**Digital SLR Camera Basics**

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**Learning Objectives**

After this lecture, you will be able to

- Describe the design of s SLR camera
- Handle a camera properly
- Describe the features of a modern digital camera
- Be fluent in photography

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**Digital Single Reflex Camera (DSLR)**

- Zoom ring  
- Focus ring  
- Distance scale  
- Neckstrap lug  
- Mode dial  
- Monochrome LCD control panel  
- Viewfinder eyepiece  
- Control buttons  
- Shutter release  
- Main command dial  
- Neckstrap lug

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**Digital Single Reflex Camera (DSLR)**

- Autofocus assist lamp/self-timer lamp/red-eye reduction lamp  
- Electronic flash hot shoe  
- Mode dial  
- Subcommand dial  
- Infrared receiver  
- Handgrip  
- Flash-lock release/sync mode/exposure compensation  
- Lens release button  
- Depth-of-field preview
Inside a Digital SLR Camera

**Good Practice**

- **Battery**
  - Remove from the camera when not used for a prolonged time.
  - Don’t store charged batteries. Charge just before use.

- **LCD Panel**
  - 99.9% active pixels
  - Dead pixels visible in red, or black, will not be saved
  - Low temperatures ⇒ slow response
  - High temperatures ⇒ may go black

- **CF Card**
  - A precession device ⇒ Don’t drop. Handle with care
  - Magnetically susceptible ⇒ Don’t leave on TV set, or near magnets that could destroy images in it
  - Always store in the case. Not in hot, dusty, humid conditions

- **Lens Electrical Contacts**
  - Attach lens caps immediately after detaching from the camera
  - When you leave the lens without closing the rear end keep the open rear end up, even momentarily till you quickly close it (avoid scratching lens or its electrical contacts)

**Major Buttons**

- Self-timer
- Dioptric adjustment knob

**Major Buttons**

- LCD panel illumination button
- Drive mode selection/ISO speed button
- Main Dial
- Shutter button
- Red-eye reduction/ Self-Timer lamp
- Grip (Battery compartment)
- Flash button
- LCD monitor
- Video OUT terminal
- Remote control terminal (N3 type)
Quick Start

1. Insert the battery
2. Attach the lense
3. Set the lense focus mode to AF
4. Insert the CF card
5. Then, turn ON power

6. Set the mode dial to Full Auto
7. Focus the subject
   1. Press the shutter button halfway
   2. Check AF point(s) blinks
   3. Check automatic exposure
8. Take the picture
   1. Press the shutter button full depth
9. Preview the picture
   1. 2s automatic display
   2. Use preview button for longer display
   3. Erase bad shots immediately and save CF memory

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LCD Panel

- Shutter speed
- ISO speed
- White balance:
  - Auto
  - Daylight
  - Shade
  - Cloudy
  - Tungsten light
  - White fluorescent light
  - Flash
- User settings:
  - Date
- White-balance correction
- Battery check
- Red-eye reduction
- Flash exposure compensation
- Image-recording quality:
  - LCD
  - Large/Mfix
  - Medium/Mfix
  - Small/Mfix
  - RAW
- Aperture
- Shutter remaining
- SfF driver countdown

Viewfinder Screen

- Focusing screen
- AF points (Superimposed display)
- Spot metering circle
- Exposure level indicator
- Exposure compensation amount
- Flash exposure compensation amount
- AE range
- Red-eye reduction lamp-on indicator
- CF card full warning (Full, CF)
- CF card error warning (Err, CF)
- No CF card warning (no CF)
- CF card warning (CF)
- CF card error warning (Err, CF)
- No CF card warning (no CF)
-_AF lock/
- AE lock/
- AEB in progress
- Flash-ready
- Imprint FE: lock warning
- High-speed sync
- FE lock
- FE lock in progress
- High-speed sync
- Exposure compensation amount
- AEB range
- Max. Burst
- White balance correction
- Exposure level indicator
- Exposure compensation amount
- Flash exposure compensation amount
- AE range
- Red-eye reduction lamp-on indicator
- Shutter speed
- ISO speed
- FE lock (FEI)
- Busy (Busy)
- Built-in flash recycling (a a a Y Y)
- AC source
Menu Operations

- <MENU> button
- <JUMP> button

Image Recording Quality

- Is one of the very first things you should set, if you know what you are going to do with the photos

<table>
<thead>
<tr>
<th>Image-recording Quality</th>
<th>Image Type (extension)</th>
<th>Pixels</th>
<th>Print Size</th>
</tr>
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<tbody>
<tr>
<td>L (Large/mini)</td>
<td>JPEG (.jpg)</td>
<td>3504 x 2336 (Approx. 8.2 million)</td>
<td>A3 or larger</td>
</tr>
<tr>
<td>L (Large/Normal)</td>
<td></td>
<td>2544 x 1696 (Approx. 4.3 million)</td>
<td>A5 - A4</td>
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Menu Operations

- <MENU> button (Red)
- <JUMP> button (Red)

Checking Current Camera Settings

- Info button

Menu Operations

- <MENU> button

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**Shooting Modes**

- **Creative Zone**
  - Set the camera as you wish.
  - **P**: Program AE
  - **Tv**: Shutter-priority AE
  - **Av**: Aperture-priority AE
  - **M**: Manual exposure
  - **A-DEP**: Automatic Depth-of-field AE

**Basic Zone**
- All you do is press the shutter button.
- **Full Auto**
- Flash 60 4.5
- For fully automatic shooting.

**Image Zone**
- Fully automatic shooting for specific subjects.
- **Portrait**
  - Flash 60 4.5
- **Landscape**
  - 4 5.6 (no flash)
- **Close-up**
  - Flash 60 4.5
- **Sports**
  - 8 4.5 (no flash)
- **Night Portrait**
  - Flash 25 4.5
- **Flash Off**
  - 10 4.5

**Program AE: Program Shift**
- You can use the main dial to shift between constant exposure combinations of shutter speed and aperture.

**Fully Automatic Shooting**
- The closest object in the AF points is selected to focus.
- Shutter speed and aperture are automatically set and displayed in the viewfinder.
- Under low light conditions if focus cannot be achieved, AF assist beam is fired.
- Zoom, compose, and focus with AF. Don’t change zoom while focusing, which will throw away the focus, or do it if you want to get a strange effect.
- You can enable focus confirmation beeper. If focus confirmation light blinks the picture cannot be taken.

**Portrait Mode**
- Blur the background (wide open aperture) to make the human subject stand out.
- Use a telephoto lens (narrow DOF)
- Have the subject stand away from background
- Fill the frame with the subject
**Control Light in Portrait Mode**

- Manipulate light using diffusers and reflectors

  ![Images of photos taken with different lighting setups](images)

  - With uncontrolled light
  - With a diffuser
  - With a diffuser and a reflector

  *Fill = ⅓ Key light*

**Advance Light Control**

- Built-in flash: No light control
- Diffused light from left

  - Reflection of the flash
  - Unnatural shadow
  - Cannot see champagne inside

- Illuminate the background
- Get some light through the bottle
- Illuminate the right hand side with diffused light

**Get Light Through Liquid**

- Light through the glass records the color of the liquid inside
  - Use a focused overhead light, and a cardboard reflector

  ![Images of photos taken with different lighting setups](images)

- Tilt the camera for a better composition

  - The final setup
  - What we had at the beginning

**Landscape Mode**

- For wide scenic views and night scenes
- Lowest aperture => deepest DOF
- Use a wide angle lens for better results
- Single shot shooting
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<th><strong>Sports Mode</strong></th>
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<td>To photograph flowers, insects, etc.</td>
<td></td>
</tr>
<tr>
<td>Focus at the lens’ closest focusing distance, as much as possible</td>
<td></td>
</tr>
<tr>
<td>Use the maximum zoom, or a macro lens for better quality</td>
<td></td>
</tr>
<tr>
<td>AF mode is set to one shot</td>
<td></td>
</tr>
<tr>
<td><strong>Night Portrait Mode</strong></td>
<td></td>
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<tr>
<td>For shooting people in twilight, evening, or at night.</td>
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<tr>
<td>Use flash to illuminate the subject, while using slow shutter to record not-so-bright background</td>
<td></td>
</tr>
<tr>
<td>Ask the subject to keep as still as possible</td>
<td></td>
</tr>
<tr>
<td>Don’t use this mode to landscape photography at twilight.</td>
<td></td>
</tr>
<tr>
<td>Use a tripod for better results</td>
<td>Freezes the motion. Used to photograph fast-moving objects</td>
</tr>
<tr>
<td>Use fastest possible shutter speed, provided there is a correct exposure</td>
<td></td>
</tr>
<tr>
<td>Camera will track the subject, while continuous shooting is enabled (AI SERVO)</td>
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