

# *Digital Camera Basics*

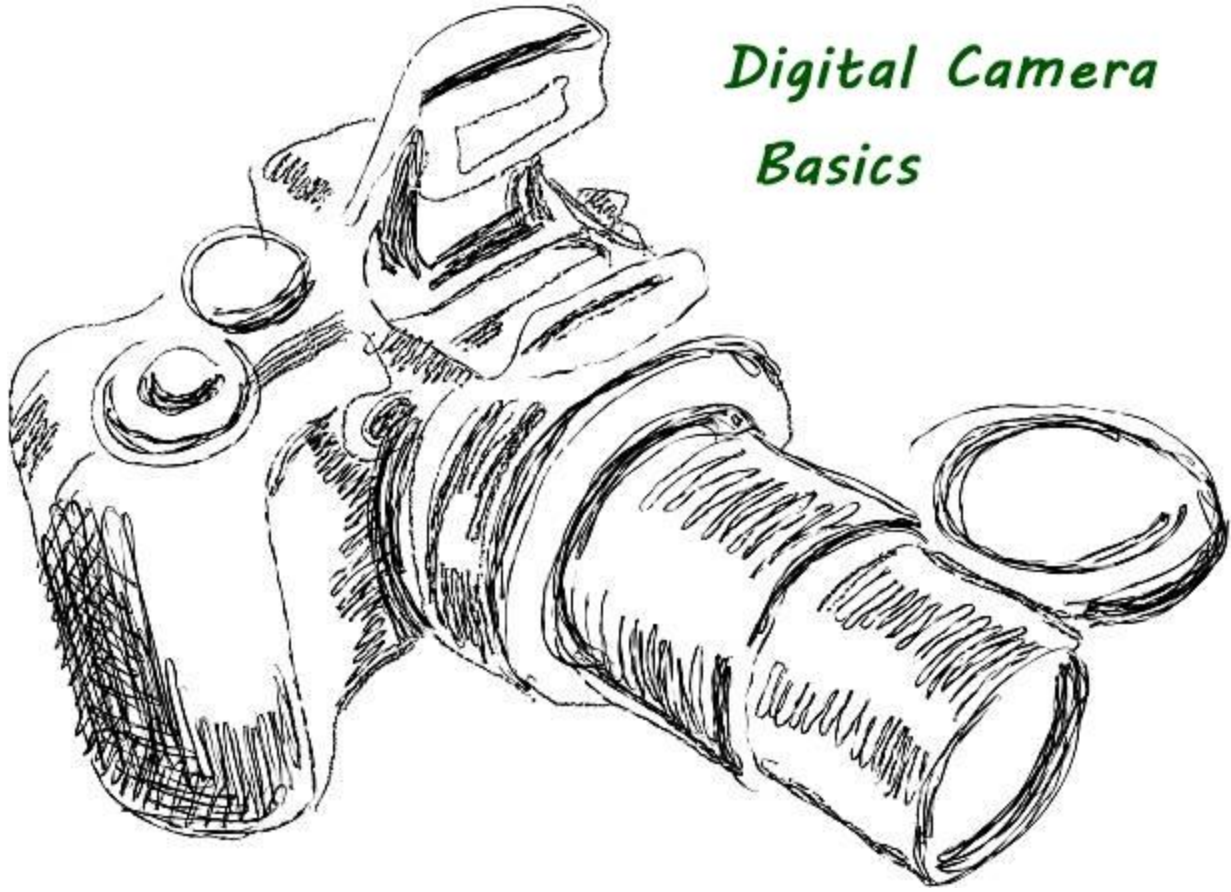


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## Digital Camera Basics

Most people take pictures to record and keep memories. Digital cameras make it convenient. Everyone can take a picture, but few know how to utilize various functions to take a better picture.

Are your photos blurred or subjects are distorted?  
What causes low quality photos?

The reason is you are not a professional photographer

Most people do not know the basic rules of photography and what functions are in the digital cameras.

This booklet will provide you with basic techniques to take better photos  
Consisting of these procedures.

- Describing the basic digital camera terminology.
- How digital cameras work.
- The seven fundamental techniques for using basic functions common in all digital cameras.
- Then, Applying y the techniques in real situations.
- While reading you should have your camera handy and experiment
- Allowing you to acquire good photographic techniques.
- Memorize each function and technique.

You will learn basic knowledge and fundamental techniques of photography with digital cameras. Based on these techniques, you will learn how to apply them to various situations.

You will be able to acquire basic understanding of how to take better photos.

- Basic knowledge of taking a picture with digital cameras
- taking photos of people
- Taking photos of landscapes
- taking close-up photos
- Taking photos at night

## **Equipment you will need**

Digital camera

Manual of your digital camera

Accessories, such as a tripod or external flash, if you have them

## **Prerequisite Knowledge or skills**

Even If you do not have any experience of photography with digital cameras, you can learn the basic techniques with this booklet while operating your digital camera based on the manual **Practice taking pictures**.

## **Assessment**

Answer the questions after finishing this booklet It will be helpful to remember key points.

## **Understanding Terminology used for the Digital Camera**

### **What is a DSLR camera?**

A film camera uses film to save an image.

The digital camera has a sensor which is positioned behind the lens. When you press the shutter button, the sensor measures the light striking it and creates a digital image much in the same way a photocopier makes a copy of a document. This image is stored on removable storage called a memory card.

### **What is a CCD?**

The CCD is a collection of tiny light-sensitive diodes, which convert photons (light) into electrons (electrical charge).

### **The structure of CCD**

The feature of a CCD can be described by the number of pixels and physical size. If there is a 4.0 megapixel camera, it means there are 4 million sensors in its CCD. It also means the camera can produce A 4.0 megapixel-image.

### **How to compare CCD sizes?**

When you buy a digital camera, you should look at the specifications. If a CCD size is 1/1.8 inch, it is referring the diagonal size of the CCD. Regular cameras have a 1/2.7, 1/1.8, or 2/3 inch CCD. But, high-spec cameras have a much larger CCD, and the size is described as 22.7 x 15.1mm in the specifications.

### **What is ISO?**

The meaning of ISO (International Standard Organization) is how sensitive the image sensor is to the amount of light present... If the value of ISO is high, you can take a picture without a flash even if the amount of light is low. Noise will occur in a photo if using a high ISO setting due to higher grain, thus noise.

### **ISO can be classified as follows:**

Suppose you are in a concert and cannot use a flash. Your digital camera will automatically select good combination of the shutter speed and exposure setting. If you find the camera is using a shutter speed that is too slow (1/60 sec. and slower) to handhold the camera steady and shake-free (thus resulting in blurred pictures), and you cannot open up the aperture anymore, and you do not have a tripod or other means to hold the camera steady, select higher ISO setting which will then allow you to select a faster shutter speed.

## How to change the ISO setting?

There are two very different classes of digital cameras: point-and-shoot (p/s, fixed-lens) and Digital-Single-Lens- Reflex (DSLR). The digital cameras most people have are point-and-shoot cameras which are small and cute. The DSLR cameras are larger and are usually for professional photographers, but currently many non-professionals are interested in using DSLR cameras. Even if two cameras have the same number of pixels, a DSLR camera is more expensive than a point-and-shoot camera. Because DSLR cameras have more features and the quality of the photo is better.

## Different View finders

The two kinds of cameras have different types of view finder. A regular digital camera (p/s) has a range finder and an additional view finder, which is separate from the lens, to see a subject. This kind of camera is light, fast, and silent. The image viewed through a view finder is different from the image viewed through a lens because a view finder is in a different location coming from a different angle

In contrast, DSLR cameras have just one lens. There is a mirror in the camera. You can see the subject from the same angle as the lens. And you can add additional lenses to a DSLR camera.

**Point-and-shoot cameras** – use a separate view finder  
It is smaller, lighter, and more silent than a DSLR camera.

Most cameras let you make movie files with sound, such as mpg, avi or mov file. Overall these cameras are not as fast as we'd like. You have to wait for them to turn on, they don't focus very quickly because they have tiny motors.

the point-and-shoot cameras is ideal for beginners to automatically adjust setting but they also offer manually changing settings Learn how to effectively use your camera using photographic knowledge.

**DSLR Cameras** – using single-reflex lens

DSLRs have sensors almost as big as 35mm film, which is about five times the linear dimension or 25 times as much area as the sensors in p/s cameras. Higher ISO settings the images are much cleaner than p/s cameras. This lets you use high ISOs all the time, with even better results than film in low light.

Turn on very quickly and take a picture right after pressing the button. DSLRs have the fast AF motors of their film cousins. They also can track subjects in motion for great sports shots.

You can use all the lenses you already own and can buy new and used ones. Even a 15 year old autofocus or 40 year old manual focus lens can be used, depending on your camera Note The Older lenses may not allow for auto focus

DSLRs tend to be large and heavy have a lot of motors and mechanics which make noise.

Do I have to buy an expensive DSLR camera to get good quality photos?

The answer is **Not**. You can take superb photos with most of the mid- level digital cameras on today's market. Most people believe that a more expensive camera provides for a better photo. The truth is that having a more expensive camera will not improve your photos **it is the photographer**

## How to select the right camera for you?

There are important considerations when you are looking for a digital camera.

**Budget** You know which models are affordable to you.

**Experience level** If you are a beginner, find models that are easy to use.. Go to the store and handle different cameras. If you are more experienced, you may want a camera that gives the user more control even if it is not a DSLR camera.

**Sensor size** the size of the sensor means how large you can enlarge the resulting photo. The large size does not mean you can take better photos. If you were to take a colour photograph of a scene with three cameras with different-sized sensors, the 4X6 or 5X7 inch prints would appear to be the same quality. If you do want to make larger photos, you will require a larger sensor size

### **Zoom factor**

**Optical zoom** factor which is the amount of enlargement produced by the camera's lens.

**Digital zoom** factor is created electronically magnifying the image. Degrading the quality of the image by cropping from the center of the sensor.

**Camera mode** Look for a camera that has the best feature (mode) you need. Look carefully at the specifications of the cameras. Does it offer?

- Different scene modes?
- Shutter priority mode?

### **Battery**

Determine what type of batteries the camera uses. If you are a frequent shooter and it takes AA batteries, you will be constantly replacing them.

A rechargeable battery may be a better choice such as Li-ion battery, but always buy an extra battery.

### **Understand exposure**

ISO, shutter speed, aperture, EV compensation and flash are connected to each other and involved in the exposure. A better photo can be produced by a good combination of setting the above mentioned.

### **Understand the difference among digital cameras**

The functions and settings of your digital camera are different according to manufactures or camera models. Always refer to the manufacture's manual You should know what kind of options you can choose for your camera.

Some cameras offer more scene settings: Even if your camera does not have a manual setting, such as the aperture priority mode,



## **Squeezing the shutter smoothly**

Are you disappointed due to blurry photo? A common error many people make is to move the camera when they press the shutter button. A blurred image is thought to be a focus problem. But, it may have been caused by the camera shaking. Gently squeezing the shutter button instead of pressing it eliminates a lot of unintended camera shaking. Knowing how to press the shutter button is the first step in producing a good photo.

### **Smoothly Squeezing**

You should always try to squeeze the shutter button smoothly and not jab at it. Shutter bounce has become a serious problem with the newer cameras that are small and light. Putting your camera on your palm and holding your breath in a stable position, are the key factors you should consider.

The best way to push the shutter button is using two touches. It does not mean touching the button twice separately but pressing the shutter with two steps

- First click for focus
- second click for shutter release

### **Hold the camera steady**

Even though you smoothly squeezed the shutter, it would be big problem if your camera was moving. So, holding the camera steady is important. Here are some tips to steady the camera.

- holding the camera with arms braced
- use a strap to steady
- lean against a tree or wall
- use a tripod

### **Utilizing focus lock**

Are you unhappy with unfocused subjects? Most people try to place the subject at the center in the photo. Most digital cameras focus only on the center of the frame. If you want to take photos with the subject placed at off-centre, you need to use the focus lock feature of your camera.

## **General rules**

### **Rule one**

Fill the frame with your subject. Especially when you are taking a picture of people, it is better to focus on the subject. You don't need to take a picture of the whole body. Stand close to your subject or use the zoom function of your camera.

### **Rule two**

Change your camera position. Even though it is the same subject, you can get a more unique photo depending on your camera position or angle.

### **Rule three**

Use the rule of thirds. This proportional relationship asserts a natural balance and dynamic symmetry. A popular guideline used by photographers is called the "Rule of thirds." When composing a photo, you should try to place important elements at the crossing point that the imaginary lines dividing the image into three parts both horizontally and vertically are meeting.

### **The rule of thirds**

How to use the rule of thirds drawing imaginary lines dividing the image into thirds both horizontally and vertically. There are four crossing points as follows. You can place important elements on the intersecting points of the imaginary lines.

## **Definition of white balance**

The feature of the camera that adjusts the image captured by the camera's sensor to compensate for the different coloured light sources

Have you ever taken a photo indoors at night? If you have, you will notice. The background colour of the photo is yellowish because of incandescent light. You can adjust the colour using the white balance setting

The colour of light reflected off any object is determined by the colour of the light source. Human eyes automatically adapt to the changing colours of the light source and as a result, the objects appear white regardless of whether they are in the shade, in bright sunlight, or under a florescent lamp. Digital cameras attempt to operate much in the same manner, by determining the colour of the light source and processing the information from the camera's sensor in order to correct the colour information. White balance is that your camera adjusts the image captured by camera's sensor to compensate for the different coloured light sources.

## **Automatic White balance**

Digital cameras have a feature called automatic white balance (AWB) that attempts to adjust the colour balance settings automatically for the colour temperature of the scene being photographed. In most cases, using the AWB is your best choice. But in some situations, AWB doesn't correctly read the colour in the scene.

## **White balance setting**

If you know what your light source is, you can usually set the camera to it and this may give better results. Most digital cameras have settings for sunlight, shade, electronic flash, fluorescent lighting and tungsten lighting. You can change to an appropriate white balance setting after checking a photo you took with automatic white balance setting. The options for white balance might be different depending on manufacturers. Always check your manual.

## **Exposure Value (EV)**

**Photo too dark.** This is because there was not enough light the amount of light that strikes the camera's sensor is controlled by two factors: how much light is let into the camera (via the aperture) and how long the light is on the sensor (shutter speed). Usually your camera automatically calculates these settings. But, if the camera reads the scene incorrectly and overexposes an image, you will want to correct the setting and shoot again. To compensate for this potential problem, most digital cameras offer a setting called Exposure Value (EV) that lets you make small changes to increase or decrease the exposure of the photo.

When should you change the EV value? The camera usually calculates an appropriate exposure automatically. For example, when you take a picture of sunset, your camera will increase exposure because of the lack of light. Your photo of the sunset will be brighter than what you look at. At that time, you can decrease the EV value; then, your photo will illustrate a real sunset atmosphere.

## **Using Auto Bracketing**

A quick and easy way to get the best exposure is to use the auto bracketing menu in your digital camera. More and more cameras are now offering an auto bracketing feature that automatically changes the setting each time you take a photo. If you turn on the bracket function, the camera will take several photos each at a different EV setting you select the number of EV steps that the camera offers and the range of EV settings. This auto bracketing function is useful for taking pictures of static subjects such as landscapes.

## Flash

**Two types of flash for cameras:** built-in flash and external flash. Many cameras have a built-in flash integrated with the camera body or a popup style flash. All digital cameras have built-in flash that automatically fire when sufficient light is not available to get a proper exposure. Even if you have built-in flash, you can add an external flash. The external flash has several sophisticated features, so you need to make sure which type of flash will work best with your digital camera before buying it.

Most people think that the flash should only be used at night, but there are more than two ways to use a flash in the daylight.

### **When to use a flash:**

At night:

You need to use a flash at night, of course, but you should be careful about overexposing or underexposing a shot. If you are shooting too close to the subject, the subject will appear washed out or too bright. If you use your flash beyond its useful range the photo image will be dark.

### **Under shadow:**

Flash can be used in a daylight situation to prevent shadows. When your subject is under the shade of a hat or tree, a flash prevents the subject's face and background from being too dark. You should use the fill flash mode (always on).

### **Flash mode**

Most digital cameras have several flash modes that can be used for different lighting situations.

### **Automatic mode**

The flash is in shooting mode and is fired when the camera determines it is needed

### **Fill flash mode**

The flash fires with every exposure

### **Flash off**

The flash is turned off for every exposure when you want to control the shutter speed or aperture to take a night shot

### **Red eye reduction**

When you taking a picture of people or animals at night

. Suggestions for red eye reduction:

Use the auto red-eye reduction mode of your digital camera.

Increase the ambient light if you are in a room. The brighter it is the better.

Use a bounce flash. This method can be used when you have an external flash that can be pointed toward the ceiling.

Making light from the flash softer

If you think your flash is too bright, you can soften the light. It is very simple. Tissues over the flash head can be used to reduce the light from the flash.

## **Change the shutter speed.**

Are you displeased of subjects becoming blurred because they were moving? The reason is that the motion speed is faster than the shutter speed. The camera automatically adjusts the exposure settings using a combination of shutter speed and aperture settings. The camera doesn't know when you are shooting a subject that is moving fast, which would require a higher shutter speed.

### **High speed mode**

You can change the shutter speed from 30" to 1/1000 depending on your camera. Generally if the shutter speed is less than 1/125, It is called it high speed mode. If you use high speed mode, you can take a picture of a moving subject without blurring,

### **Slow speed mode**

By using a slow shutter speed when photographing a road during the night, you can produce trails of lights

When should you use a slow shutter speed? When you want to take a picture under low light or to make a blurred photo.

### **Changing shutter speed**

If you want to change the shutter speed, read your camera manual to find the shutter speed priority mode.

## **Using Burst Mode**

Many cameras offer a burst mode that will take several photos a second. This feature allows you to shoot a series of photos of a moving subject. The number of photos that your camera can take in a single burst is different, This mode can be selected by your cameras menu, look in the manual.

## **Depth of field**

When you are taking a photo, the camera focuses on an object. The range in a photograph, from near to far, that appears to be in focus is called depth of field. In a narrow depth of field, only the things at a short distance are focused and the background at a long distance away is blurred. A wide depth of field means that both subjects nearby and faraway are in focus.

### **Use the zoom function as much as possible.**

It is better to zoom in on your subject to make the selective focus effect. stand as far from the subject as possible so you can zoom in. take a close-up shot using the zoom function, for example, making a photo of a face or just the upper half of body.

Increase the distance between the subject and the background.

The greater the distance is between the background and the subject, the better the selective focus effect.

### **Use Focus lock.**

The focus lock technique is useful to make the selective focus effect. Here is how: focus on your subject, zoom in, then press the shutter button half-way down, make a composition by moving the camera, and smoothly squeeze the shutter.



## How to take photos of people

. Apply basic techniques to real situations. Use several skills to take good photos of people. Keep the directions in mind and practice as much as possible with your digital camera. *Your photos will improve with practice.*

### Composition

Emphasizing people more than backgrounds:  
If the subject is too small to recognize. Fill the frame with your subject. Come close to your subject or make your subject come to your camera.

#### **Adjust to the eyelevel of your subject:**

Avoid shooting a subject from a low or high position. The rule of thumb for photographing portrait is to make sure the subject's eyes are in sharp focus.

#### **Using the rule of thirds:**

One of popular rules of composition is the rule of thirds.

- First, draw imaginary lines dividing the photo into thirds both horizontally and vertically
- Second, place important elements of the composition where the lines intersect.  
The rule of thirds gives stability

### Light

If you think the light is too bright or dark, increase or decrease the value of EV in accordance with the brightness of the background.

Use a flash when

- there is too much light behind your subjects
- faces of people are dark when there is too much back light

### Selective focus

Using selective focus technique

Make a narrow depth of field with the selective focusing technique. The selective focusing technique is a good technique to make the people stand out in your photo. You can also use it when you shoot photos of flowers or other objects. If you want to use selective focus, change the aperture setting to a lower setting, increase the distance between your subject and background, and zoom in on the subject.

## **Techniques for taking photos of landscapes.**

Parallel the frames with the horizon:

If you are photographing landscapes which include the horizon, it is a good idea to make the frame parallel to the horizon, by placing it at the one-third line Paralleled horizon

### **Increase the aperture setting:**

Increasing the aperture setting makes a wide depth of field that focuses in front of and behind the subjects. This technique is generally available in daylight. Night photography uses a different aperture setting.

### **Change EV value:**

If you are taking a picture in sunset or sunrise, you should consider the exposure of your camera. Usually using -1EV or -2EV is useful in taking photos

### **Make the shutter speed slower:**

To make water blurred and to appear to be moving. Use a slower shutter speed, the area surrounding the creek or waterfall remains in focus, but the water becomes blurred and takes on a mood. Set the camera setting so that the shutter speed is no faster than 1/4 of a second. Depending on the speed of the water, you can adjust the shutter speed. Remember that most point-and-shoot cameras if the shutter is open check the brightness of your photo. You can change shutter speed even if your camera does not have the shutter speed priority mode. If your camera has the aperture priority mode, set your aperture to the smallest setting. The smaller the aperture, the longer the shutter will stay open.

### **Finding subjects anywhere**

Most people think that macro photograph is only for natural subjects. The creative use of a camera's macro mode is to take a photo that gives a viewer a chance to look at common objects with a different perspective.

### **Taking a macro photograph**

Use 'Macro mode' in your camera: read the manual to find out the macro focus range which is different in every camera. The range contains a minimum distance and a maximum distance.

### **Use the aperture priority mode:**

After setting the macro mode in your camera, consider the aperture opening. The F number is related to the depth of field. Because your camera is so close to the subject, a wide depth of field is necessary to obtain focus. The camera will change the shutter speed depending on the F number.

### **Steady the camera – use a tripod if possible:**

When you increase the F number, you take care to steady the camera if the shutter speed is slower than 1/30 of a second. The best way to steady the camera is by using a tripod. Place the camera on the ground or on something placed high if your subject is located at ground level. Use a self-timer function which is a good way for preventing camera movement.

### **Using tripod**

In the city at night, streetlights and neon signs create exotic images which look nothing like their daylight counterparts. We have lots of opportunities to take photos at night. Night photography requires a different photographic approach.

### **Photographing people**

Appropriate distance of flash and softer light from flash:

A flash is necessary at night. When using a flash, you should think about the appropriate distance for using flash.

If your subject is too close to your camera, the photo may be too bright or have a washed-out effect. You can use tissue to make the light from flash softer

### **Use red-eye reduction:**

At night, you should turn on the red-eye reduction mode on.

### **Change white balance setting:**

When you are taking photos indoors, consider what kind of illumination is used. After taking photos, review your photo and change the white balance setting if necessary.

### **Photographing landscape**

A tripod is important for a good photo at night. It is better not to use a flash because of the limitation of distance. In night photography, has a low F value and a slow shutter speed. You need to steady your camera.

### **Increasing ISO value or EV value**

ISO is the sensitivity setting. You can take a picture in low light circumstances with a high ISO value. the distortion in your photo will increase the higher the ISO. Review the photo after taking a picture. You can also use a higher EV setting to increase the amount of light.

### **Using a lower aperture value:**

If you want to make sparkling streetlights use the aperture priority mode. Once the F number is low (the aperture is more open), the light on the bridge tends to spread out. In contrast, once the F number is higher (the aperture is more closed), the light appears to sparkle as in the photo

**Making the shutter speed slower**

While the shutter is open, the lights will be expressed as lines of car movement. d select the shutter speed priority mode and change to a range between one second and four seconds. Take a photo using the self-timer function and use a tripod to steady the camera.

## **Recommendations**

A lot of amateurs make the same mistakes: not thinking about what they're shooting; not considering the light; not getting in where the action is; using a flash in a big interior where it won't do any good.

Shoot lots of pictures and throw away the bad ones. try more angles, exposures, and settings. try a lot of different approaches. Try to get close enough to your subject to capture the important details.

Use a tripod, to allow for a slower speed and longer lenses during twilight.

The human eye sees differently than a camera, so try to imagine how that image will look in a photograph

Force yourself to "think little" and to "think big" by doing close-ups and long shots. You'll gain a lot in the process of looking for details and grand-scale images.

## Photography terms and acronyms explained

Even if you are a photographer thinking you are reasonably well-versed in the jargon, the lingo, of photography Chances are you missed at least one or two of those abbreviations.

### **MILC**

Stands for Mirrorless Interchangeable Lens Camera. MFT means Micro Four-Thirds a particular sensor format, sometimes represented as M4/3.

### **AF**

stands for Auto Focus. DSLR is Digital Single Lens Reflex,

### **IS**

is short for Image Stabilization, which can be in-body, lens, both, or not included.

### **Aperture.**

A device that controls the amount of light passing through the lens to reach the film/image sensor. It works in conjunction with the **shutter** that controls the length of time that light is allowed to pass through the **aperture**.

#### **A. Aperture Priority**

Automation, abbreviated A or Av, lets you set the desired aperture (f/stop), while the camera chooses the shutter based on its meter reading and the preset ISO.AE-L.

**AF. Auto Focus.** The AF feature automatically focuses on a subject for a sharp image. Many cameras have sophisticated selectable autofocus systems, but also have manual focus for when autofocus doesn't work well.

**AF-L.** Auto Focus LOCK; allows the focus to be locked on a specific part of the scene, overriding the autofocus. Autofocus often defaults to the nearest object in the scene instead of your subject.

**Artifact.** Picture degradation that occurs from image processing, such as the compressing of a JPEG. Visible as banding, haloing (halation), and increased digital "noise."

**Aspect Ratio.** The ratio of a picture's length to its width. The common 35mm full-frame, 36 x 24mm, has an aspect ratio of 3:2.

**A—Auto. Short for Automatic,** sometimes signified by a little green camera icon on the selector dial. In full Auto Mode, the camera calculates and adjusts all camera settings for correct exposure, a "point-and-shoot mode." Most digital cameras have it, including many high-end DSLRs.

**AWB.**

Auto White Balance. “White” light has always been considered to be noon sunlight. “Daylight” films are balanced for it but produce strange colours indoors in artificial light. Digital can be “white balanced” for nearly any light. AWB is a compromise that works fairly well in most light. If you shoot in RAW, white balance can be changed in post-production.

**Bracketing.**

Taking three or more exposures on either side of the metered exposure to increase dynamic range.

**B. Bulb**, a mode for making exposures longer than 30 seconds (the maximum exposure time on many cameras). It takes its name from the old pneumatic bulb shutters on studio cameras.

**CMYK.**

Stands for the secondary colours: Cyan, Magenta, Yellow, and Black, the four-colour process used in most colour reproduction such as posters and magazines.

**DOF.**

Depth of Field; the zone of apparent sharp focus before and behind a subject focused upon in a photograph.

DOF is affected by the aperture, lens focal length, and the distance focused upon. It can be very shallow or very deep depending on all the affecting factors.

**DPI.**

Dots per inch, often used interchangeably with PPI (Pixels Per Inch).

Higher DPI or PPI values show more detail. DPI is used in printing, and PPI in photography.

**DSLR.**

Digital Single-Lens Reflex camera. Single-lens reflex cameras use an angled mirror to reflect the light coming in from the taking (single) lens, redirecting it through a prism or Penta mirror to a viewfinder. They usually have interchangeable lenses and are distinct from Mirrorless (MILC) cameras.

**Dynamic Range.**

The range of luminance of an image between its highest and lowest light intensities.

**Exposure.**

The total amount of focused light striking the film or sensor, controlled by manipulating the Exposure Triangle.

**Exposure Triangle/**

Shutter, Aperture, and ISO, the three variables of correct Exposure.

**EV. Exposure Value.**

The EV system uses a simplified single number substituting for the shutter speed/aperture combination at a given ISO. One full EV is equivalent to a one-stop change when adjusting exposure compensation or bracketing.

**Extension Tubes/Rings.**

Non-optical tubes (rings) made from metal or plastic inserted between the lens and the camera, increasing the lens-to-sensor distance, allowing any lens of any focal length to focus closer than normal. "*Poor Man's Macro.*"

**Focal Length.**

The distance in millimeters (e.g. 28 mm, 50 mm, 100 mm) between the lens's rear nodal point and the image sensor or film when the lens is focused at infinity. In the case of zoom lenses, both the minimum and maximum focal lengths are stated (70–300mm).

**FPS. Frames Per Second,**

The number of exposures a camera makes in burst mode, usually variable, as 5 FPS, 8 FPS, 12 FPS, or even higher depending on the camera.

**F-Stop or f-Number.**

A number that indicates the physical area of the aperture or opening in your lens. Every aperture is expressed as an f-stop or f-number, such as f/11 or f/2.8.

**G. Glass,**

Shorthand for lens

**Golden Hour.**

Considered to be the hour before the sun goes down, and after sunrise.

"*Photographers' light.*"

The light is usually very warm and complements skin tones.

**HDR.**

High Dynamic Range; a technique for capturing a wider range of proper exposure with detail from deep shadow to bright highlight than may be possible from a single exposure. Usually accomplished by bracketing exposures, then combining three or more into an HDR using an application like Photoshop. Works best on a tripod with static subjects like architecture or landscape.

**Histogram.**

A bar chart graph that shows all of the tones in a digital image. A bell-curve histogram shows proper exposure, with the mid-tones humped in the center and the darkest and lightest values down at each end. Many cameras can display a histogram in the finder to aid in determining correct exposure.

Most editing programs will generate a histogram that is very useful to the worker.



**Hyperlocal.**

Hyperlocal distance is a technique for setting a lens to make apparently sharp pictures within a certain distance range by manipulating the depth of field. The purpose is to get a sharp picture from near to far, even infinity, without refocusing.

**IS. Image Stabilization**

(A.k.a. shake reduction, SR, VR, VC – names various manufacturers use). Enables you to get sharper images hand-held at longer shutter speeds, or in dark conditions, or at longer focal lengths. Sometimes is in the lens, sometimes in the body, sometimes in both.

**Iris Diaphragm.**

The variable aperture within the lens that controls the area of the opening (f/stop).

**ISO.**

International Standards Organization. In film, ISO (formerly ASA) is a number representing the sensitivity to light of the film. In digital photography

ISO measures the relative sensitivity of the camera sensor and can be adjusted in-camera. Film determines the ISO/ASA and locks it for the whole roll; digital allows us to vary the ISO frame by frame if we choose. The higher the number, the greater or “faster” the sensitivity.

**JPEG/JPG.**

(From Joint Photographic Experts Group) is the most common image file format saved by digital cameras, as opposed to RAW. JPEGs are compressed from the raw sensor data, losing some quality.

**Kelvin.**

The visible light spectrum in terms of colour temperature. Measured in degrees Kelvin (°K), named for Lord Kelvin (1824-1907) who devised the Kelvin absolute temperature scale. Noon daylight is usually around 5000°K. Household incandescent or equivalent is much yellower at around 2800°K.

**Light.**

Visible electromagnetic energy that makes it possible to see and photograph Images. Light visible to the human eye lies on a fairly narrow band of wavelengths, allowing us to see the colours red, orange, yellow, green, blue, indigo, and violet. Colours we cannot see but can photograph include infrared and ultraviolet.

**Light Meter.**

A photosensitive instrument for measuring the intensity of light reflected from or falling on a scene. Also called an exposure meter because it is most often used to determine correct exposure. Your camera has a light meter that measures light reflected from the scene.

**Luminance**

The intensity or brightness of a light source or of the light in a scene. Pure white has maximum brightness; pure black the minimum.

**M. Manual Mode**

The opposite of A-Automatic. When shooting in Manual, you take total control over every setting on your camera: aperture, shutter speed, ISO, white balance, metering, and even focus, if you choose. Modes. Automatic systems pre-programmed for taking photographs of common subjects such as action, portrait, landscape, night portrait, panorama, and more,

**Metadata.**

Non-image forming data embedded within image files describing the image. The information may include camera model, lens, exposure settings, and more.

**Megapixel.**

One million pixels; an area measurement like square feet. Used as a measure of resolution.

**M4/3.**

Short for Micro Four-Thirds, also known as MFT. A mirrorless digital interchangeable lens system (MILC) developed by Olympus. Its sensor is smaller than APS-C (“half-frame”) but larger than 1”.

**Neutral Density.**

A filter for use over the lens that absorbs all visible wavelengths equally. ND filters can be used with digital and colour films since they have no effect on colour balance. They are used to make longer exposures than would otherwise be possible, like for “silky” moving water.

**Noise.**

Often referred to as digital grain, noise looks like tiny coloured specks on a photo. It is especially visible in images shot at high ISO or very slow shutter speeds. Noise is actually an unwanted signal-to-noise ratio.

**Overexposure.**

When a picture is overall very light, with little or no detail in the brightest highlights.

**P. Program Mode**

An automatic shooting mode where the camera adjusts both aperture and shutter speed automatically, while allowing you to adjust ISO. Useful when you need to quickly adjust either shutter or aperture while the camera instantly compensates the other to keep the same exposure. Gives finer control than A- Automatic mode.

**Panning**

The technique of taking a picture while tracking motion at a relatively slow shutter speed. The moving object appears more-or-less sharp while its surroundings are blurred. It illustrates or implies motion.

**P&S. Point and Shoot;**

Any camera in full automatic mode. Generally, this refers to small-sensor pocketable cameras with few to no user controls – just automatic and scene modes – but any camera that has a total auto mode can be used like a P&S.

**Pixel.**

Abbreviation for “picture element,” the smallest unit in a digital image. A small square of coloured light that forms a digital image as a mosaic.

**Post. Short for post-processing**

In apps such as Lightroom, and Adobe Camera Raw.

**Prime.**

A fixed focal length lens as opposed to a zoom lens. Primes are often considered sharper and faster than zooms or varifocals, plus they are lighter and more compact.

**Quality. Image Quality (IQ),**

Generally. A well-photographed and well-processed picture that is sharp, with accurate colour, good composition, and other excellent characteristics.

**RAW.**

RAW format, or just RAW. Not an acronym but rather all of the raw, unprocessed, uncompressed data captured by the camera sensor. It's often described as analogous to a film negative. RAW files are many times superior to JPEGs but **they must be post-processed or there is no image.**

**Resolution.**

The fine detail in an image. In digital it refers to the number of pixels that fit into a given area, given as Pixels Per Inch (PPI).

**RGB.**

RGB stands for Red, Green, and Blue, the additive colour primaries for viewing imagery on digital displays

**Shutter.**

Controls the length of time that light is allowed to pass through the lens to reach the film/image sensor. Shutters are composed of blades, a curtain, a plate or other movable device.

**S. Shutter Priority Mode (sometimes TV, Time Value);**

An automatic setting where you set the shutter speed while the camera automatically adjusts the aperture for proper exposure. Good for shooting moving subjects. It prioritizes speed over depth of field. Good for panning.

**Saturation.**

The degree of intensity of colour in an image. Saturated colour can be strong, rich, vivid, in-tense, or deep. Desaturated colour can be weak, pale, washed out, or dull. An oversaturated image's colours are too intense

**Scene Mode.**

Fully automatic camera modes with pre-set exposure values based on different types of situations and subjects. Produces JPEGs only. SLR. Single Lens Reflex; any camera using a mirror to divert the image-forming light from the taking lens to a viewfinder.

**TIFF.**

Tagged Image File Format, a lossless, uncompressed file format for digital images that does not lose colour and detail.

**Tonal Range.**

The range between the lightest and darkest areas of an image, also called dynamic range. A picture with very bright and very dark areas has a wide tonal range, which may be outside the ability of the sensor to hold detail on both ends.

**TLR. Twin Lens Reflex,**

A camera with two lenses and a mirror that diverts an image from the upper viewing lens to a viewfinder.

**TTL.** Through the Lens, refers to the automatic metering system which is reading through the taking lens. Many shoe-mounted speed lights, flashes dedicated to a particular camera, can be TTL, yielding astonishingly accurate flash exposures without resorting to head-scratching kitchen arithmetic.

**Underexposure.**

Usually means that the exposure value was too low, resulting in a photo that may be too dark to produce normal contrast.

**Varifocal.**

A camera lens with variable focal length in which focus changes as focal length and magnification vary, as compared to par focal ("true") zoom lenses, which remain in focus as the lens zooms. Varifocals focus and zoom internally;

**Vibrance.**

A post-processing term coined by Adobe to describe a "smart" saturation setting. Vibrance affects only colours that are not already fully saturated to avoid oversaturation.

**Vignetting.**

When the corners of a picture are faded or cut off. Using a lens formulated for a crop sensor on a full-frame camera will cause dark vignetting at the corners because the image circle is smaller than the sensor. Using the wrong lens hood can cause dark vignetting. In post-processing, light or dark vignettes can be created as an artistic device.

**WB. White Balance.**

“White” light has long been defined as noon sunlight. “Daylight” films are balanced for it but give strange colours in artificial light. Digital can be specifically balanced for nearly any light. You can choose from a menu, you can use a Kelvin scale, or you can “shoot” a custom white balance from a gray card or a neutral wall. If you shoot in RAW, white balance can be fine-tuned or completely changed in post-production.

**X-Sync or Setting.**

Instant synchronization of electronic flash with the shutter. The flash fires at the instant the shutter is fully open. Electronic flashes produce a very short flash so the entire frame is fully exposed before the shutter can close.

**Yellow Filter.**

A pale-yellow filter was commonly used in black and white photography because yellow absorbs blue, causing a subtle increase in contrast in a blue sky. Monochrome photographers usually carried an assortment of filters in different colours and densities to modify tonal values.

**Zoom Lens.**

A par focal camera lens with variable focal length which remains in focus as the lens zooms, as opposed to varifocal lenses where the focus changes as the focal length changes. Varifocals focus and zoom internally; par focal often change their physical length when zooming.

**Self-Check Quiz:**

1. What does MILC stand for?
2. What does FPS refer to?
3. What is "Post" shorthand for?
4. What does IQ in photography refer to?
5. True or False: EV is the same as an f/stop or a shutter speed.
6. True or False: TLR is an acronym for a photographic chemical.
7. True or False: The letter P on your command dial stands for Professional.
8. True or False: ISO is not a leg of the exposure triangle
9. True or False: A higher ISO number requires more light for a proper exposure
10. A higher ISO number indicates the film is less sensitive
11. True or False: Shutter speed settings on digital cameras are the equivalent of ISO ratings on film
12. True or False: The basic sensitivity setting of most digital cameras is equivalent to ISO 100 film
13. True or False: Gently squeeze the shutter button all the way down
14. True or False: Keep the finger on the button
15. True or False: Press and hold the shutter button halfway down so that camera focuses on one of the subjects
16. Write an appropriate terminology in the blank.

\_\_\_\_\_ is a semiconductor technology used to build light-sensitive electronic devices such as digital cameras and image scanners. It is the sensor used in digital cameras. The important feature is its physical size. The larger the sensor, the larger the digital image it produces.

17, For which of following situations should you adjust the white balance setting of the digital camera?

True or False: When you review the photo through the LCD, the colour of people has reddish hues

True or False: When you try to make good composition

True or False: When you prevent red-eye in your photo

18. When you want to make the background brighter or darker, which of following settings should you change in your digital camera?

AE    CCD    EV

19. Which of following occurs after shutter priority is selected in digital cameras?

True or False High shutter speed should be accompanied with external flash mode

True or False: Slow shutter speed can be used when we want to get photo freezing the action

True or False: The camera will automatically select aperture setting to compensate for the shutter speed

True or False: We can control exposure value of background with this setting

20. Select the appropriate condition when using the out focus technique.

True or False: The aperture setting should be made (smaller / larger)

True or False: You should use (zoom / AE lock) function as much as possible.

True or False: The distance between a subject and background should be made (closer / far)

21. Which is the appropriate technique for shooting landscape?

True or False: It is better to use a burst mode

True or False: It is better to use a tripod

True or False: It is better to use a macro mode

True or False: It is better to use a red-eye reduction

True or False: Choose appropriate descriptions for shooting close-up photos.

True or False: It is better to use a shutter slow mode

True or False: It is better to use an aperture priority mode

True or False: It is better to use a flash priority mode

True or False: It is better to use a macro mode

22. Which technique should be used to make night photos?

True or False Selective focusing technique should be used

True or False Flash mode should be used

True or False Lower number of ISO range should be selected

True or False Shutter speed should be slower



## **Legal notice**

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## **Bio**

My name is David Wright.

I have many years experience writing procedures on how to test high tech electronic equipment. Re wrote technical manuals so that the average person could understand them.

Set up numerous training programs to train Junior techs.

My documenting skills are excellent paying attention to details satisfying the toughest ISO auditors.

I have enhanced my writing skills by successfully completing a course in Writing for Children's literature.

Completed course from AWAI in Copy writing service ,B2B copy writing, Seo management , Email marketing and web design

This has helped me write how to articles and Information Books that you will find on my website Discount E Books <http://www.discount-ebook-s.com/>

I have had a Camera in my Hand since 1965 Gone pro In 1999

Took the course from ICS in Photography

I am now at a point in life I would like to share my knowledge with the world and the best way I know how is by Print either electronically or Hard copy paper.

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