or activity, a group shot of people sitting at a table is not going to get the message across.

For best results—plan your shots in advance. Make a list of the shots that you'd like to get, and take this with you to your shoot.

Previewing Shots in You Camera

Most cameras allow you to preview your images in the camera at 100%. Familiarize yourself with this feature so that you can evaluate shots and make adjustments (if necessary). If you notice that you're images are not crisp at 100%, make appropriate adjustments by increasing ISO or by using another preset on your point and shoot camera (action, low-light, etc).

Sorting Shots in Photoshop or other Photo-Editing Suite

Evaluate your photos at 100% in Photoshop or other image-editing suite. Look for serious problems such as excessive camera shake, underexposure, etc.—and discard these images. Make adjustments to other images as necessary: brightness/contrast, color balance, etc.