Composed Portraits

Aperture | Shutter Speed | Focus

Camera Settings

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Lesson 1: Pre Test

Question 1:
Which lens has a larger opening (aperture): one with an aperture of:

A.  F/1.8
B.  F/2.8
C.  F/5.6
D.  F/8

Lesson 2: Pre Test

Question 2: If the shutter speed was set at 1/500th of a second, which image would best depict A, B, or D?

A.  
B.  
C.  
D.  
Lesson 3: Pre Test

Question 3.

For the image of the boat, which letter best depicts being clearly defined as focused? Circle one letter A, B, C or D that best demonstrates a focused photo.

![Image of boat with letters A, B, C, D labeled](image-url)
Introduction

A picture is worth a thousand words is a statement we have heard many times. Determining what is defined as a well instructed portrait requires guidance. This instructional goal will be used to teach students and staff in a university setting. Given samples of portraits, the learner will be able to determine the components of well composed portraits. While a portrait may be perceived differently by different people, this module will introduce several key concepts to better define the components to a well composed portrait.

This training module will be for college students and staff of the University of Hawai‘i System who recently upgraded from point and shoot to digital Single Lens Reflex (SLR) cameras. The SLR is a type of camera which incorporates a viewing system where the subject is seen through the lens. Many students and staff share an interest in photography for artistic reasons as well as to support teaching.
Let’s get really basic. Any photograph needs both a correct aperture and correct shutter speed to create a photo. The aperture regulates how wide the lens opening is, while the shutter speed regulates how long the shutter was left open. These two items, in tandem, regulate the exposure of a photograph. In an automatic mode, the digital camera chooses its own combination of aperture and shutter speed to create a good exposure—you don’t have to do any of the thinking. But sometimes, you want more control over your digital camera, and that’s when aperture priority and shutter come into play. These two modes or combination of both allow you to wrest control of either of these two variables away from your digital camera.

Aperture priority mode allows you control over the depth of field of an image. The more open the lens is or smaller the “f” stop, the more light that falls on the sensor, but the depth of field is small. Generally, for portrait photography small apertures are used so as to create a silky-smooth background behind while the person is kept in sharp focus.

In shutter priority, you control the shutter speed while the camera determines the aperture. This allows you, with sufficient lighting conditions, to set a shutter speed fast enough to freeze sports action or slow enough to create a motion blur.
Perhaps the most obvious technique to work on when aiming for sharp portraits is focusing. Most of us use Auto Focusing with our cameras but don’t assume that the camera will always get it right. Always visually check what part of the image is in focus before hitting the shutter and if it’s not right, try again or switch to manual focus mode. This is particularly important if you’re shooting with a large aperture (small depth of field) where even being slightly out can result in your subject being noticeably out of focus.

The two images show the position of common camera controls. Correct use of these controls, determines proper camera settings.
Lesson 1: Define Aperture

The main function of a camera lens is to collect light. The aperture of a lens is the diameter of the lens opening and is usually controlled by an iris. The larger the diameter of the aperture, the more light that reaches the image sensor.

Aperture is expressed as f-stop, e.g. f2.8 or f/2.8. The smaller the f-stop number (or f/value), the larger the lens opening (aperture). In practice, unless you are dealing with a fixed-aperture lens (many simple point-and-shoot cameras have only one fixed aperture), the aperture of a lens is usually expressed as a range of f-stops.

Aperture and Depth of Field (DOF)

The Depth of Field is the distance wherein objects are in focus. There are times when you desire a great depth of field, i.e. where objects both close to you and far from you are in focus. This is especially true when you are taking a landscape picture and want as much as possible to be in crisp focus. Then there are times when you want to isolate your subject, as when you are taking a portrait and want your subject to be in sharp focus but the background to be out of focus. In this case, you desire a shallow depth of field.

One way to influence DOF is by selecting the appropriate aperture. The rule of thumb is:

- Select a large aperture (or small f/value or small aperture value), e.g. f/2.8, to obtain a shallow DOF
- Select a small aperture (or large f/value or large aperture value), e.g. f/8.0, to achieve great DOF
Examples

Aperture and Depth of Field

**Shallow DOF**

The use of a large aperture (f/2.8) throws the flowers in the background out of focus. Focus has to be precise.

**Great DOF**

Using a small aperture (f/22) extends the DOF from the foreground all the way to the background.

Non-Examples

In this example, the aperture was set to f/5.6, a smaller aperture of f/8 or f/11 would have allowed both fish to be in focus.

In this second example, an f stop of f/8.0 was used. Once again, a larger f-stop of f/11 would have put more of the fish in focus.
Lesson 1: Practice Test

Which lens has a larger opening (aperture): one with an aperture of:

A. f/1.8
B. f/2.8
C. f/5.6
D. f/8

Lesson 1: Practice Test Key

Answer: f/1.8

(remember, the smaller the f-stop, the larger the aperture)

Review:

A large maximum aperture is a good thing. It allows more light to reach the image sensor, and so allows you to use a faster shutter speed. A faster shutter speed freezes action and negates the effect of camera shake, resulting in pictures that are not blurred. Another advantage of a large maximum aperture is to provide a shallow depth of field. This allows the background to blur nicely thus isolating your subject (especially effective when taking portraits).
Lesson 2: Define Shutter Speed

Shutter speed defines the amount of light that hits the digital sensor. Shutter speed defines movement on the picture, for example the blurred image of a bird flying by, versus a faster shutter speed will freeze fast moving subjects, like a bullet hitting a watermelon.

Examples

A shutter speed set to 1/30th of a second for jumping dolphins, would show a blurred image. A fast shutter speed of 1/500th of a second would capture the moving object better. A properly exposed picture requires a balance of the correct shutter speed and appropriate aperture setting to get the correct image brightness.

Non-examples

The following are non-examples as they demonstrate non-correct shutter speed settings.

The image above of the campsite and water fall show too slow of a shutter speed, making for camera shake. This could have been corrected a faster shutter speed.

The picture above shows the jumper blurred, a faster shutter speed or tracking with the jumper (following the jumper with the camera) would have made the subject sharper in the picture.
Lesson 2: Practice Test

Given these four images which one best defines the correct shutter speed? A, B, C or D?

A.  

B.  

C.  

D.
Lesson 2: Practice Test Key

Given these four images which one best defines the correct shutter speed? A, B, C or D?

A. Image blurry, slow shutter speed.
B. Correct, clear subjects.
C. Blurry image, overexposed.
D. Blurry image, underexposed.
Lesson 3: Define Focus

Focus describes the point at which the image in the camera view finder is sharp and easily viewable. Nonfocused areas would be items before or behind the focused image that are fuzzy or out of focus.

Examples

In the example, the photo shows the head of an eel as focused. The body is non-focused.
In the example, the photo depicts fish in a coral reef, all of the image is in focus.

Non-example

In the example the image depicts a non-focused photo.
Lesson 3: Practice Test

For the above image of the boat, circle which letter best depicts being clearly defined as focused? Select one letter A, B, C or D that best demonstrates a focused photo.
**Lesson 3: Practice Test Key**

**Answer:**
A is the correct answer.

**Review:**
Reflecting on the definition of focus from before; "Focus describes the point at which the image in the camera view finder is sharp and easily viewable". We define non-focused areas as items before or behind the focused image that are fuzzy or out of focus.” Changing the area of focus can change how the image is perceived. For example the hood ornament of a car photographed from head on being in focus, with rest of the car out of focus, gives importance to the hood ornament.
Post Test

Aperture:

Assuming the shutter speed does not change, which of the these f-stop settings exposes the image sensor to the most light?

A. f/2.8
B. f/5.6
C. f/8
D. f/11

Shutter Speed:

For this image, which answer best defines correct shutter speed.

A. Shutter speed correct, image correctly exposed
B. Shutter speed too slow, image blurred
C. Shutter speed too fast, overexposed
D. Shutter speed too slow and under exposed.
Focus: Select the picture of the eel that is best focused, A, B, C or D.
Post Test- Key

Aperture:

Assuming the shutter speed does not change, which of the these f-stop settings exposes the image sensor to the most light?

A. f/2.8
B. f/5.6
C. f/8
D. f/11

Answer:

A f/2.8

Shutter Speed:

For the given image, which answer best defines correct shutter speed.

A. Yes, Shutter speed correct, image correctly exposed
B. No, Shutter speed to slow, image blurred
C. No, Shutter speed to fast, overexposed
D. No, Shutter speed to slow and under exposed.

Answer:

A. Yes, Shutter speed correct, image correctly exposed

Focus

Select the picture of the eel that is best focused, A, B, C or D.

Answer:

A is the correct answer.
Formative Feedback for Portrait Module

Name of person being interviewed:_________________________________________

Using the Likert scale, please select one answer, and add any additional comments you may have;

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree

I. Questions to evaluate the pretest

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How well did you understand the questions in the pretest?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>How skilled are you with a digital SLR?</td>
<td></td>
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<tr>
<td>3</td>
<td>How strong are your interests in photography?</td>
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<tr>
<td>4</td>
<td>How well can you identify the controls of a digital SLR?</td>
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<tr>
<td>5</td>
<td>Rate your understanding of aperture.</td>
<td></td>
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<tr>
<td>6</td>
<td>Rate your understanding of shutter speed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Rate your understanding of focus.</td>
<td></td>
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II. Module
1) How well did the module hold your attention?
2) Was the length of the instruction appropriate?
3) Was the instruction easy to follow?
4) Was the instruction challenging?
5) How appropriate were the illustrations?

Comments
1) What did you like most?
2) What did you like least?
3) How would you change the instruction if you could?
4) Would you prefer another instructional medium?

III. Post test
1) How well did you understand the post test questions?
2) Rate your understanding of aperture.
3) Rate your understanding of shutter speed.
4) Rate your understanding of focus.
5) How well did the tests measure the materials that were presented?

Comments: Would you suggest any changes in the module?

Comments: