Quadrant II- Transcript

This module pertained to paper photography, with paper code PYS 108, in Semester 3, for the subject Physics, in program, Bachelor of Science.

The unit name is DSLR camera.

Module name is Detailed operational procedure of a DSLR camera and shooting modes.

Model number is 5.

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Outline of the module
1.Detailed operational procedure of a DSLR camera
2. Photo shooting modes

Learning outcomes.
The learner will be able to operate a professional DSLR camera.
Gain knowledge pertain to various photo shooting modes and its applicability in image capturing

DSLR camera
Most resourceful and sophisticated cameras used by professionals. The term DSLR is the short form for digital single lens reflex. DSLR cameras provide various options for taking pictures. The options are designated by manual, aperture, priority, shutter priority or program modes. DSLR cameras are the favorite of professionals due to the availability of various exposure settings and the option of interchangeability of lenses.

Let us discuss the various modes of photography available on a DSLR camera

Auto mode.
In this mode, the light exposure over the sensor is decided automatically by an inbuilt algorithm and automatic exposure is arrived at by optimizing shutter speed, aperture and ISO based on the set algorithms. It also takes care of the need for inbuilt flash depending on light conditions. A DSLR camera in auto mode can be equated to a simple point and shoot camera. Effective when settings are difficult to choose or need to shoot quickly. Images appear correctly exposed when subject illumination is uniform. Achieving optimal exposure may be a struggle in situations wherein the light is uneven.

Portrait mode.
In portrait mode, the camera will think that there is a subject in the foreground of the frame and choose a shallow depth of field. In this mode, the algorithms are set to keep the human subject

in focus to avoid prominence of unwanted objects. The background is deliberately blurred. If the camera measures the average light intensity of the scene as dark,this mode provides an automatic fill in flash. Maybe of creative advantage in sunny conditions too, when the sun cast a harsh shadow. Portrait mode generally works perfectly well in well-lit conditions.

Macro mode

Macro mode is used for taking photographs of smaller subjects in close range. However, it will not give a super closeup image. To obtain this peculiar effect, one needs to use a macro lens. Macro mode works best in bright conditions. Normally macro mode is set for a shallow depth of field. To focus on the subject in low light conditions a tripod is preferred to create a good macro image. The focusing has to be precise to avoid any error due to shallow depth of field.

Landscape mode.

A landscape photograph generally requires a uniform focusing. To achieve this condition in landscape mode, the camera gets set in a small aperture. An image taken with a small aperture usually comes out well focused from the foreground to a considerable distance. Landscape mode works better with a wide angle lens. This mode is preferred to capture well lit scenes. In this mode, the flash comes on automatically if the camera reads foreground as too dark. If not required, one needs to turn flash off manually.

Sports mode

Used to create images of sports activities which are fast paced. In sports mode, the camera is set to high shutter speed in the range of 1/ 500 to 1/1000 of a second. With a higher shutter speed it is possible to freeze a movement in photography. Sports mode can work well alongside continuous shooting mode, wherein images are taken one after another to capture an action. Generally, in this mode flash won't respond. Works better in a bright scene.

Night portrait mode.

In the night portrait mode, the camera settings are adjusted to balance the darkness of the background with the subject in foreground lighted up. The aperture is selected to a fairly wide level to allow enough light in to capture the background and keep the subject in focus. Generally, an automated flash on is activated, which is necessary to illuminate the person and avoid blur. The Night portrait mode may activate a double flash creating an unusual double exposure look

Advance camera modes.

All DSLR cameras are equipped with the following advanced letter modes

1. M (Manual),
2. AV (Aperture-Priority),
3. TV or S (Shutter-Priority)
4. P (Programmed Auto

These letter modes are the ones normally professional photographs use.

Manual mode.
In this mode the photographer is free to set every single camera setting.The light exposure which generates the digital image can be controlled precisely in manual mode.Manual mode allows the photographer to make all the decisions that determine an image's exposure.
Manual exposure provides maximum control to the photographer.

Aperture-Priority
In this mode, the photographer manually sets the lens aperture, while the camera automatically picks the right shutter speed for an optimised light metering. In a bright light scenario,the camera automatically increases the shutter speed. In a low-light environment, the camera decreases the shutter speed. In this mode the photographer is in full control over subject isolation and one can play with the depth of field by varying lens aperture.There is only a minimal risk of having an overexposed or an underexposed image in this mode, since modern DSLR cameras can handle shutter speeds as low as 30 seconds and as fast as1/8000th of a second.

Shutter-Priority Mode
In this mode the photographer chooses the shutter speed and the camera automatically sets the correct aperture based on the amount of light that passes through the lens. This mode is best utilised in situations wherein a subject motion needs to be frozen or intentionally blurred.In bright light conditions, the camera will increase the lens aperture to a higher number.If there is not enough light for exposure,the camera will decrease the aperture to the lowest number.The shutter speed stays the same (what is set), while aperture automatically increases and decreases, based on the amount of light.No control over subject isolation and camera decide the depth of field.

Program Mode
The camera automatically selects the Aperture and the Shutter Speed based on the amount of light that passes through the lens. The camera will try to balance between aperture and shutter speed by increasing or decreasing the two, based on the intensity of light.If the camera is pointed to a bright area,the aperture will automatically increase to a higher number,while keeping the shutter speed reasonably fast.Pointing the camera to a darker area will decrease the aperture number to a lower value, in order to maintain a reasonably fast shutter speed.In low light, the lens aperture will stay at maximum aperture, while the shutter speed will keep on decreasing until it reaches proper exposure.

The last slide provides the references an attributes
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