Photography 2/3/Portfolio Study Guide

Ask yourself: What is more important to me, showing motion or showing DOF

- If motion is important, then you will change the shutter speed (put camera on M or TV/S)
- If DOF is important, then you will change the aperture (put camera on M or Av/A)

- Use a fast shutter to freeze motion
  - If on M, then pick aperture to get correct exposure
  - If on TV/S, then the camera will pick the aperture to get correct exposure

- Use a slow shutter to blur motion
  - If on M, then pick aperture to get correct exposure
  - If on TV/S, then the camera will pick the aperture to get correct exposure

- Use a bigger aperture for shallow DOF
  - If on M, then pick shutter speed to get correct exposure
  - If on Av/A, then the camera will pick the shutter speed to get correct exposure

- Use a smaller aperture for greater DOF
  - If on M, then pick shutter speed to get correct exposure
  - If on Av/A, then the camera will pick the shutter speed to get correct exposure

Manual Mode Where Do I Start?

1. Set your ISO (sensor speed)
   - Set your ISO to:
     100 = Strong
     200 = Nearly Sunny
     400 = Getting Dark
     800 = Very Dark Action
     1600 = Poor Lighting
     3200 = Dark (Graph N)

2. Set your Aperture (F/stop)
   - Set your F/stop to
     1.8 0.0 = Very Shiny Background (Shadow Depth of Field)
     2.0 0.0 = Dark of Shiny Background
     2.8 0.0 = The Middle of the Shiny, this makes your background just rich enough
     4.0 0.0 = Shadows
     Less or more (1.6 to 4.4) depending on your needs.

3. Set Shutter Speed (Fraction of time)
   - Use a tripod if you use slower shutter speeds (1 second to 1/10th of a second)
   - Use slower shutter speeds to blur action
   - The Faster Shutter Speeds to freeze action
   - ***50% of Time*** is shutter speed at a stop, of 1/400 for sharp photos

4. Watch Your Meter
   - Keep your meter at 0 for proper exposure
   - Put at +1 for brighter photos
   - Put at -1 for darker photos

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MAKE SENSE OF SHOOTING MODES

The mode you choose affects the amount of control you have over camera settings.

**Auto mode**
- Automatically selected by the camera. It typically gives the best balance of picture quality and convenience.

**Sports mode**
- Used for fast-moving subjects or when the focus must be on the action, such as sports or wildlife photography.

**Close-up mode**
- Used for close-up photography, such as macro shots or portraits. This mode is ideal for capturing fine details.

**Portrait mode**
- Used for portraits where the background is blurred, making the subject stand out.

**Landscape mode**
- Used for landscapes and nature photography. It allows you to capture the full beauty of the scenery.

**Child mode**
- Automatically adjusts the camera settings to produce good pictures of children.

**Manual mode**
- Used by experienced photographers who want complete control over the shutter speed and aperture.

**Aperture Priority**
- Used when you want to control the depth of field, such as in portrait photography.

**Shutter Priority**
- Used when you want to control the speed of the shutter, such as in action photography.

**Program AE mode**
- Allows you to set the aperture and shutter speed automatically, providing a balance of control and automation.

**Flash Off mode**
- Used when you want to disable the flash or when the flash is not available.

**Night Portrait mode**
- Used for portraits at night or in dark conditions. The camera automatically adjusts the settings to capture clear and detailed images.

**Landscape mode**
- Used for capturing landscapes and natural scenery. It allows you to capture the full beauty of the scenery.

**Close-up mode**
- Used for close-up photography, such as macro shots or portraits. This mode is ideal for capturing fine details.

**Sports mode**
- Used for fast-moving subjects or when the focus must be on the action, such as sports or wildlife photography.

**Night portrait mode**
- Combines flash with a slow shutter speed, perfect for capturing portraits at night or in low light.

**Flash off mode**
- Used when you want to disable the flash or when the flash is not available.

**Automatic depth of field**
- Used to ensure that key parts of the picture are sharp. This mode is often used in portrait photography.

**Movie mode**
- Used for recording movies. It allows you to capture smooth and steady footage.

**Program shift**
- Used to adjust the balance between aperture and shutter speed. It is useful when you need to manually adjust the exposure.

**Tv mode**
- Used for controlling the shutter speed manually, often used in action photography or to control motion blur.

**Av mode**
- Used for controlling the aperture manually, often used in portrait photography or to control depth of field.
TOTALLY RAD! QUICK REFERENCE GUIDE

MANUAL PHOTOGRAPHY

EXPOSURE
- Canon
  -3 -2 -1 +1 +2 +3
- Nikon
  3 2 1 0 1 2 3

APERTURE
- SHALLOW
- DEPTH OF FIELD
- DEEP
- F/14
- F/2.0
- F/2.8
- F/4.0
- F/5.6
- F/8.0
- F/16
- F/22

MORE LIGHT - BLURRY BACKGROUND

LESS LIGHT - SHARPER FOCUS

SHUTTER SPEEDS
- MORE LIGHT
- TRIPOD HIGHLY RECOMMENDED
- BLURRED MOTION
- HANDHELD - OK
- LESS LIGHT

ISO - FILM SPEED
- LESS NOISEY
- KINDA NOISEY
- VERY NOISEY
- EXTREMELY NOISEY
- 100
- 200
- 400
- 800
- 1600
- 3200
- 6400

LOW - BLURRED MOTION
- LIGHT SENSITIVITY
- SHARP ACTION - HIGH

NOW IT'S TIME TO TAKE YOUR PHOTOGRAPHY TO THE NEXT LEVEL.

GETTOTALLYRAD.COM

CREATIVE SOFTWARE. HAPPY PHOTOGRAPHERS.

GETTOTALLYRAD.COM | FACEBOOK.COM/GETTOTALLYRAD
<table>
<thead>
<tr>
<th>Shutter</th>
<th>Aperture</th>
<th>ISO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4000</td>
<td>f22</td>
<td>100</td>
</tr>
<tr>
<td>1/2000</td>
<td>f16</td>
<td>200</td>
</tr>
<tr>
<td>1/1000</td>
<td>f11</td>
<td>400</td>
</tr>
<tr>
<td>1/500</td>
<td>f8</td>
<td>500</td>
</tr>
<tr>
<td>1/250</td>
<td>f6.6</td>
<td>640</td>
</tr>
<tr>
<td>1/125</td>
<td>f4</td>
<td>800</td>
</tr>
<tr>
<td>1/60</td>
<td>f2.8</td>
<td>1250</td>
</tr>
<tr>
<td>1/30</td>
<td>f2</td>
<td>1600</td>
</tr>
<tr>
<td>1/15</td>
<td>f1.4</td>
<td></td>
</tr>
<tr>
<td>1/8</td>
<td>f1</td>
<td></td>
</tr>
</tbody>
</table>

- **Darker**
  - Less motion blur
  - Background sharp
  - Less grainy

- **Lighter**
  - More motion blur
  - Background blurry
  - More grainy
**SHUTTER SPEED**

How fast your camera’s shutter opens and closes to expose the sensor. The longer the shutter is open the more light is exposed to the sensor and visa-versa.

<table>
<thead>
<tr>
<th>Shutter Speed</th>
<th>Typically Used For</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4000 sec</td>
<td>freezing super fast objects</td>
</tr>
<tr>
<td>1/2000 sec</td>
<td>freezing cars driving fast</td>
</tr>
<tr>
<td>1/1000 sec</td>
<td>sports photography</td>
</tr>
<tr>
<td>1/500 sec</td>
<td>slow moving sports (soccer, basketball, etc)</td>
</tr>
<tr>
<td>1/250 sec</td>
<td>photographing kids</td>
</tr>
<tr>
<td>1/125 sec</td>
<td>standard photos</td>
</tr>
<tr>
<td>1/60 sec</td>
<td>slowest handheld shot</td>
</tr>
<tr>
<td>1/30 sec</td>
<td>when panning sports/cars</td>
</tr>
<tr>
<td>1/15 sec</td>
<td>blur objects in motion</td>
</tr>
<tr>
<td>1/8 sec</td>
<td>blur fast moving water</td>
</tr>
<tr>
<td>1/4 sec</td>
<td>panning people walking</td>
</tr>
<tr>
<td>1/2 sec</td>
<td>blur slow moving water</td>
</tr>
<tr>
<td>1 sec or slower</td>
<td>very long exposure</td>
</tr>
</tbody>
</table>
Aperture is too big.
Parts of the subject are out of focus.

Aperture is smaller.
Subject is in focus and background is out of focus.

Aperture is too small.
Everything is in focus.
Focus Distance

Depth of field range

F1.4

F5.6

F22

Depth of field range
Three ways to affect depth of field

How aperture, focus distance and focal length affect what will appear sharp

**Changing the aperture**
The wider the aperture you use, the less depth of field that you capture. This isn’t always a disadvantage, as it allows you to throw distracting elements out of focus.

- Aperture: f/8, focused at 20m with a zoom setting of 70mm
- Aperture: f/22, focused at 30m with a zoom setting of 30mm

**Changing the focus distance**
The closer you are to the subject you’re focusing on, the less depth of field you will capture on camera.

- Lens focused on subject at 20m
  Camera set to an aperture of f/8 with a lens setting of 70mm

**Changing the focal length**
The zoom setting, or lens, that you use effects how much of the image looks sharp. The wider the lens (the shorter the focal length), the more depth of field you capture.

- Focal length: 28mm, focused at 20m with aperture set at f/8
- Focal length: 70mm, focused at 30m with aperture wide f/8
- Focal length: 200mm, focused at 30m with aperture set at f/8

Telesphoto effect: the more you zoom in on your subjects, the less depth of field you will capture on camera.
<table>
<thead>
<tr>
<th>ISO</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Full Sun, no shade</td>
</tr>
<tr>
<td>200</td>
<td>Lots of sun, could be in partial shade or an overcast day out in the open</td>
</tr>
<tr>
<td>200</td>
<td>Inside on a sunny day, directly by a large window</td>
</tr>
<tr>
<td>400</td>
<td>In the shade on a sunny day or under a covered area on an overcast day</td>
</tr>
<tr>
<td>700</td>
<td>Inside on a sunny or overcast day (near a window)</td>
</tr>
<tr>
<td>640-800</td>
<td>Sun is starting to set and less light</td>
</tr>
<tr>
<td>800</td>
<td>Inside, quite a distance from a window (sunny outside)</td>
</tr>
<tr>
<td>850-1000</td>
<td>Inside, quite a distance from a window (overcast day)</td>
</tr>
<tr>
<td>1250</td>
<td>Inside during the evening, light bulbs are the only source of light</td>
</tr>
<tr>
<td>1600</td>
<td>Inside a dark room where there is a light source (theatre, school production, etc)</td>
</tr>
</tbody>
</table>
The light sensitivity of either the film or sensor in a camera. They can range from as low as 12 to as high as 12500. With increased ISO there is increased noise or grain in a photo, so for higher quality photos stick to the lowest possible ISO setting. In digital captures, this noise leads to larger file sizes, so you are able to take less photos per memory card. ISO also increases with the length of the exposure, but in film the grain is predetermined by grain existing on the emulsion, the light sensitive coating on the film.

Use these in bright natural light or to allow for slow shutter speeds.

50

*100

200

Use these in flashless indoor lighting or in combination with the flash.

*400

*800

1600

Use these in dark lighting, mainly to avoid camera shake or freeze motion.

3200

6400

12500

*Each ISO shown is in whole stop increments, but one-third stops exist on some cameras.

*An ISO of 100 is the most common lowest setting available on most cameras. It is most useful for landscape photography, brightly lit situations, and long exposures.

*An ISO of 400 is a good no flash indoor lighting setting, it will be just enough to freeze most motion and will help avoid camera shake - especially coupled with a larger aperture.

*An ISO of 800 is ideal for combined use with flash. Higher ISOs also capture more ambient light and increase depth in dark lighting. This is combined with a flash to balance out foreground and background light - particularly with a back-lit subject.
Wide-angle to telephoto

Understand the difference between focal lengths, from 10mm to 400mm

Your lens focal length affects the angle of view you can see through your camera’s viewfinder. To really see the difference focal length can make to the angle of view, it’s good to compare a sequence of shots of the same subject taken at different focal lengths. See our examples for how much or how little of the scene you can capture in your frame, depending on your effective focal length (EFL).

125mm (EFL: 200mm)

200mm (EFL: 320mm)

55mm (EFL: 90mm)

18mm (EFL: 28mm)

Effective Focal Length (EFL)

Your lens projects a magnified, scaled-down image of your subject. Thanks to your lens’s focal length, the image then looks the right way up in the viewfinder.

www.digitalcameraworld.com
-1 -1 -1 -1 -1 -1 +2

correctly exposed meter

-1 -1 -1 -1 -1 -1 +2

under exposed meter

-1 -1 -1 -1 -1 -1 +2

over-exposed meter
EXPLAINED COLOUR TEMPERATURE SCALE

The colour temperature range of your camera depends on the white balance setting used. The measurements on the left are in degrees Kelvin...

<table>
<thead>
<tr>
<th>Temperature (K)</th>
<th>Description</th>
<th>AWB</th>
<th>Presets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000K</td>
<td>Candle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,000K</td>
<td>Sunrise or sunset</td>
<td></td>
<td>Tungsten 3,200K</td>
</tr>
<tr>
<td>3,000K</td>
<td>Tungsten</td>
<td></td>
<td>White fluorescent 4,000K</td>
</tr>
<tr>
<td>4,000K</td>
<td>Photo/flood</td>
<td></td>
<td>Daylight 5,300K</td>
</tr>
<tr>
<td>5,000K</td>
<td>Flash</td>
<td></td>
<td>Flash 5,000K</td>
</tr>
<tr>
<td>6,000K</td>
<td>Average midday sunlight</td>
<td></td>
<td>Cloudy 6,000K</td>
</tr>
<tr>
<td>7,000K</td>
<td>Overcast sky</td>
<td></td>
<td>Shady 7,000K</td>
</tr>
<tr>
<td>8,000K</td>
<td>Hazy sky</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9,000K</td>
<td>Clear blue sky</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10,000K</td>
<td>The light reflected by the atmosphere, known as skylight, is blue in colour</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Auto White Balance (AWB) only operates accurately in a restricted range of colour temperatures.
WHY YOU SHOULD TAKE PHOTOS IN RAW

PHOTOGRAPHERS SETS
EXPOSURE SETTING &
PRESSES THE SHUTTER
BUTTON

- Cameras capture light
- Camera might apply an algorithm
- Digital gain is applied
- Camera clips image data to black point
- Camera might apply noise reduction

- Camera applies white balance
- Camera applies sharpening
- Camera applies colour saturation
- Camera applies a colour space
- Camera applies contrast settings
- Camera reduces bit depth of image from 12 to 8 bit.

Camera compresses file

CAMERA SAVES RAW FILE
CAMERA SAVES TIFF FILE
CAMERA SAVES JPG FILE

LEGEND
- Blue: Non destructive action
- Brown: Positive destructive action
- Red: Negative destructive action


[Graphical interface for image editing with options for treatment, color, and grayscale.]

- WB: Daylight
- Temp: 5500
- Tint: +10
- Tone: Auto
- Exposure: 0.00
- Recovery: 0
- Fill Light: 0
- Blacks: 5
- Brightness: +30
- Contrast: +25
PHOTOSHOP SHORTCUTS

Hello, here are the most useful Photoshop keyboard shortcuts I know. Hope it helps...

m = marquee
l = lasso
c = crop
j = spot healing brush
s = clone stamp
e = eraser
r = blur
p = pen
a = direct selection
n = notes
h = hand
d = make colours default (b/w)

v = pointer
w = magic wand
k = slice
b = brush
y = history brush
g = gradient
o = dodge
t = type
u = rectangle
i = eye dropper
z = zoom
x = switch between colours
f = change screen mode

ESSENTIALS

% n = new document
% o = open document
% w = close document
shift % s = save as
% q = quit
% p = print
% c = copy
% x = cut
% v = paste
% z = undo
option % z = multiple undo

% a = select all
% d = deselect
% i = inverse selection
spacebar + click = hand tool
% t = transform tool
% r = show/hide rulers
% ; = show/hide guides
% ] = make brush larger
% [ = make brush smaller
	tab = show/hide all tool pallets
% tab = change application
% 0 = document full magnification
% + = zoom in
option % spacebar + click = zoom out
% - = zoom out

d-konstruct.blogspot.com
EXPLAINED HOW TO READ A HISTOGRAM

A camera’s histogram is an accurate guide to exposure, as it illustrates the range of tones, or brightness levels, present in an image. You should review the histogram each time you take a picture, so that you can assess if you need to make any exposure adjustments.

The horizontal axis of the graph represents the brightness level, from darkest on the left to brightest on the right. The vertical axis shows how many pixels in the picture are at that brightness level.

The histogram’s size and shape gives you an instant guide to the contrast level of this scene. This image contains a full range of tones, including slightly clipped shadows (on the left of the shot) and burnt-out highlights (on the windows).
What is exposure:
- overexposed=
- underexposed=
- correct exposure=

Shutter speed
- visual effect fast shutter= - numbers of fast exposure=
- visual effect slow shutter= - numbers of slow shutter

How to be able to achieve faster shutter speeds=

Aperture
- visual effect large aperture= - numbers of large aperture=
- visual effect small aperture= - numbers of small aperture=
- what else can affect the depth of field

ISO
Low iso pro= Low iso con=
High iso pro= High iso con=

Focal Length
Lower number lens= High number lens=

Metering modes
Evaluative/matrix= Center weighted= Spot=
Reading a light meter=

Choosing a focal point=

White Balance (color temperature)
Lower numbers= higher numbers=
Daylight is=

Why Raw=

Photoshop Shortcuts
-copy= -paste= undo= inverse= brushsize= zoom= transform= save= Select all= deselect= make a flattened layer=

How to read a histogram
Left= middle= right=