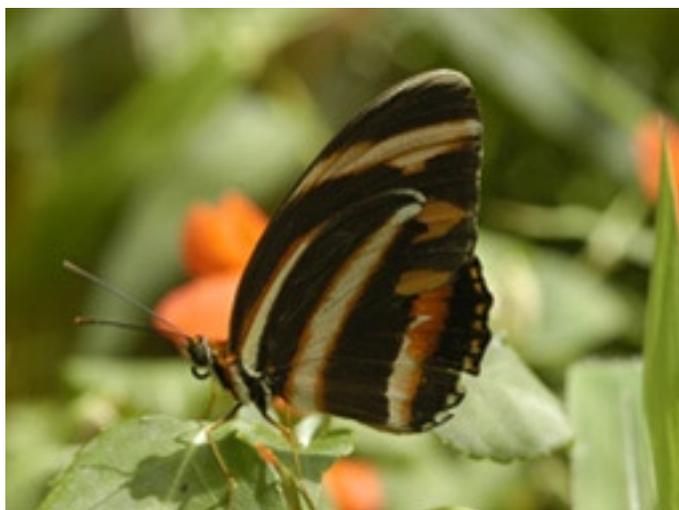


# Short Preview of Nicholas Hellmuth's Course Units on Digital Photography

DP 101: Achieving Quality in Digital Photography  
DP 201: Taking Digital Photography to the Next Level



**FLAAR**

Digital Imaging Resource Center



As you can see, FLAAR has experience with all sizes and shapes of digital cameras. Here Nicholas has an 8-megapixel Sony CyberShot F828, Nikon D100 (a Nikon D70 is in one of the shots too), medium format 22-megapixel Leaf Valeo, wireless large format 48-megapixel Betterlight on Cambo 4x5.

It is not required that you have any camera whatsoever. You can learn from our experience to suggest which next camera you might wish to consider. Since FLAAR does not sell cameras, we can be neutral, and honest, in recommending one camera over another.

If you aspire to do prize-winning nature photography with a digital camera, you can look forward to learning how to produce exhibit-quality results with any make or model of digital camera.



Photos by Nicholas Hellmuth, FLAAR, copyright 2004.

You will learn how to improve your portrait photography, how to accomplish nature photography, and in general how to expand into more kinds of photography, both commercial and as a hobby.



If you aspire to enter the world of fine art photography for giclee printing, then DP 101 is an ideal entry level course for you.



# **DP 101: Achieving Quality in Digital Photography**

## **Presented by Dr. Nicholas Hellmuth**

*Achieving Quality in Digital Photography* is an innovative online course taught by Dr. Nicholas Hellmuth, a leading expert on digital as well as traditional 35mm, medium format, and large format photography. It is the first of two courses in Dr. Hellmuth's online digital photography learning series.

Dr. Hellmuth has developed a customized textbook for the course with unique chapters covering the most important topics in digital photography. To help you become better acquainted with the topics that you will learn, the following document provides a brief summary of each chapter of the course textbook.

### **35mm Digital Cameras**

#### **Introduction to SLR 35mm Digital Cameras**

New digital cameras are produced so quickly, and all of them promise to be exceptional. Learn to distinguish the advertising hype from reality. (This section is updated after every major tradeshow before and during the run of the course to ensure that you receive the most recent information.)

#### **Comprehensive Glossary of Digital Photography Terms**

Although dozens of glossaries exist on the Internet, likely none are as comprehensive as this glossary from Dr. Hellmuth. Created and edited by technicians, students, and teachers, Dr. Hellmuth's glossary is only available to participants in this digital photography course. Learn the jargon that is essential to understanding digital photography.

#### **Aperture and Shutter Speed**

Without question, the two most fundamental components of photography are aperture and shutter speed. Learn what they are and how they can be used to improve your photographs.

#### **Megapixels: How many do you need?**

Megapixel has become a buzzword in digital photography. Learn how many megapixels you need to achieve professional results with your camera.

#### **Evaluation & Review of the Nikon D70 and D100**

Based on six months of extensive testing, this illustrated chapter compares the Nikon D70 and D100 with other major cameras in its class. Examine the pros and cons of each the Nikon and its competitors.

#### **Evaluation & Review of the Canon Digital Rebel**

The Digital Rebel is one of the most popular digital SLR cameras available because it appeals to both amateurs and professionals. Find out whether the Canon Digital Rebel deserves to be among the best-selling cameras in the world.

#### **Foveon Technology in Sigma SD9 and SD10 Cameras**

This chapter is based on the experiences of an actual photographer who used the Foveon triple-layer sensor in a Sigma SD9 camera on location for a full month. Experience a glimpse into, what many call, "the most innovative development of the digital millennium."

## **Comments on the New Olympus and Pentax 35mm SLR Digital Cameras**

Many popular SLR digital cameras use identical lenses and have virtually the same body structure; however, Olympus and Pentax have recently started producing digital cameras with interchangeable lenses. Learn the differences between interchangeable and non-interchangeable models, and find out why major manufactures such as Minolta took so long to develop a digital camera with interchangeable lenses.

## **Full-Frame 35mm Digital Sensors**

Despite years of poor reviews and failed prototypes, major manufactures such as Canon and Kodak continue to aggressively market full-frame sensors. Learn about what new developments are making full-frame technology usable, and how full-frame sensors are changing digital photography.

## **Professional Results from Budget-Priced Cameras**

An expensive SLR camera is not a necessity for capturing images. Learn to develop your “photographic vision” so that you can achieve professional results from a simple 3-5 megapixel camera with a simple zoom lens. (Case studies will include the Sony F717, Sony F828 and the Nikon CoolPix.)

## **Hybrid Digital Cameras**

Hybrid cameras, which allow you to use a 35mm lens with a medium format sensor, can achieve professional results. Find out whether your expensive 35mm lenses can still be useful to you.

## **The History of Digital Photography**

This concise history of digital photography includes a timeline that puts the development of digital into perspective. From humble beginnings with the birth of CCD sensors used for television, to Sinar’s recent 22 megapixel accomplishment, discover the exciting history of digital photography.

## **The Benefits and Drawbacks of Digital Photography**

### **Pros and Cons of Digital and Film Photography**

Understanding the pros and cons when of choosing digital or traditional photography is invaluable. Follow this straight-forward analysis of the positive and negative aspects of each.

### **CCD and CMOS Image Sensors**

The difference between CMOS and CCD is crucial because Canon uses CMOS and Nikon uses only CCD. From the “Bayer pattern” of RGB filtration in many sensors, to the characteristics of CMOS sensors, increase your understanding of the purpose and importance of image sensors.

## **Practical Aspects of Digital Photography**

### **Composition: The Key to Prizewinning Photography**

Composition with digital photography presents unique challenges. Learn how to develop visualization of your final image. Even if you are not already a natural talent we can teach you how to improve your photo imagery.

## **Nature Photography with Digital Cameras**

Capturing exotic tropical plants and beautiful wildlife often produces stunning images, but shooting nature with digital cameras can be problematic if you're not prepared. Learn practical tips to help you produce high-quality results.

## **Portrait Photography with 35mm SLR Digital Cameras**

Based on interviews with professional photographers who use digital cameras, discover the techniques you can use to capitalize on the vast markets for photographing children, families, graduates, events and more.

## **Architectural Photography with Digital Cameras**

Although Dr. Hellmuth has years of experience in photography, he majored in architectural science at Harvard. Learn from his first-hand experience about the lenses, cameras, and accessories that can be used to capture impressive architecture.

## **Digital Cameras for Sports and Action Photography**

Fast paced action requires cameras that have lightning fast responses and quick shutter speeds. Find out which digital cameras are best for shooting sports and motion.

## **QuickTime Virtual Reality**

QuickTime Virtual Reality (QTVR), and other software applications like it, can be used to create a 360 degree view of three-dimensional spaces. Learn how to shoot overlapping 35mm shots and digitally stitch the together to create QTVR images.

## **QuickTime Virtual Object Movies**

Frequently, you may want to photograph all sides of a three-dimensional object. Learn to build a cost-effective three dimensional turntable at home, and shoot your own rotating objects.

## **Shooting on Location with Digital Camera Equipment**

Choosing and transporting the appropriate equipment to shoot on location can be challenging. Learn how to prepare a portable studio and maximize your efficiency.

## **How to Organize an Exhibit of Your Own Photographs**

Displaying your photographs in a professionally presented exhibit is a great feeling. Learn how to exhibit your photographs so others can see your artistic photographic eye.

## **How to Get Your Photos Published**

An important step towards getting recognized as a professional (or advanced amateur) photographer is to have your work published. Find out who will publish your work, and how you can impress the editors.

## **How and Where to Enter Your Favorite Photos in Contests**

There are hundreds of popular photography contests. Many of them offer prestige, and prizes. Find out which contests are worth entering, and how you can win.

## Equipment for Digital Photography

### Computer Equipment for Digital Imaging

Decisions about computer hardware can have a profound effect on quality production. Find out what kinds of hardware specifications you should look for, learn the pros and cons of Macs and PCs, and understand the difference between CRT and LCD monitors.

### Camera and Computer Memory – Storing Digital Files

From CompactFlash to “memory sticks”, hard drives to RAID systems, Zip disks to DVD+ compared with DVD- (DVD plus versus DVD minus), this portion of the course provides comprehensive information about storing your digital images in a portable and stationary environment. Learn to make educated choices to increase your purchasing power.

### Lenses and Filters

It is important for all digital photographers to understand the realities of “digital lenses” and to know whether or not using traditional lenses on digital cameras is acceptable. Learn how to use lenses and filters properly and effectively with digital cameras.

### Lighting for Digital Photography

It is practically impossible to create powerful images without strong lighting. Learn how to set up lighting in a studio and how to use light effectively.

### Adobe Photoshop for Photographers

Because Photoshop is the worldwide standard for digital imaging, it is imperative that photographers know how to use Photoshop to improve their digital images. Learn the seven most important attributes of Photoshop related to photography.

### Additional Software

Many small, innovative companies have created software filters and add-ons that are more efficient than some Photoshop tools. Learn to identify the best of the non-Adobe products.

### File Formats for Digital Images

From “RAW” files straight from the camera, to TIFF files for printing, learn the characteristics of common file formats used in digital imaging.

## Reviews of Tradeshows and Publications

### Worthwhile Tradeshows for Digital Photographers

There are dozens of tradeshows each year that entice digital photographers. Find out which shows are worth attending.

### **Digital Cameras at the Photokina Tradeshow in Germany, 2004**

Photokina is one of the most prominent photography tradeshows in the world. Read about Dr. Hellmuth's encounters with the digital cameras that were on display in 2004.

### **New Photography Equipment at the PhotoPlus Tradeshow in New York, 2004**

At PhotoPlus, cameras, lenses, and lighting were on display. Learn what equipment caught the eye of Dr. Hellmuth, and may be worth purchasing.

### **FLAAR Book Reviews: Digital Photography**

Few books discuss professional digital photography with amateurs and professionals in mind. Based on Dr. Hellmuth's research, find out what books are worth you while.

### **FLAAR Reviews: Photo & Camera Magazines**

This chapter includes a comprehensive review of nearly every camera and photography magazine available for both traditional photography and for digital photography. Find out which magazines are essential for you to read and which are a waste of time (and why).

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If you have questions about DP 101: Achieving Quality in Digital Photography, send an e-mail to [digitalphoto@flaar.org](mailto:digitalphoto@flaar.org). Either Dr. Hellmuth, or his teaching assistant, Sebastien Dion will promptly respond.

# DP 201 : Taking Digital Photography to the Next Level

## Presented by Dr. Nicholas Hellmuth

*Taking Digital Photography to the Next Level* is an innovative online course taught by Dr. Nicholas Hellmuth, a leading expert on digital and film photography. It is the second of two courses in Dr. Hellmuth's online digital photography learning series.

Dr. Hellmuth has developed a customized textbook for the course with unique chapters covering the most important topics in digital photography. To help you become better acquainted with the topics that you will learn, the following document provides a brief summary of each chapter of the course textbook.

Although the first course is not a required prerequisite for DP 201, we strongly urge you to take DP 101 first. There is a substantial discount for taking both courses in sequence; first 101 then 201.

## Medium and Large Format Digital Photography

### Digital Image Resolution

This chapter discusses the differences between dpi, ppi, and lpi in the context of how much resolution is necessary for various printers. Learn to optimize both the quality of the images you produce and the disk space required to work with digital images.

### Pros and Cons of Digital vs Film Photography (Medium and Large Format)

With medium and large format, the differences between digital and film photography change. Learn from the experiences of photographers who have worked with equipment of all sizes using both digital and film technologies.

### Digital Backs for Medium Format Cameras

Considering all of the medium format cameras on the market, and considering their cost, it is important to understand how and why medium format cameras are so important. Learn the advantages of the quality that is only available with a medium format CCD sensor.

### Evaluation & Review of the Leaf Valeo 22

The Leaf Valeo is a 22-megapixel camera that has received a considerable amount of attention. Based on FLAAR's 120-day review using this Mamiya/Hasselblad system, find out whether or not the Leaf Valeo 22 lives up to its advertising hype.

### Hybrid Digital Cameras to Hold Medium Format Digital Backs

Hybrid cameras, which allow you to use a 35mm lens with a medium format sensor, can achieve professional results. Find out whether your expensive 35mm lenses can still be useful to you.

### Large Format Cameras for Digital Photography

Based on original research, learn about the pros and cons of using large format cameras for common situations including architectural and studio photography.

## **Lenses for Medium and Large Format Digital Photography**

Some top-dollar large format lenses are catastrophic when used on a large format scanning back while others work perfectly. Learn about the reality of lenses for professional digital cameras.

## **Recommended Equipment for Creating a Digital Studio**

Based on his experience developing studios for museums and universities, Dr. Hellmuth presents tips to help you create an effective digital studio. Learn about what equipment can still be used from traditional studios, and what equipment needs to be replaced to meet the needs of digital systems.

## **Lighting for Digital Photography**

Digital technology requires different lighting techniques and styles than traditional film lighting. Learn about what kinds of lights work best with digital cameras. (Special emphasis is placed on new lighting technology specially made for digital cameras such as CD, HMI and HDI.)

## **Applications of Professional Digital Cameras**

### **Rollout Photography for Cylindrical Objects**

This chapter features step by step instruction of how to accomplish circumferential photographs using a computerized turntable system resulting in an impressive rollout photograph. Learn how to create the turntable system and perform rollout photography in your home or studio.

### **History of Rollout Photography Cameras**

Expanding upon the historical research of Andrew Davidhazy (Rochester Institute of Technology), learn about recent breakthroughs in rollout photography.

### **Architectural Photography with Medium and Large Format Cameras**

Dr. Hellmuth has decades of experience in architectural photography, starting when he was a student at Harvard. Learn from first-hand experience about lenses, cameras, and equipment that you can use to capture impressive architectural images.

### **Nature Photography with Medium Format Digital Cameras**

Nature photography can be challenging with any digital camera. Learn to distinguish the difference between nature photography and landscape photography, and learn why using a large format camera for nature photography isn't practical, and understand what cameras are better for shooting flowers, butterflies, and other subjects in nature.

### **Landscape Photography with Medium and Large Format Cameras**

In order to print large format images of cityscapes and wilderness, you need to use medium and large format systems. Learn how to apply professional techniques to capture beautiful landscapes with top technology from BetterLight.

## **Panoramic Photography with Digital Cameras**

Panoramic photography can be quite a challenge. Learn techniques, such as color management, to take higher-quality panoramic photographs.

## **The History of Panoramic Photography, 1840-1940**

Based on the knowledge of panoramic photography you'll obtain in the previous chapter, get a historic perspective of panoramic cameras long before computerized turntable technology became available.

## **Survey of Panoramic Cameras**

This chapter discusses ultra-wide angle cameras and reviews cameras of many sizes and shapes from the past several decades. In addition, learn about digital and film panoramic cameras with motors such as the Seitz RoundShot, Dr. Clauss, and a top-of-the-line BetterLight Pano/Wide View system.

## **Product Photography with Professional Digital Cameras**

Photography for catalogues helped digital cameras break into the professional arena because product photography requires large quantities and high-quality. Learn about the tilt-and-swing features of many large format cameras as well as medium format systems that offer traditional movements combined with a digital back.

## **Taking Photographs with a Reprographic Copy Stand**

This chapter focuses on using a tri-linear scanning back on a Kaiser copy stand. Learn the pros and cons of working with a repro stand system in your studio or home.

## **Achieving Top-Quality Results**

### **Gray Balance for Professional Digital Photography**

Point and shoot cameras perform an automatic white balance and 35mm SLR cameras allow you to perform a manual white balance for added precision; however, professional cameras offer automatic and manual gray balance options. Learn to take perfect photographs that require no touch-up in Photoshop.

### **Adobe Photoshop for Professional Digital Photography**

Although one of the goals of this course is to help you utilize the software inside your camera, Photoshop continues to be an indispensable tool for professional digital photographers. Learn the most critical aspects of Photoshop for photographers to help you improve your results.

### **Professional Software for Working with RAW File Formats**

Recently, several software packages were developed for working with RAW file formats including Capture-One from PhaseOne, a Camera RAW from Adobe. Kodak also has its own RAW file software. Learn about the pros and cons of each package compared with Adobe's new DNG format.

### **Computer Workstations for Serious Digital Photography**

Digital environments require powerful computers to manage the large file sizes that cameras and scanners produce. Learn about the best computer hardware available to direct your digital environment. (Both Mac and PCs are discussed from a neutral point of view because FLAAR and Bowling Green State University support both platforms.)

## **Color Management for Digital Photography**

This chapter provides an introductory analysis on color management to guide you through the massive amounts of literature and web pages on the topic while introducing you to the jargon. Learn invaluable tips to help you make decisions about color management tools and software.

## **Bit Depth and Dynamic Range**

This chapter will help you understand the jargon of digital imaging. Learn the terms and techniques that are the foundation of digital technology.

## **Comparing a \$999 Digital Camera to a \$14,000 Tri-linear Scanning Back**

This chapter will help you consider what you really need out of digital imaging technology. Learn the benefits and advantages of each price-level of digital technology.

## **Increasing Depth of Field**

Increasing the depth of field in architectural, industrial, and commercial photography can help you achieve better results. Find out how you can get the most depth of field out of your images.

## **Shooting On-location with Medium and Large Format Cameras**

Shooting on location presents with medium and large format cameras can create some interesting challenges such as image storage and battery management. Learn how to be prepared to face the trials that on-location shooting will present.

## **Workflow Summary for Medium and Large Format Digital Photography**

“Workflow” literally means, “the sequence of flow of your image file from the moment of capture, through digital imaging and color management, to the printer.” Learn the most important steps in digital workflow and re-examine your existing workflow.

## **Improving Your Knowledge of Photography**

### **Trade Shows for New Camera and Printing Technologies**

Attending annual tradeshows is one of the best ways to ensure that you keep up with rapidly-changing technology. Learn about Graphics of the Americas, ISA, SGIA IPEX, DRUPA, and other tradeshows relative to wide format inkjet printers and digital cameras

### **Comprehensive Glossary of Digital Photography Terms**

Although dozens of glossaries exist on the Internet, likely none are as comprehensive as this glossary from Dr. Hellmuth. Created and edited by technicians, students, and teachers, Dr. Hellmuth’s glossary is only available to participants in this digital photography course. Learn the jargon that is essential to digital imaging.

### **FLAAR Book Reviews: Medium and Large Format Cameras**

Although few books exist on medium and large format digital cameras, there are several excellent books on traditional medium and large format cameras and lenses. Read the reviews to help you find the books that are most suitable to your needs.

## **FLAAR Book Reviews: Adobe Photoshop**

Dozens of books on Adobe Photoshop have been published. While most are excellent, some are poorly organized and edited. Learn about the titles that are most appropriate for photographers working with digital cameras who need to work with their images in Adobe Photoshop.

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# DP 101: Achieving Quality in Digital Photography

Presented by Dr. Nicholas Hellmuth

## SLR 35mm Digital Cameras



## Nikon D100 Digital Camera



## Sigma SD9 Foveon



## History and Timeline of Digital Photography



## Professional Results from Budget-Priced Cameras



## Pros and Cons of Digital and Film Photography



## CCD and CMOS Image Sensors



## Nature Photography



## Photograph Composition



## Portraits: Studio and Location Photography



## Architectural Photography



## Quicktime Virtual Object Movies



## Equipment: On Location Photography



## Computer Equipment for Digital Imaging



## Camera and Computer Memory Storing Digital Files



## File Formats for Digital Images



## Hybrid Digital Cameras to hold Medium Format Digital Backs



## Adobe Photoshop for professional Digital Photography



## Lenses and Filters



## FLAAR Book Review on: Digital Photography



# DP 201 : Taking Digital Photography to the Next Level

Presented by Dr. Nicholas Hellmuth

## Digital Image Resolution



## Medium Format Digital Scanning Backs



## Landscape Photography with Medium and Large Format Cameras



## Pros and Cons of Digital vs Film Photography (Medium and Large Format)



## Computer Workstations for Digital Photography



## Nature Photography with Medium and Large Format Cameras



## Equipment: Studio Photography



## Lighting Digital Photography



## How to do a Rollout Photograph of a Cylindrical Object



## History of Rollout Photography



## Panoramic Photography for Digital Cameras



## History of Panorama Photography: Circa 1840-1980



## Digital Panoramic Cameras



## Taking Photographs with a Reprographic Copy Stand



## Workflow Summary for Medium and Large Format Digital Photography



## Color Management for Digital Photography



## Glossary of Digital Photography



## Architectural Photography with Medium and Large Format Cameras



## Bit Depth and Dynamic Range



# Learn Digital Photography Online

Registration now being accepted for Dr. Nicholas Hellmuth's next online digital photography course, 2005.

Take either of the following courses without ever setting foot inside a classroom.

- **DP 101 - Achieving Quality in Digital Photography**

This course will develop your creativity and show you how to use digital imaging to produce astonishing images.

- **DP 201 - Taking Digital Photography to the Next Level**

This is a production-oriented course that will teach you to produce digital images that will help you win exhibits, earn a living as a professional, and in general, create images that make an impact.

Name: \_\_\_\_\_

Soc Sec No. \_\_\_\_\_ Date of birth \_\_\_\_\_  
(or passport number if outside USA\*)

Home Address \_\_\_\_\_ City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_ Country \_\_\_\_\_

Organization \_\_\_\_\_

Business Address \_\_\_\_\_ City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_ Country \_\_\_\_\_

Business phone \_\_\_\_\_ Fax \_\_\_\_\_

Home phone \_\_\_\_\_ Email \_\_\_\_\_

## Registration:

- DP 101 Achieving Quality in Digital Photography** **\$695.00**  
Session 1: January - February, 2005
- DP 201 Taking Digital Photography to the Next Level** **\$795.00**  
Session 2: February - March, 2005
- Both Courses (Save \$295 when you enroll now!) **\$1195.00**
- Send me information on future classes

## Method of Payment:

- Check (payable to BGSU)
- Purchase Order # \_\_\_\_\_
- Credit Card



Card No. \_\_\_\_\_ Exp. Date \_\_\_\_\_

Refunds are subject to BGSU cancellation policies.

**For Additional Information**  
E-mail: [digitalphoto@flaar.org](mailto:digitalphoto@flaar.org)

### To Register for the Course

Call: 419-372-8181 or  
1-877-650-8165 (toll free)



Fax: 419-372-8667



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International & Summer Programs  
40 College Park  
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• To comply with the Hope Scholarship and Lifelong Learning Tax Credit legislation, BGSU now requires all credit and noncredit students from the USA to supply their Social Security number when registering for classes. A Social Security number is not required for students residing outside the USA. These students should substitute a passport or equivalent number.

Bowling Green State University is on EO/AA employer and educator.