

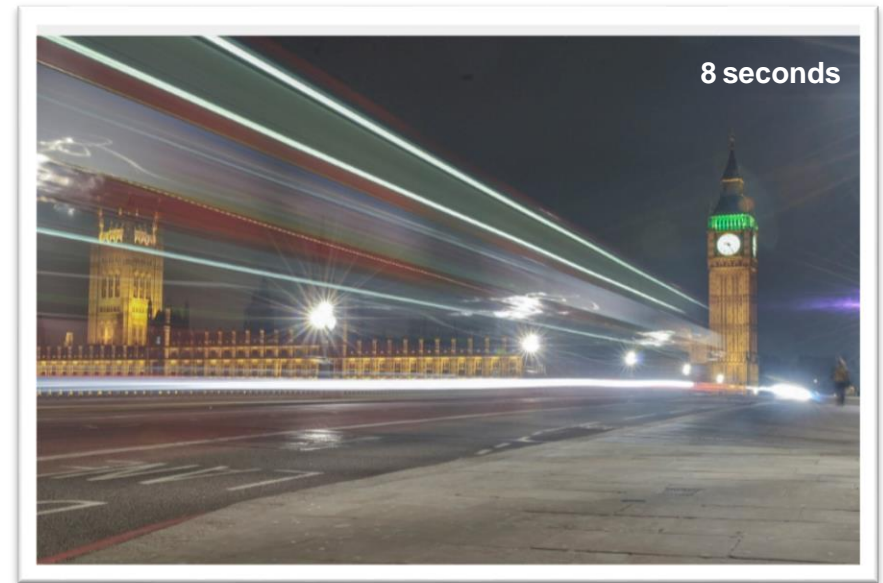
Welcome to
Imber Court Photo Training
Online Diploma Course
Module 2



Understanding Your DSLR

Welcome to module 2

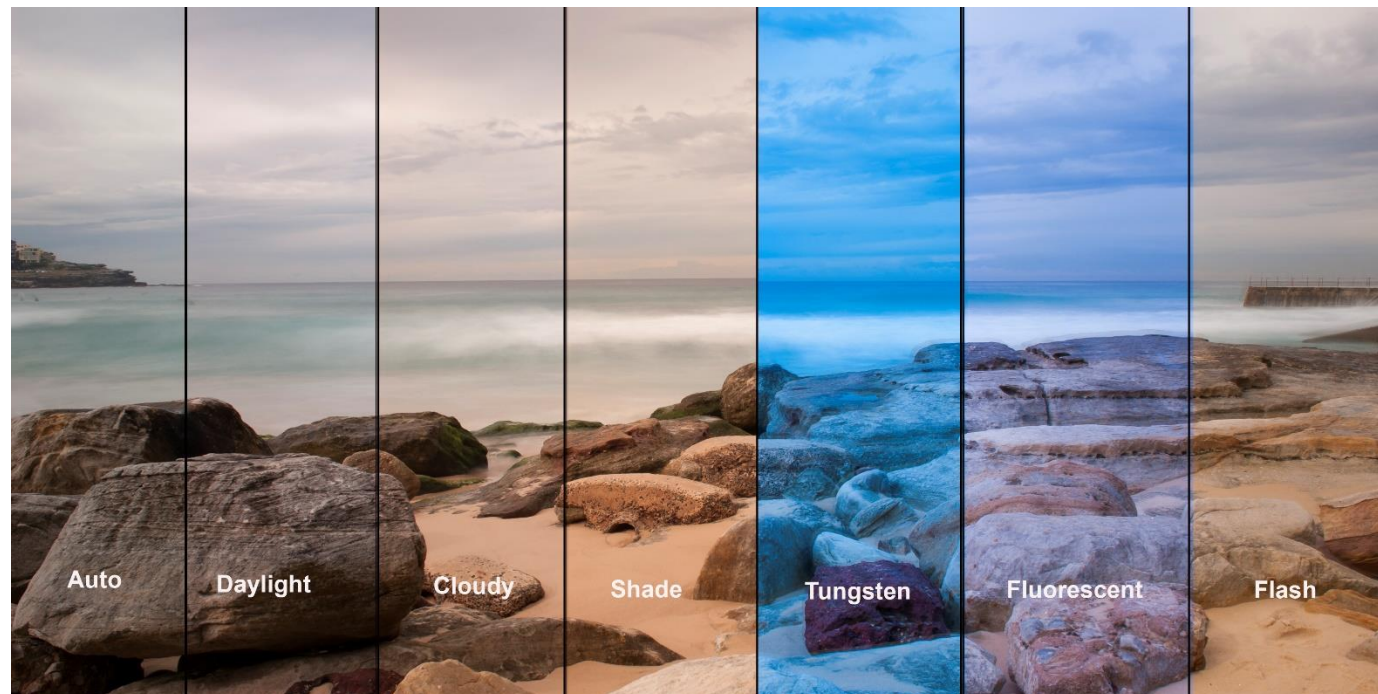
In this module we show you how to use the camera in shutter priority mode to freeze and show movement in our images. We also discuss how our ISO and white balance come into play.



Understanding Your DSLR

WHITE BALANCE

This is the one setting that by selecting you will notice an instant improvement in your images. By setting the white balance we ensure that the colours in our image are recorded correctly. White balance relates to colour temperature. For those of you who have studied physics in the past you may recall that colour temperature is measured in degrees Kelvin. Every light source has a different colour temperature which is not a problem for us as our eyes automatically adjust to compensate. If we look at a white piece of paper under several different light sources we know we are looking at a white piece of paper! Unfortunately the sensor on our camera works in a slightly different way so if we photographed a white piece of paper outdoors in sunlight, then on a cloudy day and again under the shade of tree the white piece of paper would have a different colour cast in each shot. Most camera manufacturers' would have you believe that by leaving the WB on auto the camera will deal with the various colour casts but unfortunately this is not so. We suggest you set the white balance on your camera to the lighting conditions in which you are taking an image, so on a sunny day set it to daylight on a cloudy day cloudy and if you are standing in the sunshine taking a shot of a person standing in the shade under a tree you need to set the white balance to shade.



Understanding Your DSLR

TASK White Balance

Choose a simple subject like a stationary car and set your shutter speed to 1/60th second. Take a series of images at different white balance settings of the vehicle starting with Auto and continue in the order that they appear in your white balance menu. Ignore the custom settings option. You will end up with about seven images captured at every different white balance setting. Compare the Auto setting with the setting that was correct for the lighting conditions on the day. You will normally find that there is not much difference between auto and daylight if taken on a sunny day, although you will see a difference between auto and cloudy if taken on a cloudy day!

Keep these images in a folder on your computer for future reference.

ISO

Do you remember buying a film for your camera? We used to buy ISO 100 if we were off to Greece in July and ISO 1600 if we were off to Cornwall! ISO is used to adjust the sensitivity of the camera to light which is adjusted electronically on a digital camera. The lower the ISO number the less sensitive the sensor is to light and the higher the ISO number the more sensitive the sensor is to light. When shooting at fast shutter speeds or in poor light we will have to increase the ISO. Each time you double the ISO (for example, from 200 to 400), the camera needs only half as much light for the same exposure. So if you had a shutter speed of 1/125th second at 200 ISO, going to 400 ISO would let you get the same exposure at 1/250 second. As we increase our ISO a digital image becomes noisy/grainy so by default we always need to start at ISO 100 for best quality and increase the ISO as necessary. Do not leave the ISO setting on Auto as the camera may decide to select a high ISO which will cause your images to be noisy/grainy. More on ISO later in this module.



ISO speed						
Auto						
AUTO	L (50)	100	125	160	200	
250	320	400	500	640	800	
1000	1250	1600	2000	2500	3200	
4000	5000	6400	8000	10000	12800	
H1 (25600)		H2 (51200)		H3 (102400)		

Understanding Your DSLR

Shutter Speed

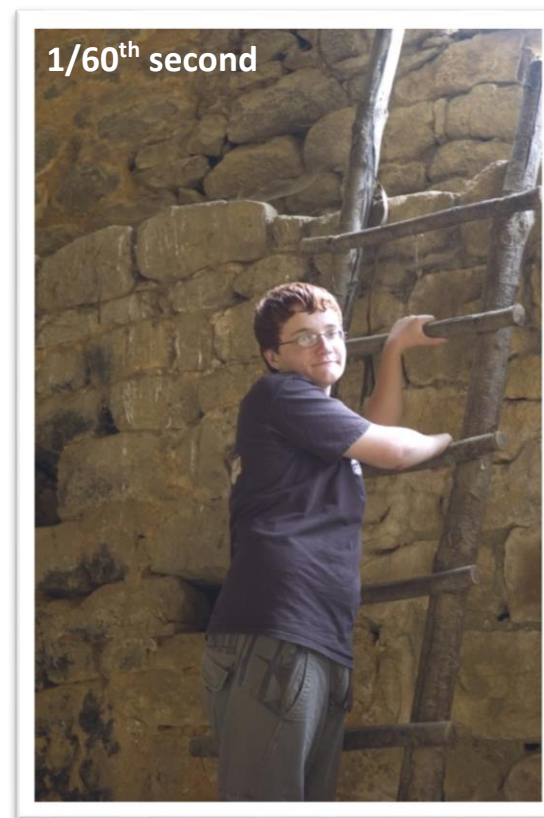
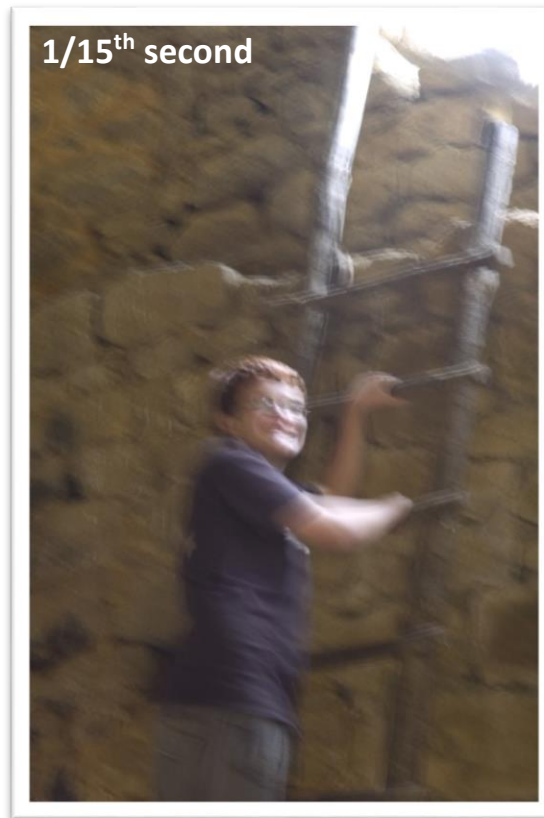
Hopefully by now you have started to realise how we use shutter speed to either freeze or show movement in our images. The faster a subject is moving the faster the shutter speed we need to freeze movement. If we were photographing a person standing still then the minimum shutter speed we could use is 1/60 second. As soon as the person starts to walk away we need to use 1/250 second to ensure we freeze any movement, if the person starts to run we need to use 1/1000 second to freeze their movement. As we increase our shutter speed the shutter in the camera is open for a shorter period of time and therefore the aperture, which is being selected by the camera in shutter priority mode, needs to open to a larger hole to allow more light to enter the camera so we can fill the sensor with light to achieve the correct exposure. Think of the camera sensor as a glass, when it is full to the brim we will have a correctly exposed image, when the sensor is only half full then our image will be underexposed and when it is overflowing our image will be overexposed.

When the aperture has automatically opened to its maximum size and is unable to fill the sensor with light, the camera will warn you that it can't fill the sensor and that your image will be underexposed. This warning varies depending on which make camera you have. Recent model Canon and Nikon DSLR's warn of this by causing the aperture number in the viewfinder or on the rear screen to flash. On older Nikon DSLR's the letters 'Lo' appear instead of the aperture number. Some other makes cause the shutter speed and aperture numbers to turn red. If you are not sure what your model does then try checking in your handbook or contact us. In these circumstances we need to go to our ISO and increase it until the aperture number stops flashing, saying Lo or turning red. Remember we need to turn our ISO up in increments to maintain high quality and avoid grain/noise rather than just turn it up to the cameras maximum ISO setting. If we get to our highest ISO setting and the aperture numbers are still flashing we either reduce our shutter speed or come back on another day!



Understanding Your DSLR

The images below show the same shot taken at two different shutter speeds, both shots are captured whilst hand holding the camera and demonstrate the effect of camera shake when hand holding the camera and allowing the shutter speed to drop below 1/60 second.

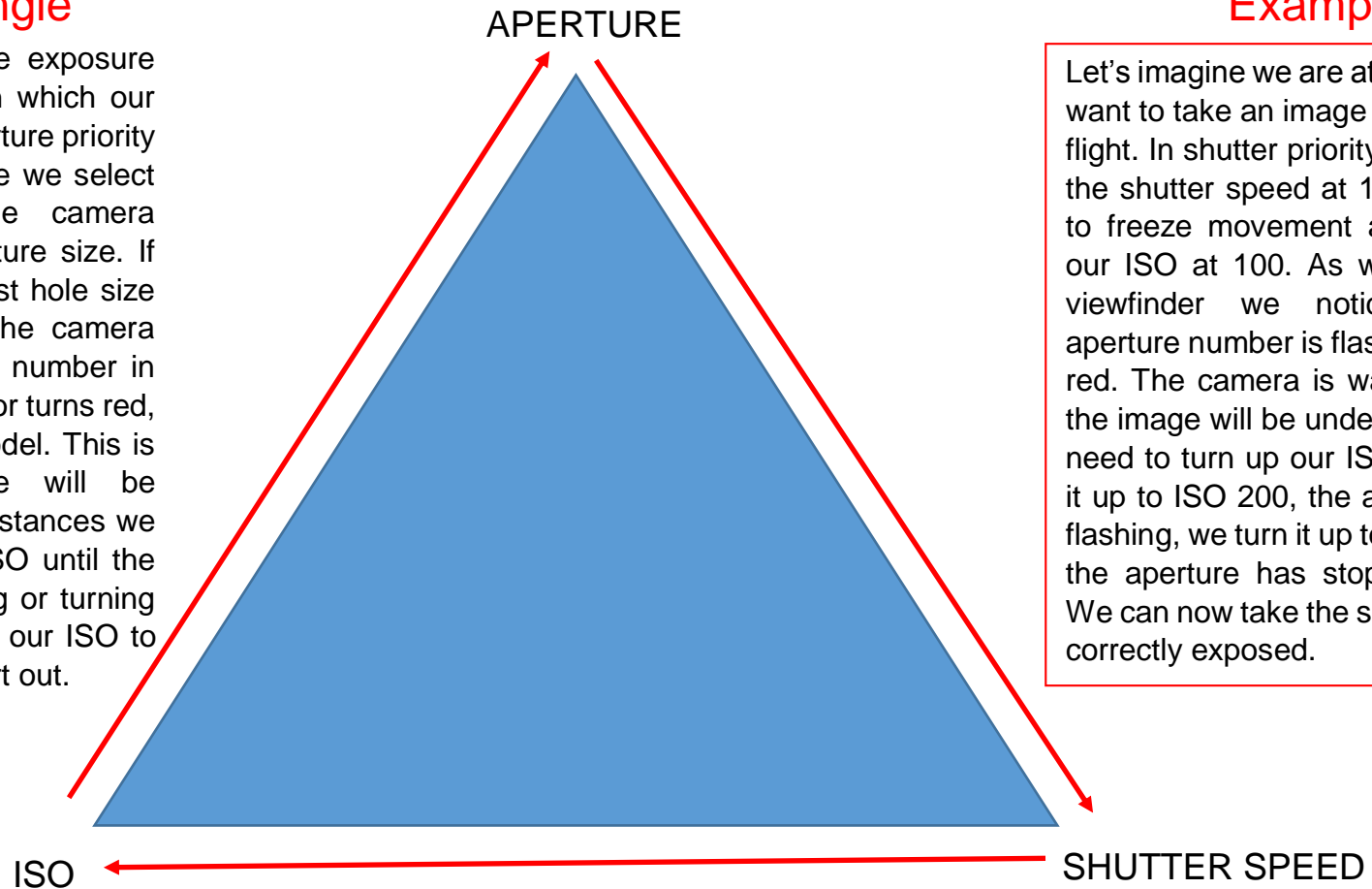


Remember the minimum shutter speed at which we can hand hold a camera is 1/60th second! When your shutter speed is slower than 1/60th second you need to use a tripod!

Understanding Your DSLR

The Exposure Triangle

This diagram is known as the exposure triangle and shows the way in which our camera works in shutter or aperture priority modes. In shutter priority mode we select the shutter speed and the camera automatically selects the aperture size. If the aperture opens to its largest hole size and is still unable to fill up the camera sensor with light, the aperture number in your viewfinder begins to flash or turns red, depending on your camera model. This is a warning that the image will be underexposed. In these circumstances we need to start to turn up our ISO until the aperture number stops flashing or turning red. Remember we always set our ISO to the lowest setting when we start out.



Example

Let's imagine we are at the coast and want to take an image of a seagull in flight. In shutter priority mode we set the shutter speed at 1/1000 second to freeze movement and start with our ISO at 100. As we look in the viewfinder we notice that the aperture number is flashing or turning red. The camera is warning us that the image will be underexposed. We need to turn up our ISO, so we turn it up to ISO 200, the aperture is still flashing, we turn it up to ISO 400 and the aperture has stopped flashing. We can now take the shot that will be correctly exposed.

Understanding Your DSLR

Shutter Speed Summary Module 2

- At this stage you should be able to:-
- Set your white balance and understand its effect
- Understand the effect of shutter speed
- Understand ISO
- Understand how the camera operates in shutter priority mode

