

Intro to Digital Photography Level 2 – Week One: Colour, MetaData

Instructor: Roger Buchanan

Class notes are available online at www.thenerdworks.com

Course Outline:

Week 1 – Colour and MetaData with Activities, homework;

Week 2 – Focus and Exposure Modes with Activities, homework;

Week 3 – Various Capture techniques, Image Archiving, Printing direct from camera, REVIEW.

Survey: Expectations and Requests for Course???

With each step in the process of photography we lose detail from our subject...

Scene  Camera  Computer  Printer

Quick Discussion Regarding “Accessories” – get the photo right in the camera first!

Using the appropriate accessory to capture your images allows for each capture to obtain the desired qualities that you envisioned for that image. Doing it this way saves you from have to “Edit” the effect into images individually. This in turn saves you time, **and will provide more high quality images.**

- Polarizing Filter (See Demo Photos): helps reduce glare and Saturates your colours;
- External Flash or Reflector: Add light to a scene, or redirect existing light into a scene;

Discuss: Colour

- Set Resolution to “Large” and Detail to “Superfine”. (Why you need more memory cards!)
- Colour Space refers to the palette of available colours that can be produced. The colour space of choice is Adobe RGB (98), to be used in both the Camera **and the Computer Software.**
- *Camera = Adobe RGB (98), Software = Adobe RGB (98), but your Printer uses = CMYK*

Additive:	Red	Green	Blue	
Subtractive:	Cyan	Magenta	Yellow	Black

- Remove colour cast: add the colour directly opposite; (i.e. Red removed by adding Cyan)
- Make a colour: mix the two colours NOT directly opposite it (i.e. Cyan = Green + Blue)
- In your composition find the major lines of: Colour, Shape and Contrast.

ACTIVITIES: 1) Resolution, 2) Colour Space and 3) Custom White Balance

- 1) Set Resolution to LARGE and Detail to SUPERFINE;
- 2) Set Colour Space to Adobe RGB (98), Point and Shoots will use “sRGB”;
- 3) Taking pictures with regular White Balance, then with Custom White Balance setting.

NOTE: Mixed Lighting sources require using a Custom White Balance – which requires taking a photo of a target that’s white, or 18% Gray, and neutral. Sometimes Manual Focus is required to capture an image as **autofocus does not work well on uniformly coloured scenes** like a Grey Card.

INSTRUCTIONS: (The order of instructions may vary by camera model/manufacture)

1. Take a picture of a Grey card;
2. Go to MENU and choose “Custom WB”;
3. Choose “SET” for the image of the Grey card and close the MENU;
4. IF NEEDED, go to White Balance and set the Camera to the Custom White Balance setting;
5. Take photo using the new custom white balance.

ACTIVITY: Viewfinder Cropping of Scene

The instructor will describe how to take a photograph of a “cropping target” to determine the amount of the scene you see in your viewfinder/LCD vs. the amount that the camera actually captures.

Discuss: MetaData

MetaData is information about the photo. **EXIF** metadata contains **camera settings** info that is recorded with each photo you take, **IPTC** metadata is the **personal info** that you add to the photo once it is on your computer. (NOTE: IPTC metadata can be added at the time of importing the images from the memory card as well as during any phase of processing the images.)

MetaData can be viewed with:

- “Browsers” (like “My Computer”) that read the MetaData directly from each file, or;
- “Cataloging” software (like Photoshop Elements “Organizer”) that creates a database of image MetaData (called a “catalog”) once the images are stored on the computer.

Cataloguing software has the advantage in that MetaData organized in a database can be searched or organized **very easily, in many ways**...Browsers only show the MetaData for the single selected photo.

ACTIVITY: MetaData, “The Blinkies” & Auto Exposure Bracketing

1. What types of MetaData can you review on your LCD? (check all that apply)

<input type="checkbox"/> Capture Mode?	<input type="checkbox"/> File Number?	<input type="checkbox"/> Battery?
<input type="checkbox"/> Shutter Speed?	<input type="checkbox"/> Aperture?	<input type="checkbox"/> ISO?
<input type="checkbox"/> Resolution/Detail?	<input type="checkbox"/> Flash setting?	<input type="checkbox"/> Exposure Compensation?
<input type="checkbox"/> Histogram?	<input type="checkbox"/> White Balance?	<input type="checkbox"/> Date/Time?
<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____
2. Turn on “The Blinkies” for Highlight/Shadow warnings. (This is often called “Highlight Warning” or “Tone Protection” depending on camera model)
3. Auto Exposure Bracketing (AEB) – this causes your camera to take 3 exposures, each with a different brightness value. (Use this as a “just in case” way to ensure you capture a good exposure)



Homework: Take a photo using AEB to get three different exposures of one image.

Samples of the use of a Polarizing Filter to reduce glare.



NON-polarized photo of window : 1/100sec @ f/3.5 ISO 100



Polarized photo of same window: 1/80 sec @ f/3.5 ISO 100



NON-polarized photo of statue: 1/320 sec @ f/3.5 ISO 100









Polarized photo of statue: 1/320 sec @ f/3.5 ISO 100

NOTE: The effectiveness of a polarizing filter is greatly affected by the angle of the lens to the source of light, in this case the sun. Generally speaking a lens taking a photo at a right angle to the sun will produce the strongest polarizing effect to reduce glare.

White Balance Colour Settings

Our eyes adjust to the colour of light shining on a subject, the camera needs to be told the type of light.

	
<p>Auto</p>	<p>Daylight</p>
	
<p>Cloudy</p>	<p>Shade</p>
	
<p>Tungsten</p>	<p>Fluorescent</p>
	<p>TIP: Regarding AWB (Auto White Balance) AWB “calculates” what it thinks is the correct White Balance each time you take a photograph. When taking many pictures *of the same subject* AWB may calculate White Balance differently between shots, thereby altering the colour of your subject slightly. So use a *specific* WB instead!</p>
<p>Flash</p>	

What Makes a Digital Photograph






Image

**EXIF: Make & Model
Date & Time
Camera Settings
GPS info
etc...**

**IPTC: Name
Copyright
Contact Info
Address
Keywords
Rating**

MetaData

Homework: Week 1 Auto Exposure Bracketing

	 A photograph of a modern building with a stone base and a large window. The image is underexposed, with a dark sky and a visible moon. The building's details are less clear due to the low light.		-2 EV
	 A photograph of the same building, correctly exposed. The sky is a uniform grey, and the building's details are clearly visible. The moon is still present in the sky.		0 EV
	 A photograph of the same building, overexposed. The sky is bright white, and the building's details are washed out. The moon is no longer visible.		+2 EV

Intro to Digital Photo Level 2 – Week Two: Focus and Exposure

Instructor: Roger Buchanan

Notes are available at: www.thenerdworks.com

Homework: Photos with Exposure Compensation.

Focusing modes examined – Diopter Adjustment, Auto-Focus Points, Auto-Focus Modes, and Manual Focus.

A) Diopter Adjustment: On “Optical Viewfinders” there is an adjustment for the focus of the viewfinder itself. Usually beside the viewfinder window is a little dial that allows you to “Focus” the display in the viewfinder. To set it correctly focus the lens, and then adjust the Diopter to focus the Viewfinder.



B) Auto Focus

1. Auto Focus Point/s – Choose group points, or single point Auto Focus;
2. Single Focus – One time focus per press of shutter.
3. Continual/Servo Auto Focus – Keeps focusing while the shutter is depressed (for subjects moving away from, or towards, the camera).

C) Manual Focusing Mode – useful for close-up, low-light & low-contrast scenes.

Table for Depth of Focus relates to sharpness of background

To Increase Depth of Focus	To Decrease Depth of Focus
Larger f/stop (i.e. f/22) Landscape Scene	Smaller f/stop (i.e. f/2.8) Portrait Scene
Wide Angle (less zoom)	Telephoto (more zoom)
Move away from subject	Move towards subject

Manual Exposure Modes examined These activities will take some time, so have patience.

Program Mode (P) – the standard “walking about camera mode”, you have control of **both** Aperture and Shutter Speed, changing one causes the camera to adjust the other.

Aperture Priority (Av), or various scene modes, to shoot examples of differing Depth of Focus. You set the aperture you desire and the camera meters the scene and sets the shutter speed. Cameras that do not have aperture priority must use different “Scene Modes” to adjust the size of the aperture.

Depth of Focus ACTIVITES: (use the cards provided, ISO 1600, Aperture Priority Mode)

Set up the cards on a table as shown by the instructor. DSLR cameras will be in Aperture Priority for this activity, and Compact Camera’s without Aperture Priority will have to use various “Scene Modes”. (i.e. “Portrait” vs. “Landscape” vs. “Fireworks” vs. “Sports” modes, etc.)

1. **Aperture Effect:** Use at least 4 different Aperture settings to take shots from the same distance;
2. **Distance Effect:** With a medium zoom setting take a picture from a close, medium and far distance;
3. **Zoom Effect:** From a medium distance take a photo with zoom set to, wide, medium & telephoto.

Shutter Priority (Tv) for Action Shots or slow motion shots. You set the desired shutter speed, and the camera meters the scene and sets the appropriate shutter speed.

Use Shutter Priority Mode (shown as either “S” or “Tv” and ISO 100)

Activity	dSLR/ILC Camera settings	Compact Camera settings
Light Trails:	Flash OFF. Shutter Speed 3 seconds, ISO 100	Fireworks or Landscape
Zoom Burst:	same as above	Fireworks or Landscape(if zoom doesn't work then walk quickly to the light as you make the photo)
Panning Stretch:	same as above	Fireworks or Landscape
Paint with Light:	same as above	Fireworks or Landscape

Manual Mode (M) for low light, continuous exposure or for tricky focusing scenes. You are required to set **BOTH** aperture and shutter speed for the appropriate exposure.

Homework:

You will be **making** two different pictures, yet each will use Depth of Focus to emphasize the subject:

- 1) Isolate your subject** from the background **using shallow depth of focus;**
- 2) Put your subject in context** by showing the foreground/background detail **using large depth of focus.**

HINT: **Table for Depth of Focus** will be helpful...

Bring one print of each subject photo to class next week to demo your work.

Intro to Digital Photography Level 2 – Week Three

Review of Homework! Prints anyone?? Depth of Field Photos

www.thenerdworks.com

Ultimate Camera Stability = Tripod + (Self-timer or Remote Cable release or Wireless Trigger)

Hand Held Camera Sharp Capture Tip: To get a nice sharp image set your shutter speed to equal 1/1.5 times your focal length, or 1/90th of a second, **whichever is faster**. In other words, if you are using 200mm focal length, then:

Shutter speed =	$\frac{1}{(1.5 \times \text{Focal Length mm})}$	Example \Rightarrow	$\frac{1}{(1.5 \times 200\text{mm})}$	= 1/300 th sec
			(Slowest sharp speed)	

Activity: Hand held stability using “**The Steady Strap™**” (works **GREAT** with still photography or video!)

Archiving/Backup your images: (DISCUSSION): 3 copies of each image, 2 media types, 1 copy stored off-site.

Storage (Type, Capacity, Speed, Connection type),	Technological/Format Obsolescence	Sharpie Markers (?),
Distribution and/or Display	Archiving Prints from Digital Images	Image Recovery Software

Printing Direct from Camera:

- Direct Print Order File (D.P.O.F.) – **Activity** (Make a “To Be Printed List” & store it on your memory card)
- USB Direct Connection: PC or PictBridge (NOT Recommended because of tiny cable connection!)
- Direct Via Memory Card – **Activity** Canon Selphy demonstration (free prints while supplies last)

Viewing Images on TV: Activity (Video Out) Set in your camera menu, usually near “Date/Time” settings...

- NTSC - National Television System Committee: United States, Canada, and many countries in both North and South America, as well as many Asian countries including Japan.

Digital Photography Books of Interest

I get most of my books online, with an iRewards membership, at www.chapters.indigo.ca where I save about 34% versus buying in the store. Most of these titles I was already familiar with, so buying online wasn’t really “sight unseen”. If you spend enough (about \$35) the shipping is free. I’ve been very satisfied with my orders done this way.

Exposure Photo Workshop: Develop Your Digital Photography Talent by Jeff Wignall. ISBN - 13:9780470114353

Lighting Photo Workshop by Chris Bucher ISBN - 13:9780470114339

Digital Photography for Next to Nothing: FREE/Low Cost Hardware and Software John Lewell ISBN - 13:9780470687260

Pro Digital Photographer's Handbook by Michael Freeman ISBN - 13:9781579906320

Getting Started with Camera Raw, 2nd Ed by Ben Long ISBN - 13:9780321592132

The Adobe Photoshop Elements 14 Book for Digital Photographers by Kelby ISBN - 13: 9780134290898

The Digital Print: Preparing Images In Lightroom And Photoshop For Printing by Jeff Schewe ISBN - 13: 9780321908452

Websites of interest for Digital Photography:

- www.strobist.com An excellent site for information on using Flash
- www.dpreview.com A great “all – around” photography site. Good product reviews!
- www.cambridgeincolour.com Excellent source of basic digital photography tutorials.
- www.wilhelm-research.com This site is specific to printing insight into “Archival Prints” longevity standards.
- www.luminous-landscape.com Another excellent site for photographic enlightenment. For the curious mind!
- www.thisweekinphoto.com Good photography basics and the source of TWiP podcast!

REVIEW:

<p><u>Week One</u></p> <p>Discuss: Colour</p> <ul style="list-style-type: none"> • Resolution/Detail settings; • Colour Spaces (sRGB/Adobe RGB) • Profiles for printers. • Custom White Balance for mixed lighting! <p>Discuss: MetaDATA</p> <ul style="list-style-type: none"> • EXIF = camera settings; • IPTC = personal info added; • MetaDATA can be viewed in a number of ways. • “Browsing software” shows info image by image. • “Cataloging software” makes a database of info from images, and is much faster, and more versatile. <p>(The Histogram provides your exposure info as a visual graph of pixel values from dark to light, left to right.)</p>	<p><u>Week Two</u></p> <p>Focusing modes examined :</p> <p>Auto (Focal Points, Servo, Single) Manual</p> <p>Exposure Modes examined:</p> <p>Program; Aperture Priority (Av); Shutter Priority (Tv); Manual;</p> <p>Depth of field changes with adjusting: f/stop, focal length, distance to subject.</p> <table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <tr> <td style="padding: 2px;">D of F and</td> <td style="padding: 2px;">More</td> <td style="padding: 2px;">Less</td> </tr> <tr> <td style="padding: 2px;">f/stop</td> <td style="padding: 2px;">f/22</td> <td style="padding: 2px;">f/2.8</td> </tr> <tr> <td style="padding: 2px;">Focal length</td> <td style="padding: 2px;">Wide Angle</td> <td style="padding: 2px;">Telephoto</td> </tr> <tr> <td style="padding: 2px;">Distance to Subject</td> <td style="padding: 2px;">Far</td> <td style="padding: 2px;">Close</td> </tr> <tr> <td style="padding: 2px;">Print Size</td> <td style="padding: 2px;">Small</td> <td style="padding: 2px;">Large</td> </tr> </table>	D of F and	More	Less	f/stop	f/22	f/2.8	Focal length	Wide Angle	Telephoto	Distance to Subject	Far	Close	Print Size	Small	Large	<p><u>Week Three</u></p> <p>Ultimate Image Capture Tips Archive, Print or View Images Podcasts for Photos/Printing are available on iTunes. Book list.</p> <p>More Websites: !!!</p> <p>photosecrets.com tv.adobe.com luminous-landscape.com</p>
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Please visit www.thenerdworks.com for copies of your notes, and other course availability.

Email your questions to roger@thenerdworks.com (please remember to tell me which class you were in.)

Thank you for attending Intro to Digital Photography: Level 2.

“Have fun **making** your images!” – Roger B.

3,2,1...Backup strategy

3 Copies of every photograph



2 different types of storage media

(Prevents loss from obsolescence of technology)



1 set photos at different location

