

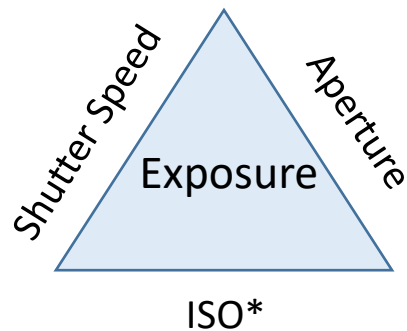
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NOTES

Diploma in Video



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Exposure:



We have been building on this throughout the course and does everyone remember lesson 2 when we looked at shutter speed? We learned:

Shutter Speed:

- Controls motion
- But also it controls the duration of time that light is allowed hit the sensor. The more time the more light in the scene. The quicker the time the less light.
- Is everyone still on board with that?

Then in lesson 3 we learned all about aperture.

Aperture:

- we saw that aperture controls the depth of field in the scene. So this is the area that is in focus in a scene.
- If our aperture is wide open (remember this is the smaller number) the shallower the depth of field. This also means more light enters the scene.
- The tighter the aperture, the increased depth of field we have but the less light that enters the frame.

Well the **shutter speed and aperture work together to balance the light in the scene**

To gives us an exposure or an image that looks correct, not too dark or too bright.

But what about times where we need to maintain shutter and aperture settings and there is not enough light, or too much light in the scene. What can we do?

Well this is where ISO comes in.

ISO: is the sensitivity of the cameras sensor.

Any photographers out there you would use the ISO last, if its needed at all. But with video, you will find yourself using this more frequently.

A lot of that is to do with the restriction of shutter speeds in relation to your frames per second.

What is exposure?

Exposure is the recorded shot and the amount of light that is in it.

A perfect exposure should:

- As much visible detail in all parts of the image
- So details in the shadows/dark parts of the scene
- As well as bright/highlights too

If the scene is too dark, you risk losing detail and having areas of pure black, that is all the info is lost and there is no detail at all.

If the scene is too bright you risk losing detail in the highlights and have areas that are pure white, with no detail at all.

How do we judge exposure

So how can we judge the correct amount of light in a scene.

Well depending on the camera that you are using there are several options.

But the first one is to simply visually assess the scene.

Look at the cameras LCD. These LCDs operate in real time. So any adjustment that we make will be visible instantly in the screen.

So we can adjust the exposure this way.

But we can also use the cameras light meter.

Light Meter:

-2..1..0..1..+2

If you are shooting with a DSLR you may be familiar with the camera's light meter

For any DSLR users you might be familiar with the light metre, if you aren't don't worry.

This is inbuilt into the camera and reads the light reflected of a subject

Based on the reading we can then decide as to how to correctly expose the scene by adjusting the Aperture, shutter and ISO.

A correct exposure (in theory) should be achieved when the meter is at 0.

So we make our adjustments until that little indicator gets to the centre. Each of the numbers is 1 stop apart.

How does the light meter work?

The light hits the subject and is reflected off the subject back into the camera. The light meter reads this REFLECTED light and makes its assessments to indicate to us whether we have enough light in the scene or too little.

The light meter bases this reading on the 18% principle.

Briefly, this is the idea that most objects reflect 18% of the light that hits them. This is covered more in depth on our photography course. For the moment, it is not too important to our needs.

Stops of Light

A stop is a measurement of light

- If we increase the exposure by a Stop, we double the amount of light in the scene
- If we decrease the exposure by a stop, we are halving the amount of light in the scene

Exposure:

We can begin to adjust exposure by using the Shutter, Aperture and ISO.

Tell them that they need to choose which setting to sacrifice to get a good exposure, depending on what they need in the scene.

So if im shooting a fight scene ill need a fast shutter speed so ill either sacrifice the Aperture or the ISO to get a correct exposure.

Or I could be shooting a scene where I need a shallow depth of field so ill either have to compensate with the ISO or Shutter speed.

Exposure – Shutter Speed

To get set up I recommend that you start with shutter speed. The reason for this is that you are restricted in the shutter speed you can use.

(Remember a good rule of thumb is having your shutter speed set to double your fps.)

Your shutter will have an effect on the motion blur in your footage and the amount of light allowed in.

Exposure – Aperture:

Understand that when you are changing your aperture you are affecting the depth of field.

The bigger the aperture hole, the shallower the depth of field (small area of focus) & will let more light in.

The smaller the aperture hole, you will get a deep depth (more of the scene in focus) & will let less light in.

Exposure – ISO:

ISO controls the sensitivity of the sensor.

So if you don't or can't change your shutter + Aperture you can resort to the ISO, increase the sensitivity of the sensor allowing more light to expose the scene.

High ISO's can cause noise or grain on our image, so be aware of that. Some cameras are better in higher ISO's than others, so you can get higher ISO with less grain.



Neutral Density Filters:

So guys what happens when you want to shoot big aperture in daylight/bright scenes?

This is where Neutral density filters can help. Neutral density filters reduce the amount of light entering the lens allowing you to have slower shutter speeds in bright situations. Neutral density filters come in different densities or stops. They usually come in a variety of stops such as 1 stop, 2 stop, 3 stops and so on. In each case they reduce the amount of light coming into the camera by that stop amount.

Variable ND filters you twist and change the amount of light allowed in.

Graduated Filters The filter is dark at the top and then gradually gets lighter.

- Basically it starts at full intensity and gets lighter or graduates until it has not effect on the bottom of the scene
- You can probably see the graduated effect on the images on scenes

This is to create a seamless blend between the areas restricting light and the areas that aren't restricting.

Thank you

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