

Digital Photography Assignment



Part 1- Exposure Controls

The purpose of this exercise is to allow you to experiment with the camera features that control exposure. The features you will be working with are ISO speed, white balance, shutter speed and aperture.

Remember :

Use the camera's review feature to record the exposure settings, ISO, Shutter, Aperture and note the lighting conditions for each of your photos.

ISO speed

ISO refers to the speed at which the camera's CCD captures the image. Lower ISO speeds (200) create a higher quality image but require longer exposure times. Lower speeds are well suited to brightly lit subjects and still life photos. Higher ISO speeds (1000 or higher) result in quick exposure times with slightly reduced quality. Higher speeds are suited to low light conditions or moving subjects.

Task:

- Select a subject.
- Use the camera controls to adjust the camera to the lowest available ISO speed and take a picture of your subject.
- Readjust the ISO speed to the highest available and take another picture of the subject.
- Select another subject and repeat the process.

Examples:



Above: This picture was shot at ISO 200. The bottom picture is zoomed in to reveal quality.



Above : This picture was shot with ISO 1600. If you look very carefully you can notice the slight mottling caused by the higher sensitivity.

Part 1- Exposure Controls

White Balance

White balance is a camera feature that compensates for colour cast in the pictures caused by the colour temperature of the lighting you are working with. Natural, incandescent, and fluorescent lights all have their own colour which will effect how white appears in your photos. The camera has an auto-matic white balance setting but it also allows you to select different settings based on the lighting that you are using.

Task:

- If the weather is nice select an outdoor subject that contains white areas.
- Use the camera's controls to adjust the white balance to natural light. Take a picture.
- Readjust the white balance to Fluorescent and repeat the picture.
- Readjust the white balance to Incandescent and repeat the picture.
- Select an indoor subject and repeat the process taking three more pictures indoors.

Examples:



Left: This picture was taken taken under Fluorescent lighting with the Incandescent White Balance setting. White appears tinted blue.



Above Left: This picture was taken under Fluorescent lighting with the Fluorescent White Balance setting. White appears white.

Part 1- Exposure Controls

Shutter Speed

Shutter speed refers to the amount of time the camera's shutter is open. Longer shutter speeds will cause moving subjects to appear blurred. Freezing quick moving subjects require fast shutter speeds. Shutter speeds slower than 1/120 of a second require a tripod to eliminate camera shake.

Task:

- Select a well lit moving subject.
- Select a slow shutter speed (approx. 1/8) and take a picture.
- Adjust the shutter to approx. 1/30 and take a picture.
- Adjust the shutter to approx. 1/500 or faster and take a picture
- Repeat the series with another subject.

Note:

Fast shutter speeds may result in underexposed (dark) pictures. You can compensate for this by adding light to the subject using the hot shoe flash. An alternative method would be to increase the camera's ISO speed.

Examples:



Above: This picture was taken with a shutter speed of 1/10 second. Notice the extreme motion blur.



Above: This picture was taken with a shutter speed of 1/60 second. Notice the motion blur.



Above: This picture was taken with a shutter speed of 1/500 second. Notice the motion is frozen. A flash was required to achieve proper exposure at this speed

Part 1- Exposure Controls

Aperture

Refers to the size of the hole the lens uses to allow light into the camera. Aperture is measured in F-stops with an F-stop of 3.5 being a large aperture and an F-stop of 22 being a small aperture. Large apertures will allow light into the camera quickly but they create a picture with short depth of field. This means that only a small range of the picture, the subject, will be in focus. Conversely, a small aperture allows less light into the camera causing longer exposure times but the pictures will have large depth of field. This means the foreground, background, and subject will be in focus.

Task:

- Select a well lit subject with good range of depth and detail along the Z- axis.
- Set the camera's aperture to the largest available aperture (lowest F-stop) and take a picture.
- Set the camera's aperture to the smallest available aperture (highest F-stop) and repeat the picture.
- Select another subject and repeat the sequence.

Note:

Reducing the aperture will mean that less light is allowed into the camera resulting in longer shutter speed times. This means that you must use a tripod to eliminate camera shake. It is a good idea to use the self timer mode on the camera to prevent camera shake caused by pressing the shutter button.

Examples:



Above: This picture was taken with F stop 3.5. This large aperture creates a shallow depth of field causing the background to be out of focus



Above: This picture was taken with F stop 22. This small aperture creates a large depth of field causing the background and foreground to be in focus

Part 2 - Portrait Lighting

The purpose of this exercise is to allow you to experiment with a lighting kit to produce portrait photographs.

Camera Setup

You will need to shut off the flash on the camera as you do not want it to interfere with the light set up. You will also need to adjust the camera's automatic exposure area. Under normal conditions the camera calculates its exposure settings based on the full frame of the photograph. Since you are using a dark background with a bright subject This will result in your subject being overexposed (too bright). You will need to change the cameras exposure area to spotlight mode so that it will calculate exposure based only on the subject.

Lighting Setup

You will be using a 3 point lighting kit with a key light, a fill light and a back light.

The key light should be set at roughly a 45 degree angle (both vertically and horizontally) to your subject. With the key light aimed correctly your subject should be brightly lit with heavy shadow patterns caused by the nose and the eyebrows.

The fill light will be used to soften, but not eliminate, the shadows. It should be set at approximately a 45 degree angle on the opposite side from the key light. Aim the fill light away from the subject and use the umbrella reflector to reflect light onto the subject. With both key and fill lights on the subject should be well lit with light shadow patterns caused by the eyebrows and nose.

The background light should not be aimed at the subject. It will be aimed at the backdrop in order to light it evenly and eliminate any shadows caused by the key and fill lights.

Remember:

to use the camera's review feature to record the exposure settings, ISO, Shutter, Aperture and note the lighting conditions for each of your photos.

Part 2 - Portrait Lighting

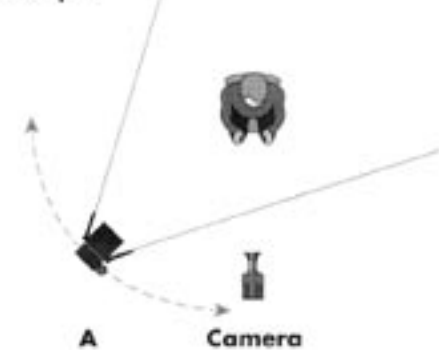
Task:

- Leave the stage lights on and take a picture of the subject.
- Turn on the key light, shut off the stage lights and take a picture of your subject.
- Turn on the key and fill lights, shut off the stage lights and take a picture of your subject.
- Turn on the key, fill light, and background lights, shut off the stage lights and take a picture of your subject.
- Adjust the lights to create a different lighting arrangement such as backlighting, lighting your subject from below or your own variation and take a picture. Make sure you make notes or sketch the new setup.

Set up examples:

Example Setups using Omni-light

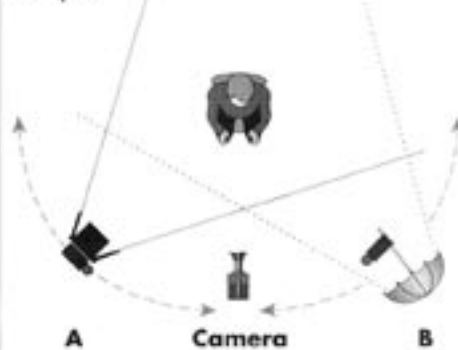
Setup 1



These 3 setups show some ways the Omni can be used; alone, with Tota-brella, or with diffusion, in a small lighting setup. Position of the lights and distance to the subject can be varied for different creative results. Varying the distance of either light from the subject will vary the contrast ratio between Key & Fill lights. **Tip:** position your subject away from walls to avoid shadows and give more a sense of depth.

Setup #1 shows single fixture use, and can be set on either side of the camera. Varying the position of the light will increase shadow & contrast on the subject.

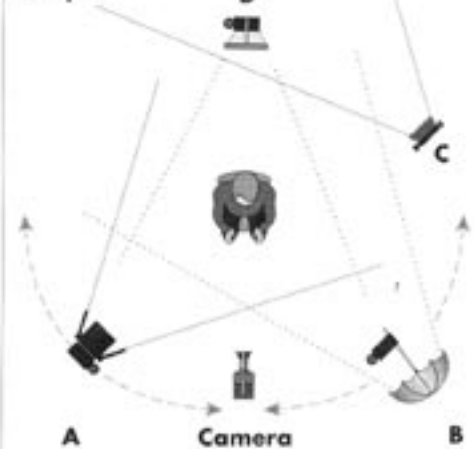
Setup 2



Setup #2 uses 2 Omni's, one with only barn doors, as hard key, and the other with a Tota-brella as soft fill. Vary the position of the lights, as shown. Be aware of reflection in eyeglasses or reflective surfaces.

Setup #3 uses 2 Omni's as hard key/soft fill, with a Tota to evenly light the background. An additional Omni from high up behind the subject as a back hair-light, lighting the back of the head & shoulders, will create a sense of separation from the background. Be careful to keep the light output of the back light from spilling into the camera lens which will cause lens flare.

Setup 3



Setup Keys

- A** Key light Omni with barn doors
- B** Fill light Omni with umbrella
- C** Background Tota
- D** High back light Omni with Tota-frame & diffusion

Part 3 - Product Photography

The purpose of this exercise is to allow you to experiment with product photography tent. You will use an infinite horizon(seamless background), Lighting tent and the macro and self timer features on the camera.

Remember :

to use the camera's review feature to record the exposure settings, ISO, Shutter, Aperture and note the lighting conditions for each of your photos.

Camera Setup

You will need to set the camera to Macro mode (usually indicated by a flower symbol) this will allow the camera to operate very close to a subject. Set the camera on a tripod and set the camera to self timer mode, this will eliminate any camera shake caused by pushing the shutter release.

Task:

- Select a subject.
- Place the subject on a desk and take a photo of it under the room lights.
- Shut the room lights off and light the subject with the supplied spotlights take another photo.
- Set up the lighting tent. Fold the front wall of the tent. Place the background so that there are no creases. Place the subject in the tent.
- Place the light sources so that they shine in equally from the sides slightly ahead of the subject.
- Fold down the front wall of the tent. Place the camera on the tripod so that the lens is inside the tent.
- Compose the picture so that the subject fills the frame.
- Use the camera's self timer to take a picture of the subject.
- Change the background and repeat.
- Repeat with other subjects.