"Improve Your Image"
Mastering the Art of Digital Photography

A Multimedia and Hands-on Based Workshop.....

Class Presented by: SierraTech NET

Class Syllabus

2-Session Course:

Dates: *See Website*

Location: North Tahoe Community Church Ministry Center
917 Tahoe Blvd., Suite 104 Incline Village

Time: 10:00 AM to 2:00 PM (Lab Begins at 2:00 PM and ends 3:00 PM)

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SierraTech

Digital Photography Class '2-Session' Syllabus

1.0   Digital Photography Training Course Outline

SierraTech LLC presents; "*Mastering the Art of Digital Photography*" a multimedia course dedicated in the understanding of, "How to Use Digital Cameras" and "How to organize and Share Digital your Photographs". Workshop is based on two "Four Hour" sessions (plus an optional 1-Hour "Hands-on" lab is provided after each workshop to students who attend session lecture, at no additional charge). The workshop structure and topics cover concepts necessary to provide students with a working knowledge of Camera functions and how to make application of their camera's many features. Just as import in the understanding principles of using cameras, is how to organize, output, and share photographs. Below is a brief breakdown how the course is structured:

- Present two; four (4) hour course "*Mastering the Art of Digital Photography*".
- Optional one (1) hour "Hands-on" lab to assist students in the use of their cameras.
- Maximum class size = 15 students.
- Course is presented with the use of Multimedia (PowerPoint w/ Video Demonstrations)
- Course material such as handouts (to take notes) shall be provided by SierraTech LLC.
- No previous photography skills or camera ownership is required, the course demonstrates concepts.

2.0   Digital Photography Course Description

The course is structured to introduce photographic concepts of digital cameras and how they relate to film cameras. Concepts are introduced with the understanding student might not have any prior photography experience with film cameras (such as 35mm Single Lens Reflex – SLR Cameras), and therefore demonstrates principles upon which digital cameras are based. The student will acquire a working knowledge of how to use their digital camera in various lighting conditions, and how to organize and learn various techniques to share their images. Outlined below are the topics of the class and a brief description of what the student will learn on each subject presented:

3.0   SESSION – I: Mastering the Art of Digital Photography

The class begins with a multimedia presentation in a manner that introduces sample photographs used throughout Session I (one method of sharing photographs). The instructor will introduce himself and provide a brief background on his photography and digital photo editing experience. The introduction continues with the instructor requesting students to introduce themselves, their background, photographic experience, and identify what specific topics in Digital Photography they wish to explore and understand. This will assist the instructor where to emphasize a concept that is of specific interest.

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Training Services Since 1993

3.1 Camera Types

The class is structured for students looking to purchase a digital camera, or for the student who owns a camera but desires to increase their understanding in the application of various camera types. The topic presents different types of Digital Cameras (i.e. Point & Shoot vs. Digital Single Lens Reflex – DSLR), the advantages and disadvantages of each and what to look for.

3.2 Camera Quality

This topic describes the basic three elements that make up a Digital Camera's quality, and provides an introduction to understand Camera's maximum *resolution,* described by the number of Mega Pixels. Resolution is only one component contributing to the quality of the image a camera captures. The optics and camera's photo processor play a major role in a camera's ability to take great photographs. These concepts are explained (video and slide show), so the student understands the terminology they are faced with when purchasing or using a digital camera.

3.3 Camera Resolution Settings & Applications

This is a very important concept exploring how and when to set camera to "High Resolution" versus "Low Resolution" mode. The class explores how to change resolution and when to use various resolution settings depending on type of media photographs will ultimately be viewed on such as Computer or Television Screen versus Printing Photos.

3.4 Camera Auto Focus

Focusing is important step in capturing the image. The class explores the different Auto Focus techniques used by various camera manufactures to obtain a sharp image. Two different cameras are used to demonstrate "Light-Assist" versus "Passive" auto-focus techniques. Also the concept of Macro Focus is introduced for close up photography. Majority of cameras available have a "Macro Focus" setting to allow the camera to capture an image close-up, while maintaining sharp focus of the subject.

3.5 Exposure Control: Shutter Speed, Aperture (F-Stop), and Film Speed (ISO)

There are three different methods to control existing lighting (exempting flash) exposure, known as Exposure Value. The same principles used to expose film play an identical role in digital cameras. The photographer can adjust these settings to achieve creativity when capturing an image. The student will learn how to stop motion with fast moving subjects or freeze motion in sporting events. Understanding Exposure Control allows the photographer to selectively focus on a specific object, while other objects within the same photo are beyond focus. Film Speed dictates light sensitivity which also applies to digital cameras. The student will learn when to use higher film speeds (low light conditions) and the drawbacks to using higher ISO settings. Most important is how Shutter Speed an Aperture Setting relates to one another.

3.6 Camera Program Modes Descriptions

In the 1980s and 1990s only expensive 35mm cameras (such as Canon and Nikon SLRs) came with Exposure Compensation Mode processors. Today's digital cameras (including cameras sold under $100.00) all include Exposure Mode Presets. Shown below is a typical dial found on 95% of the digital cameras sold today:

This dial is the most misunderstood and underutilized feature of digital cameras. In the class we define each setting and how to use these settings to simplify taking great pictures. This dial controls the "Exposure Value" defined in the previous topic. This is one of the most important topics of the class, because it educates the student on how to change the camera settings based on subject, thus eliminating guesswork using camera's presets to take great pictures during sporting events, portraits, night time shots and more.

3.7   Using Zoom Effectively

One of the most abused features of cameras is the Zoom and "Digital Zoom". Zooming is used when attempting to capture an image of a subject at some distances from your camera, and the results in low light situations can be disastrous. There are rules that must be followed when using a zoom to obtain sharp images. The course demonstrates how to use a zoom properly and what to do in "Low Light" situations to increase the chance of capturing an image.

3.8   Using Flash

Another abused feature is the camera's built-in flash. One of the most frequently asked questions we receive from students is, "Why didn't my Flash picture not turn out, or why is image too dark?" We explore the limitations of flash, and what to expect when using flash. Digital Cameras also have "Flash" settings to eliminate or reduce "Red-Eye", which is explored.

3.9   Image Composition

Image Composition is just as important as the camera settings. You can capture an image under perfect lighting conditions, and yet the image does not excite the senses. Carefully composing an image can make the differences between a snapshot and a beautiful photograph. Image composition is based on a few simple rules which become second nature, once you understand the concepts introduced.

3.10 Record a Voice Memo (Camera Support Varies)

Many Point & Shoot cameras offer a feature that allows the photographer to record a voice memo, documenting the photograph on location. Most cameras are equipped with software that detects the digital audio associated with the photograph, and automatically links the image with the audio file. This is one of the most underused utility available on many cameras.

3.11 Using Digital Cameras to Document

Photo Documentation, is a great way to keep a visual record of a given subject. One of the many ideas explored is how the Construction Industry can use Digital Cameras to document phases of construction, and record location of plumbing and electrical infrastructure before drywall is hung. The class explores many different uses of digital cameras on how to best document various industries, or possessions for Insurance purposes.

4.0   Session-I Lab (1 Hour)

This is where students get the opportunity to explore the concepts presented if they own a camera. Students can practice with their own cameras using various settings, based on concepts introduced in Session-1. Each camera manufacturer implements features differently, and it is helpful if the student brings the camera manual with them if they choose to bring their camera to the class. The instructor is available to assist students in understanding specific details of their camera, or provide guidelines on how to research the camera documentation to find the answer.

5.0   Session II – Capturing and Sharing the Image

The second workshop is dedicated to organizing, viewing and sharing your photographs. Digital photography can be overwhelming with hundreds of photographs, and this session explores how to manage pictures, and how to organize them. In the Session we demonstrate how to connect a camera to a computer, transfer, organize and archive the hundreds or thousands of images taken with your digital camera. There are several software tools available simplifying the transfer and organization of photographs to the computer. Several of these tools provide methods to edit your photographs (i.e. cropping, remove red-eye and straightening crooked images), and simplify printing. Session II demonstrates Online Photo Services for uploading, organizing, sharing and ordering photographs (Note: Session I is a prerequisite for this session).

5.1   Session-I 'Concept' Review

Understanding camera Exposure Value can be confusing at first; the class begins with a review of these concepts, followed by a Question/Answer period to address camera owners who experimented with details presented in Session-1

5.2   How Was Picture Taken (Photographic Evaluation)?

This is considered by most as one of the most interesting part of the course. We study photographs which represent amazing results, and dissect how the image was achieved. A lot of the images reviewed were taken using "Point and Shoot" and DSLR cameras. The topics include "Auto Focus/Auto Exposure Lock", Lens Type, Exposure Value and compensation, along with the use of filters.

5.3   Camera Memory Types & JPEG Graphic Format

Most "Point & Shoot" Cameras are now standardizing on the Secure Digital (**SD**) Flash Memory Cards. There are other styles of memory cards used by various Manufactures presented but **SD** Flash Memory Cards is becoming the format of choice by majority of manufactures.

5.4   Camera Graphic Format

Majority of cameras store Images on the Flash Memory chip using JPEG (JPG) or RAW formats (RAW is an advanced topic not presented in detail). The JPEG graphic format is a compressed image and is discussed to give the student a better understanding of its use.

5.5   Displaying & Printing Photographs

One of the biggest complaints among digital photographers is they feel it is difficult to share images with others. Sharing digital images is much more diverse, with electronic Picture Frames, Printing your own photographs, displaying photographs on HDTV ordering prints online (using Flickr or COSTCO), or putting together photo CDs that most newer DVD players can play. If you have the time, you can create a PHOTO DVD, with animated stills and background music.

5.5.1   Reviewing Images "In-Camera"

Many of the newer cameras have a 3" LCD screen allowing you to preview your images immediately, giving you the opportunity to share or review images to judge the quality of the image captured.

5.5.2   Viewing Photographs on TV Monitors

In this section students are introduced to the various methodologies of viewing and presenting photographs.   Many of today's High Definition Monitors (TVs) provide card readers to facilitate displaying photographs directly from camera's memory chip. Many of the newer DVD players will also display JPEG images stored on CDs burned from a computer.

5.5.3 Using Photo Printers

Many Photo Printers on the market have built-in Card Readers, simplifying printing images directly from the Flash Memory Card, without a computer. To simplify the navigation of the images contained within the Flash Memory Card, several photo printers have an LCD screen to select and even crop the image before printing. Different qualities of Photo Papers are explored, to achieve the desired look of the printed image.

5.5.4 Connecting Camera to Printer Using PictBridge

Several Photo Printers can stand alone by supporting PictBridge, which provides a method to connect camera directly to Printer, and use the Camera's menu functions (and PictBridge drivers) to print and control color printer without a computer.

5.5.5 Print Images Using Software Application from your computer

The power of transferring your images to the computer will be introduced, and several techniques to achieve this is presented and demonstrated. If you have never connected your camera to your computer to transfer images, then the following topics will guide you through the process, and also show you the tools available to help you keep organized.

5.6   Methods of Transferring your Images to a Computer

This is where the real power of digital photography can be realized. If not done properly, this can also become very time consuming, so there are many tools available to simplify the task and help you keep a handle on your images.

5.6.1 Installing Camera on Computer (USB)

Camera owners, who have not connected their Cameras to a computer, are introduced to this procedure to simplify transferring images to a computer using USB (Universal Serial Bus 1.1 versus 2.0) connection. Windows XP, VISTA and MAC OS-X all have built in drivers to accept most digital cameras without installing software. A demonstration video is used to show a Windows XP computer detecting and installing USB drivers for a FUJI camera. Once this step is accomplished there are many free software tools available to help organize and catalog photographs. There are Pros and Cons in using dedicated Card readers (external or built into computer or monitor). Procedures are presented to reduce the possible corruption of images stored on a Flash Memory.

5.6.2 Cameras Supporting Wireless Network Transfers

Like many laptops, several cameras have been introduced to use wireless networks to upload photographs to your computer. NIKON and others support wireless methodologies to transfer images to your computer (even online services).

5.6.3 Where to Store Photographs on Computer

Most software tools and Windows operating systems expect to find images located in a special folder on your computer. Using this folder can save hours of time, when importing photographs from camera. Built in tools found in Windows Operating Systems, are demonstrated, for viewing, emailing and printing photographs. Since camera image sensors have increased in density (number of pixels) so has the size of the files stored on flash memory (chip). The workshop explores procedures in the backing up (archiving) these large files, by using external hard drives to store images, or use tools to make backup data CDs and DVDs.

5.7 Exploring Software to Organize and Edit Your Images

There are several methods to transfer images to a computer. Several computers and laptops come with a built-in Card Reader so the camera Chip can be inserted directly. The USB method is preferred so handling of the memory card is minimized thus reducing the chance of losing your photographs. There are several software packages available to assist in transferring, and organizing the hundreds of photographs that will ultimately reside on the computer (the workshop explores purchased packages, free software available to download, and utilities included with camera). Listed below are four methodologies presented to assist the student in organizing, displaying and printing their photos:

5.7.1 Using Windows Built-in Photo Tools

Windows XP and VISTA (along with MAC OS-X) operating systems contain powerful Photo Tools built into the operating system. These tools are explored and demonstrated in how to preview, manage and print without using third party software. VISTA comes with *Windows Photo Gallery*, which is a simple tool to manage photographs, and even construct panoramic layouts from several pictures.

5.7.2 Demonstration of Fuji's Software (Software Included with the Camera)

When you plug your USB camera into your computer, the software that came with your camera provides a tool to transfer your images to a target folder, and then keep a thumbnail catalog representing the images transferred by the tool. FUJI cameras provide a simple tool to capture and catalog your images, along with any voice memos you may have linked with your photographs. The software also provides some basic editing tools to enhance or correct exposure issues, and will be explored during the video demonstration.

5.7.3 Google Picasa (Free Photo Organization and Editing Software)

This is an easy to use software package to help the photographer to find and organize old photographs on computer, download new photographs, build a slideshows in 5 minutes (set to music unsynchronized if desired), and edit photographs to crop, enhance, fix Red-Eye and straighten images. It also has a powerful print manager to generate various sizes of photos without having to perform size editing. Picasa also provides tools to upload images online, and create backup CDs or DVDs to archive photos, and email your photos. Videos are used to demonstrate these features.

5.7.4 Hp Photosmart Essentials

HP has been manufacturing Photo Printers for years, and they provide a powerful tool that simplifies printing in various formats (i.e. Photo Books, Photo Calendars, and printing multiple images on a single page using various layouts). This software will catalog photos, provides simple editing tools and will transfer images from cameras. It will work with other printers besides HP, and its strength is in formatting printed projects based on several styles.

5.8 Introduction to Purchased Software Packages (Which one is right for you?)

There are several software tools available for purchase, to assist the photographer in making digital corrections to an image beyond what the free tools can provide. The student will learn about Adobe Photoshop and Photoshop Elements and which package is intended for his or her application, as we explore the mission of each package (and whether if Photoshop is even necessary). Adobe has been making photo editing software since Macintosh Computers began to use Color and became the choice for Photo Editing in the late 1980s and early 1990s. In early 1990s, Windows became a viable alternative to Apple's Macintosh as an easy to use platform for desktop publishing and Photo Editing. Current versions of Photoshop and Photoshop Elements have become mainstream terms in handling photographic editing.

5.8.1 Adobe Photoshop

With each new release of Adobe Photoshop the amount of time it takes to perform a sophisticated editing tasks, is reduced considerably. The full version of Photoshop has a steep learning curve, and there are courses organized just to teach Photoshop (SierraTech LLC provides private tutoring courses for Photoshop). Students will be introduced to some of Photoshop's amazing editing tools available to perform edit functions, which were not possible in the darkroom.

5.8.2 Adobe Photoshop Elements

 Photoshop Elements is a low cost photographic editor targeting management and transferring photographs from the camera to the computer. Adobe Photoshop Elements has the ability to transfer and catalog images from your camera (including videos and sound bytes used as Voice Memos. Adobe Photoshop elements has a quick editor feature to assist in fixing images easily and a full power editor similar to the professional Photoshop package. It also can be used to upload your images to "ONLINE" photograph sharing websites, reducing the number of tools needed to perform various tasks. The power of this package is demonstrated with a Video, along with real-time demonstration later in the class.

5.9 How to Share Photographs with Other Computer Users

This is probably the most requested subject asked by students during private tutoring sessions. There are many ways to share photographs, and many online services are available for free or a small cost.

5.10 Attaching Photographs to Email

A common mistake when attaching photographs to an email is not compressing the image first. When using Web Mail clients (i.e. Hotmail), there is no utility to shrink the image. Local email client programs usually give you the opportunity to compress the image (shrink) before sending as an attachment. Software can be used to compress and connect to your email server, reducing the image so the file size is reduced (speeds the sending and receiving process of an email) and can be view as a smaller image on the screen. If you have a local email program (i.e. Outlook), Windows XP, and VISTA can optionally compress the image for you, prior to attaching it to an email. Webmail clients are also available to interface with Windows, or Picasa email functions.

5.11 Sharing Photographs on the Internet

There are several online services available to store and share your photographs. The best system by far is FLICKR, and is used by many amateurs and Professionals to archive and feature their work. FLICKR is demonstrated live using the Internet. There are several amazing pictures publicly shared of picturesque locations such as Lake Tahoe. FLICKR provides tools to simplify the uploading a group of photos using Drag-N-Drop to send to your account. FLICKR offers free accounts (limiting the amount of data you can upload each month), or a PRO plan is available around $24.00 per month. Photographs can be organized in sets, and collections and permissions can be set keep images private or shared only amongst family, friends or available to public at large.

6.0 Class Evaluation

SierraTech values the feedback it receives from students, which has help shape the class to provide a better experience for future courses. We have implemented many suggestions that proved very valuable to the curriculum (i.e. the "HANDS-ON LAB). Upon completion of the course, we ask students to evaluate the class and provide feedback on what they feel would improve their experience.

7.0   Session – II: Lab (1 Hour)

This is where students get the opportunity to explore the concepts presented if they bring a camera and/or a laptop. Students can practice transferring images to their laptop assuming XP or VISTA contains or can find built-in USB drivers. Students can practice concepts introduced in Session-2. It is helpful if the student has downloaded and installed Picasa or the software package that came with the camera. The instructor is available to assist students in understanding specific details of their camera, or provide guidelines on how to research the camera documentation to find the answer.

8.0   Class Policy & Optional LAB (Personal Assistance)

During the lecture section of the course, it is SierraTech's policy not to allow students to bring out cameras to prevent disruption of class. This policy was adopted after receiving negative comments from students in previous course evaluations, who found lecture disrupted when individuals tested certain topics of interest on their cameras. Other classes commented the need for hands-on for better retention, which is how the majority of us learn. Each session consists of 4-Hour lecture, with the option of a 1-Hour Lab with no increase in tuition. The added Lab time is for Personal Instruction for those who own Cameras and wish to practice or need assistance. The lab provides personal instruction on your camera's use in application of session topics. The 15 Min Break can also be used for personal Camera Assistance as well. For Camera owners to grasp the concepts more completely, SierraTech recommends attending the 1-Hour Lab to the curriculum, due to the condensed nature of the class. The instructor provides after class support through email for further questions after a student has taken the course.

9.0   Student Prerequisites

This course has no prerequisite requirements and assumes the students range from no experience, to students who are advanced and comfortable with their cameras but desire to increase their knowledge of photographic principles to enhance creativity. All concepts are demonstrated, to assist the student in grasping the topic.

10.0 Instructor Qualifications

Robert Rappaport, founder of SierraTech in 1993, has been active in photography for over 35 years. Experience includes both Darkroom processing and special effects photography. Darkroom experience includes developing Black & White film and processing color film including Ektachrome slides. In 1994 SierraTech added photographic scanning and digital photographic editing (Photoshop) to our services, creating Technical Manuals for special equipment designed for Department of Energy and United States Air Force (USAF) government agencies. In the early 1990s, SierraTech created courses to train NASA, USAF and other Department of Defense agencies on the use of Digital Communication Systems located across the United States and in Germany.

11.0 Workshop Schedule and Price

This workshop is broken up into two 4-hour sessions (plus 1 hour after each class for "Hands-on" tutoring, available to the students who bring their cameras to the first session, or their cameras and laptops to the second session). Class starts 10:00 AM sharp, with a 15 minute break at 12:00 NOON. The lecture ends at 2:00 PM, and then the 1-hour lab commences.

The price for this two session Workshop is $249.00, and reservations must be made at least 4 days prior to Session-I date at: http://www.sierratech.org/photo-class.htm . SierraTech welcomes all students, who are looking to enhance their photographic skills, and a desire to bring structure to the digital image age. Let SierraTech "Improve Your Image"!