FLAAR at BGSU
Large Format Digital Imaging Division

Course Description
Digital Photography as Input for Wide Format Inkjet Printing
Appropriate for Intermediate through Advanced

Example of quality you can achieve with a 5 megapixel camera. Photo by Nicholas Hellmuth in Guatemala.

Organized and delivered by **Nicholas Hellmuth,PhD, Visiting Professor, VCT,
College of Technology Bowling Green State University of Ohio
in cooperation with FLAAR**

Instruction also provided by
**Brent Cavanaugh, Lab Manager, Large Format Digital Imaging Laboratory,
Bowling Green State University**

Editing, design of course delivery, and web presentation by
**Michelle Price, Senior Technical Editor, BGSU + FLAAR, graduate student,
Bowling Green State University**

Open enrollment, via web-based training. You do not have to be resident in Ohio; you can take this course from anywhere in the world via Internet.
Course begins September 2, 2002 and runs through October. Course will gradually be completed during early November.

Introduction

FLAAR was in the forefront of museum-quality, traditional studio and location photography before digital imaging even existed. This experience means that this new course can empathize with traditional photographers, who have a background in 35mm, medium format, and large format photography, as well as non-photographers who also need to move into the shifting sands of the digital millennium.

Course Abstract

This course provides step-by-step instruction of how to produce digital photographs that contain

New headquarters for the FLAAR digital imaging facilities at Bowling Green State University.

optimal resolution for impressive output with wide format printers. Emphasis will primarily be on ColorSpan, Encad, Epson, Hewlett-Packard, Mimaki, Mutoh, Roland, inkjet printers, 24" and wider, though the course is equally applicable to digital imagers such as Durst Lambda and Cymbolic Sciences Lightjet.

Although the emphasis is on wide format printers, it is natural that if you have only a tabloid sized printer, such as Epson 1520, Epson 2000, Epson 3000, Epson 5000, Epson 5500, one of the newer Hewlett-Packard 10ps, 20ps or 50ps, or Canon 8500, that you will also learn how to produce better photographic and fine art giclee prints as a result of this course.

If you do not yet have any inkjet printer at all (none is required; you can take the course without owning either any camera nor any printer), we recommend that you wait to
buy a printer or camera until you have all the evaluations that will be available to you as a participant in this course. For example, two of those printers listed above are poorly designed with serious deficiencies; yet the tabloid-sized Epson 5500 is excellent and we recommend it. So surely you might like to learn which printers to avoid, and which printers are worthy of your consideration.

Same with digital cameras: you will make a more informed and intelligent selection of your next camera once you finish this course.

Format and options

Dr Hellmuth will broadcast major portions of this course directly from Photokina tradeshow in Cologne, Germany. Photokina is held only every two years. This is the largest photography tradeshow in the world. Since Hellmuth lives outside Cologne anyway, he will be spending the entire week at Photokina, a tradeshow he knows well from attending in previous years.

Although you do not have to come to Cologne nor to the university in Ohio, if you do wish classroom type lectures in person, you can attend Photokina with Nicholas.

If Germany is too far away, Professor Hellmuth will also attend the PhotoExpoEast tradeshow in New York the first days of November. This will be during the final portion of the course, so an appropriate time for a summary directly from Nicholas Hellmuth.

BGSU staff will be with you two days at the tradeshow. Of that time you will have instruction for a minimum of one morning and one afternoon personally by Nicholas Hellmuth. The second morning and afternoon will be joint instruction by the associated BGSU staff and/or staff from Francisco Marroquin University, where FLAAR also has a major digital photography studio. You will also receive instruction from professional photographers and managers at specific booths (people who have known Nicholas and FLAAR for years).

Photokina largest photographic tradeshow in the world.

The purpose of this tradeshow visit is far more than merely showing you all the digital goodies. When you come to a booth with a FLAAR editor you are much more likely to get special attention and in many instances to get access to information not normally shared with the average general public. So if you wish to meet some of the movers and shakers of the digital camera world, Professor Hellmuth he will be glad to introduce you to them. He will arrange sessions for you at all the pertinent booths so you can learn the entire range of digital camera technology, CCD and CMOS: entry level, SLR 35mm level, medium format studio level, tri-linear scanning backs for large format. This visit will include complete introduction to large format inkjet printers (including archival inks and photographic media), high-end scanners, as well as digital cameras themselves.

Will also include lenses, lighting (tungsten, HMI, strobe, flash, and digital-fluorescent) accessories and all related camera equipment as time permits.

Will also include book reviews: the leading publishers of books on photography equipment will be exhibiting.

PhotoExpo East tradeshow visit will also include discussion of RIPs: the brains that make large format inkjet printers do all their tricks. Color management includes the three biggest names in color management: X-Rite, Monaco, and GretagMacbeth.

Attending the tradeshow is not required, but is highly recommended.

Target Audience

This course is intended for people who wish to learn how to successfully utilize appropriate digital camera systems for preparing images to print using any standard, wide format inkjet printer, 24" to 74" in width. However, this course is also appropriate for people who need to produce the absolute top quality with a Xeikon or Indigo-type digital printer.

This course is appropriate for the following professions:
- Artists (fine art giclee)
- Curators of any kind of museum
- Graphic Designers
- Photographers, intermediate level and up
- Leisure and pro-sumer photographers who aspire to produce large format size

- Geologists and geographers who need to print GIS combined with photos
- In-house corporate graphic staff
- IT staff
- Architects
- Engineers who need to print CAD combined with photos
- Theater design staff for backdrops and costumes
- Television station set designers
- Textile designers for proofing textiles
- Realtors who need to produce excellent images
- Instructors who themselves wish to use, or teach, digital photography
- Professors who either need to prepare images for wide format or prepare to teach digital photography
- Students of all levels in any of the above fields who need to learn advanced digital photography

This course is also appropriate for individuals in the following industries:
- Advertising agencies
- Sign shops that specialize in POP signs
- Quick print shops
- Reprographic shops
- Prepress
- Proofing
- Courtroom graphics is another area where the quality of display graphics may win a court case
- Government agencies
- Hotel companies
- Travel agencies
- Tradeshow graphics

Course Objectives

Students enrolled in this course should have the following goals:
- Understand why and in what aspects an original digital photograph may produce a better result on a large format printer than would a scanned negative (and vice-versa in other circumstances)
- Understand how the quality of a digital photograph can equal the quality of a traditional darkroom photograph, and in what circumstances this is not so
- Learn which type of digital sensor, CCD or CMOS, will produce the types of photographs you and/or your company need to print. Once you know the capabilities of each distinct type of digital sensor, then you can make an appropriate selection of a make and model of digital camera (remembering that every camera has some good features, and those same good cameras have a few weak points).
- Be able to make the best use of a camera you already have to produce at the quality that you need
- Be able to make a decision on choosing a printer that will meet your needs. You will also realize what accessories, software, inks, and

Dr. Nicholas Hellmuth with a group of participants of the FLAAR+BGSU digital photography course at a tradeshow.

inkjet materials to consider.
- Be able to go to any tradeshow or camera store (or wide format printer dealer), and understand the jargon, distinguish advertising hype from reality, and be able to make an educated selection of equipment
- Know which aspects of Adobe Photoshop you need to concentrate on either with practice or through a subsequent course. You will also receive instruction on what after-market software is a good companion for Adobe Photoshop, and which digital asset management software can keep track of all your images.
- If you wish to be at ease with the jargon of digital photography, digital imaging, and wide format printing, this is also an objective of this course. You will have enough glossaries available to you so that you will be able to read, and understand, even the most arcane report on these subjects and at least know where to go to get help with the definitions.

Research and Preparation undertaken to prepare this course for you

Dr. Nicholas Hellmuth and Jennifer Imes preparing the Digital Photography course

We conducted a survey of roughly 90% of the photography courses available in the USA. Much to our surprise, out of several hundred universities, community colleges, institutes, museums, or photography schools, less than 3-dozen actually offered a course even labeled as digital photography.

The majority of courses that were advertised as "digital photography" turned out to be introductory courses primarily on scanning (which is not digital photography). In the few courses where a digital camera was discussed, only about 10% of the course was dedicated to the camera; 90% of the course was on Adobe Photoshop—teaching students how to repair bad scans. Again, the rubric of "digital photography" has been improperly assumed to cover scanning traditional film and then imaging the resultant scans.

Of the rare instances when a course was really on digital cameras and actual digital photography, probably seven or fewer offered a program in large format digital photography. Courses on inkjet printing were even rarer.

In distinction, BGSU will offer a unique course, not a generic course on scanning and Adobe Photoshop (which you can find almost anywhere). This course by BGSU+FLAAR is dedicated to showing how your digital photography can be (and definitely should be) good quality from the moment of image capture. Your photography should be so good out of the camera that you rarely need to use Adobe Photoshop (other than to resize the image for final printing). Obviously, in real life this goal is elusive, but nonetheless, this course seeks to prepare good quality digital photos to begin with, straight from the camera.

This goal implies needing to learn which digital cameras are best for producing these ideal images. It turns out that the brand name is not always the relevant aspect; what you need to learn is which of the several competing technologies is best for your specific needs.

To incorporate a good mix of learning how to handle a digital camera together with specific features of Adobe Photoshop exclusively dedicated to digital photography, this course will be divided into the following 4 sections:
- the major portion of the course will be directly on digital cameras, lenses, sensor technology,

digital accessories, lighting, etc
- digital photography in the studio as well as out on location
- once you learn how to take good digital images the course will list which aspects of Adobe Photoshop will make them even better. But this is not itself a course on Photoshop because the best measure of a good photograph is never having to use Photoshop to repair it.
- a component of the course will introduce you to how to prepare the image for printing on a large format printer: resolution for example. How much resolution does each kind of printer technology really need: inkjet, dye sub, electrostatic, laser light, laser toner, etc. There is no book which will tell you this information (we know, we looked in over 30 books on digital photography, on scanning, and on Adobe Photoshop).

Course Content

The emphasis of this course is medium format and large format digital scan backs for studio photography, including product photography, museum photography, landscape photography, portrait photography, architectural photography, scientific photography, as well as photography of art of all sizes and shapes.

However very recently a new generation of 5 megapixel CCD sensor made it possible to accomplish basic large format printing with a point-and-shoot digital camera costing less than $1,000. Five years ago a camera of this nature would have cost $28,000. This course is now adding coverage of economical point-and-shoot digital cameras, but only at pro-sumer level, with the newest generation of 5 megapixel cameras as a starting point. Examples include Sony DSC-F707, Minolta DiMage 7, Olympus E-20N, and Nikon CoolPix 5000.

We will also discuss 35mm SLR digital cameras. Since these now have 6 megapixel sensors it raises the question of whether the extra price of a medium format back is a valid investment any more.

This course will also point out the potential of digital photography as input for exotic kinds of inkjet printing in addition to the enlargement of basic photographs. Dye sublimation, both heat transfer from paper with Sawgrass dye sub inks as well as wax and resin coated dye sub inks (Summa, Matan, etc.), will also be included. This course also introduces photographing for printing on metal foil (aluminum, gold, silver) on solid metal (via dye sub transfer). Nowadays, actually there are printers that can print directly on thick and rigid objects up to half an inch thick.

We know of one wide format printer which can print on objects up to 3 inches thick, including bricks, stone, wood, even glass. There is another inkjet printer which prints onto leather and onto door mats or rug sections (yes, even onto pile rugs).

- This course is not intended to cover digital snapshots for the low-resolution Web usage, such as family photography of the kids and pets.
- Additionally, this course is not intended to cover digital photography for use with desktop inkjet printers at letter size.
- We will indeed introduce dye sub and thermal autochrome digital printers (photo size, namely postcard size), but this course is not otherwise dedicatedto such small sizes

- Since Durst, Cymbolic Sciences, ZBE Chromira are indeed wide format, we will cover how to achieve good input for those printers. But those, and their desktop equivalent, the excellent Fujifilm Pictrography, are not inkjet, although we cover their size class, we do not cover the internal technology of LED printers.
- We can gladly recommend sources relative to desktop publishing with laser printers, and how to print photographs with laser printers, but this course is not dedicated to desktop publishing. Our introductory course at Francisco Marroquin University would be more appropriate for desktop printing
- Video frame capture is not covered since resolution is inadequate for enlargement.
- Although there will be readings on color management, discussion of color management, glossaries of terms of color management, and lists of precisely what tools, software, and consultants can take care of your digital photography and wide format printers color management, you will need a separate course on color management relative to your RIP and your printer if you wish to fully master color management. However yes, we do cover color management as it relates to digital photography. Coverage means guided reading, an extensive annotated list of sources, and annotated background research from our staff over the last two years all nicely presented to you as one of the FLAAR reports. Three booklets and two books on color management by color scientists are available from bookstores, so it is not necessary to reinvent the wheel.

Course Delivery

This course will be delivered via Blackboard software, the premier educational software for web-based learning. In this case you will be provided access at no extra charge.

The majority of the learning experience will be guided reading and research. Much of the reading will come from the students' own excursions into their local library and the Internet, using search engines to find pertinent Web sites. Although they will get a considerable head-start from Web sites already provided by the instructor, they will also be expected to acquire additional information on their own.

Nicholas Hellmuth (right) with Joe Tarsia (left) and his impressive tti repro stand for large format digital cameras. PhotoExpo East in the Kodak booth.

We wish to emphasize that since the majority of the people taking this course are mature individuals, that you will need to have a bit of self-initiative in your reading assignments. You will need to go out on the Internet search engines and gather certain information. We have already gone out ourselves and have an impressive bibliography of resources, right down to the specific web sites and individual pages within those sites. Still, you will need to read this material as well as go out on your own and find even more. Your instructor, will naturally be available to let you know which material you find is up to date and which not. Actually even some of the professional camera web sites have an occasional error (as probably do our own sites).

This course does not use slick videos nor interactive CDs. It costs about $25,000 to produce a single CD; a whole course would require a dozen or more. We estimate you would prefer not to pay what that kind of video and/or CD system would cost.

Due to the unique nature of this course (digital cameras, digital camera use, and actual digital photography), there are still parts of the learning units which are under frequent updating.

Course Schedule

The course itself is intended to begin in early September.

There will be occasional periods when your instructor is away consulting both nationally and internationally, or attending seminars. This is why at present we do not have a fixed schedule for the precise end-date of the course.

This course is intended to be equivalent to a 30 hour upper level university course. However you do not have to be a professional photographer (or even an unprofessional photographer). But there are certain pre-requisites, as itemized below.

Course Requirements for you

Hardware and Software

A computer
- Either Mac or PC
- Capability for reading TIF files on a CD
- 256 MB RAM is minimum, 512 MB is better, maxed out at 1 GB RAM is even better
- Several GB of free hard drive space

A method of transferring images, one of the following:
- CD burner, CD-R or CD-RW
- DVD-RAM
- DVD-ROM
- ZIP (CDs are much better though)
- We do not use Jaz disks

Internet access
- 56K modem is preferred since you will need to do considerable reading and research on the Internet.
- E-mail account at convenient location and convenient times

Both platforms PC and Mac are used at each FLAAR facility. Here, working with PosterJet RIP for large format printers

Adobe Photoshop
- Full version preferred
- Version 6.0 preferred; obviously ver 7.0 is okay too.
- Version 5.5 minimum

One of the textbooks appears to have a mini-version of Adobe Photoshop included in the CD that comes with the book. If this has enough functions, it would allow you at least to get started.

Microsoft Word
- Mac
  - Version XP (2002)
  - Version 2001
  - Version 98
- PC
  - Version XP (2002)
  - Version 2000
  - Version 97

Digital Camera

The participants do not have to own a camera but will need to at least to borrow one during the course. If they do not have one yet, they should wait until the course starts since we will discuss all the pros and cons of various makes and models. We will provide information to assist the students in their eventual choice.

Equipment Recommended but Not Required

A printer to print out reading assignments
- Laser will be much faster than a desktop inkjet
- B+W laser printer is adequate though obviously color has advantages
- However, you can go to any Kinko's or comparable and print color when necessary

Prerequisites: what background or preparation do you need to have

You will need to already know basic Photoshop. It would be tough to teach you basics of Photoshop from the absolute beginning. Indeed what makes this course unique is that it's not a course on basic Photoshop hiding under a pseudo-title of "digital photography."

However if you are clever, you can learn Photoshop really quickly on your own. But don't try this unless you have lots and lots of spare time. If you are working two jobs plus family please don't try this.

We will, however, most definitely, show you the portions of Adobe Photoshop that a digital photographer needs to know. At this point again, it's your own practice, practice, until you can do it in your sleep. That's how we learned it. You, however, have an advantage. There are books available today, combined with a photographer-instructor (Hellmuth) to provide a plan and a schedule.

You need to know how to operate a computer; Mac is preferable but PC is quite good as well; we use both at FLAAR at both universities.

Since this course is dedicated to teaching you about digital photography, it is not required that you have background in this beforehand. It is our job to provide the reading and reference material to serve as your background.

This course is NOT a course on physics or chemistry of CCD sensors nor on software code. Instead this is on applied knowledge: how to apply digital photography to your job. You do not need any technical background in physics or chemistry to take this course. This course is applied science (how to use equipment), not how to increase the dynamic range of the left photo site out of six million photo sites on a new generation CCD.

If there are too many applicants then we may have to set other entrance requirements to limit class size.

What this course does not intend to cover

Above we listed the first thing this course does not cover, namely physics (the insides of computers and the inner secrets of voltage inside a digital camera) and chemistry (the hidden recipes inside inkjet ink and in the diverse layers of inkjet media). Yes, we cover how things work; yes we cover the different inks and media (as introduction to large format printing, remembering this is a course on digital photography for printing, not on printing of digital photos).

Elaboration of the above: this course will lead you up to, and indeed into, large format printing, but is not a primer on the use of specific brands of printers. We are developing a separate primer on wide format inkjet printing as a follow-up course. We recommend you take the digital photography course first.

Since there are over a dozen 3-to-5-pixel cameras, a dozen very complex medium format digital backs, and four exceedingly complicated tri-linear scanning backs, we are obviously unable to provide a training manual in each specific camera. We will tend to select a sample of each range (such as Nikon CoolPix 5000 for entry level and BetterLight 6000 for the tri-linear class) and feature them. There is a good chance we will have a medium format scan back in house as well. But mainly we will discuss the cameras as a class: what performance can you expect from each class. How will it affect your business, positively and negatively, if you have x, y, or z make or model of camera. So more of a business-plan kind of discussion, since we notice that so far most of the course applicants are from business. In other words, you need to understand which camera is best for your business. Plus, how much can we produce if our budget only allows x, y, or z class of digital camera.

So please do not ask us how to do macro-focusing on the Widget 4000 Digomatic camera.

You will notice that nowhere do we discuss scanning or scanners. That is because this is a course on cameras, lenses, and photography. Ironically Professor Hellmuth's original background in digital imaging is precisely in scanning (of 35mm, medium format, and large format on flatbed scanners and film scanners). It is precisely because of his interest in scanning that this subject has been kept separate. Scanners will be covered courses in February 2003.

As editor of three of the largest educational web sites on large format printing, you can guess that he will cover these topics, but as a separate course. Bowling Green State University wishes to keep each subject as a module since these courses are extremely labor intensive (and hence costly) to prepare.

Resources provided by FLAAR at BGSU: material already prepared for you.

FLAAR staff with the covers of some of the 51 reports on wide format inkjet printing.

FLAAR has hundreds of pages on its digital photography and printer Web sites already.

For the initial offering of this course during February-April 2001 we prepared more than 25 reports which are the chapters in the course textbook. This system of providing the students reports in PDF format was because no other textbook has yet been written on intermediate through professional digital photography. The few available books are on entry-level point-and-shoot for family weekend photography. FLAAR + BGSU is dedicated to a more professional perspective.

For the September-November course the previous FLAAR textbook chapters have been updated, expanded, and enhanced with more photographs. Additional updating will incur during and after Photokina tradeshow.

There is no book, and no other course which could be as up-to-date as broadcasting directly from Photokina, Germany.

Brochures from the Camera and Printer Companies

In some instances, the brochures of manufacturers and/or distributors contain outstanding illustrations and informative text, and we will seek a reasonable means to provide these brochures to students. The literature of Rodenstock (large format lens company in Germany) is an example of a brochure that is as good as, if not better than, some textbooks.

Opportunities to Consult with Digital Photography Guest Experts

Because FLAAR at BGSU's www.digital-photography.org is a recognized contributor in the world of digital photography, it may be possible to attract guest experts to be available to answer questions, either during discussions, via e-mail, or in some instances directly on the phone (during pre-arranged discussion times dedicated to the expertise of the guest speaker).

In addition is the experience of visiting a tradeshow in person with Nicholas Hellmuth to meet the other digital photography people also in person.

Video Resources

Receiving video over the Internet is not yet a functioning technology unless you have a T3 line or at least T1 or similar. So far the massive costs of preparing the course in video format or in interactive CD format has been prohibitive. However, if we find video programs on digital photography from other sources we will list them as additional resources.

Additional Course Information

Class Enrollment and Credit

It is not required that students have an affiliation with a college or university to enroll in this course.

Chapters of FLAAR Textbook on

DIGITAL PHOTOGRAPHY
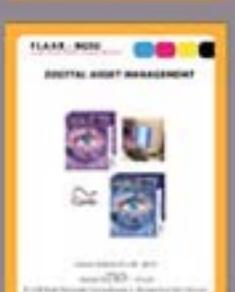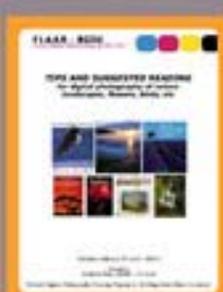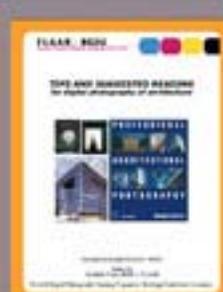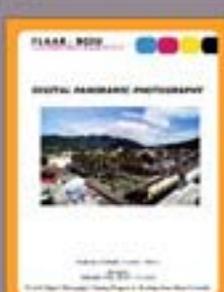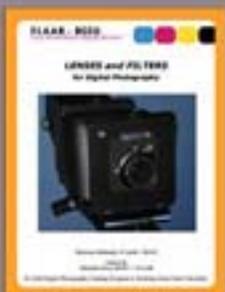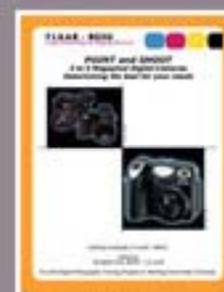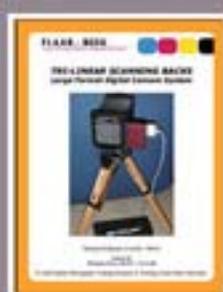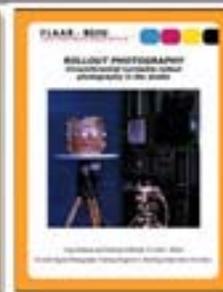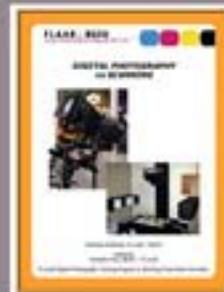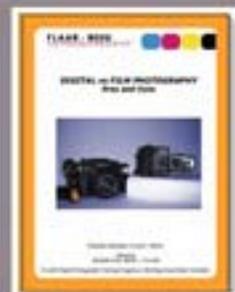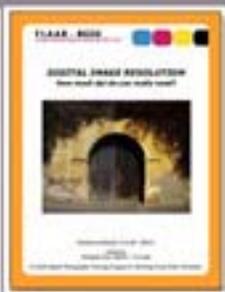
If you absolutely need course credit we can see if the paperwork can be arranged. There would be one price as a 1 or possibly 2 hour credit course via BGSU.

So far, most of the people who have shown interest in the course are people already out in the real world working. This is why we decided tentatively to offer the course as a regular training program. This also lowers the price someone, namely a price as non-credit, where you attend the class (via the Internet) as you would any seminar, conference, or other program of instruction.

Cost
We checked around to see what other universities and institutes charge:

One place offered a six day course at a tuition of $895, lab fee $200 = $1,095 for a week. The lowest program at this institute was $720 total for a single week.

Another photography school charged $1100 for a week. Their web site did not reveal what a longer course might cost.

A third institute charged $925 plus digital lab fee of $95 just for Photoshop for photographers, $1,145 for how to print digital photographs and actually did not really have a real course on digital photography (only on how to use Photoshop).

Why the high price: all the above institutes are basically commercial. FLAAR is a non-profit educational institute and BGSU is a state university. Our goal is education, not a commercial business. We just need to cover the actual costs of preparing and delivering the course. Preparation has been intensive and several staff members are part of the team assisting Dr Hellmuth.

During the months of preparation of this course, Professor Hellmuth's staff searched every other university and photo school they could find. Virtually no course was actually fully on digital photography with a digital camera. Instead courses were on scanning and imaging, but merely labeled as "digital photography."

We could not find a single course which featured large format inkjet printing either.

The BGSU+FLAAR program is pure digital photography along with tips on Adobe Photoshop and an introduction to preparing your prints for inkjet printing. We have established a cost of $800 since the program will actually last over approximately two months (no, obviously not all day long, and you can take the course from your home, your office, or even while on vacation somewhere).

The tradeshow visit personally with Dr Hellmuth and his staff is an additional $300 fee. However you are not required to add the tradeshow sessions to the course. Obviously this $300 does not cover airfare, hotel, meals, nor hotel booking services. Tradeshow entrance is on your own as well; in many cases you can wrangle free tickets from magazines or vendors.

FLAAR editors inspecting the Roland printer at Print' 01

FLAAR staff at BGSU using the recently arrived Cruse digital camera, the only $97,000 digital camera in Ohio that we know of.

If you wish to come to BGSU and learn to use the Cruse digital reprographic camera – scanner (all $ 97,000 worth of it), there is an instruction fee of $100 to cover four hours: one hour of instruction plus three hours of you getting to use the scanner on your own to scan whatever you wish to bring with you (within reason). If you wish to remain the entire day and keep on scanning and/or learning about the adjacent printers, cost is $200 for the entire day (8 am to 5 pm allowing a one hour lunch break). As comparison, a single scan from a camera of this quality is between $ 180 to $ 200 if you went to a commercial prepress, photo studio, or other lab (if you could even find equipment of this nature).

However as a participant, there is no per-scan charge. We can burn your images on a CD so you can take them home.

If you wish to print any of your scans (or any other files you wish to bring with you) there are plenty of wide format printers in the FLAAR facility at BGSU. Just pay the standard cost per square foot, depending on what kind(s) of media you wish. There is no extra charge on this day for you to receive instruction from the printer operator if you wish to take a break while the Cruse is doing its photography.

If it becomes possible to print out some of our course material in color, you may have the option of buying a hard-copy printout, but this is not mandatory. There may occasionally be PDF files that would be available for purchase as well, but we will do our best to keep them optional.

Most of the textbooks you can probably get from any on-line bookstore. We have not arranged to get commissions on those sales. Since the prices are already discounted, we doubt there would be much commission left to tempt anyone.

The university here takes credit cards. You do not pay FLAAR anything; the income goes to the university to cover the joint costs of BGSU + FLAAR preparing all of this.

Course Grading

So far, everyone who has asked to sign up is already out in the real world working at a job in industry: repro shops, educational institutions, photo studios, fine art giclee, and a wide range of other professions.

In other words, there are no "students" who need course credit. Hence we can avoid "grading."

However, since BGSU is a state university, and in case any other applicant might need a course credit(s), these participants would be graded on the following:

- Participation and attendance (e-mail exchanges and discussion groups)

- Case studies based on their own field trips; this implies self-initiative.
- Research, both in libraries and on the Internet
- Reviews of material obtained from their local library and Internet research
- Projects (resulting from research and case studies) and a final project

People who are working photographers usually already have enough projects of their own, so the above list is primarily if you are enrolled as a student, need a grade, and hence need assignments to be graded.

Subsequent Courses

Digital Photography as Input for Wide Format Printing is part of an expanding trilogy. The next course is "Learning the Software that Drives Wide Format Inkjet Printers: Hardware RIPs and Software RIPS." A Rip is a **R**aster **I**mage **P**rocessor, which is normally software. FLAAR has Onyx PosterShop, PosterJet, Wasatch, ColorGate, ColorSpan (hardware RIP), BESTColor, BEST PhotoXposure, BEST ARTmosphere, Aurelon (proofing RIP), ProofMaster (PerfectProof), with additional software suites arriving almost every week.

The course on RIPs will be taught by Brent Cavanaugh, manager for the combined BGSU + FLAAR digital imaging evaluation facility. Course material will include reports by Milos Krsmanovic (an instructor in the College of Technology, BGSU) as well as naturally by Nicholas Hellmuth. We anticipate this course to begin in November (to follow the digital photography course). There is no requirement that you take them both.

Cost for the course on RIPs will be $500 or less (we note that one place offers a course on a single RIP for just under a thousand dollars; our course includes surveying a dozen RIPs and on many printers).

A subsequent component of future offerings from BGSU + FLAAR will be "Introduction to Wide Format Inkjet Printers" that will be initiated in 2003.

Additional courses will include scanners and scanning, color management, inkjet colorants and media, and a host of related subjects. In most cases, the initial entry-level focus will always be input. You will not achieve good output if you are only concerned about your printer, your inks, media, and color management. All that knowledge comes to nothing unless you have usable input. A good print starts with a good digital photograph.

These courses will lay the groundwork for color management, but are not in themselves yet a course on color management. However, we will offer a considerable array of assistance for those who wish to move into this next stage.

There is absolutely no requirement that you take any additional course.

Michael Collette, inventor of the BetterLight tri-linear scanning (left)
with Professor Hellmuth (PhotoExpo East)

Direct Access to Nicholas Hellmuth

Dr Nicholas Hellmuth will personally teach this course. Yes, naturally his staff will handle many aspects, especially signing up and all the paperwork. But he will be available at the tradeshow.

One dedicated e-mail address will be assigned for this course. Once this e-mail is set up, we ask that you not use any of the other FLAAR e-mail addresses. Anything and everything you send to the new dedicated e-mail will be read, and answered, during course meeting hours and during "office hours."

One dedicated telephone number will be assigned for this course. This way you can speak to Hellmuth in person. We will have certain hours during the workday (for those who can call from work) and other hours during evenings (for those who should not call from their workplace).

There will be set hours for him to be at this phone. These hours will be posted on the course's web site. We ask that you do not use his home phone, nor his regular BGSU office phone for this course.

There will be a few weeks when Dr Hellmuth is in Germany (at Photokina) or at his other university in Guatemala or attending conferences or off consulting. During these times access to him will primarily be via e-mail, as long-distance telephone calls get a bit pricey. Occasionally he goes to remote areas for digital photography on location; some of these areas, even in the USA, have no e-mail access, but usually such a location shoot is just for a few days.

Signing Up

There is no requirement that you be a student in the traditional sense, the course description is more important than the course number. Actually we don't usually assign a course number.

This course is being developed by FLAAR within the Center for Applied Technology, Joe Catalano, Director, College of Technology, Bowling Green State University of Ohio. Thus applications, which are a bit informal at this stage, should come to the e-mail FLAARtest@aol.com. If you wish to fax, try our direct fax # 419 372-8283.

We ask that for the moment you not telephone, since Professor Hellmuth is off consulting with a photography company and then attending meetings at the other university where he also teaches digital photography in the summer, Francisco Marroquin University. The difference is that the BGSU course is intermediate to advanced, whereas the UFM course is introductory level to intermediate. The UFM course is in-person in Guatemala; the BGSU course is world-wide via the Internet.

Table of Contents

Left: La Merced church in Antigua Guatemala. **Right**: Bowling Green State University campus

Click to view each FLAAR Network site

www.wide-format-printers.org	www.FineArtGicleePrinters.org	www.large-format-printers.org
www.digital-photography.org	www.flatbed-scanner-review.org	www.laser-printer-reviews.org
www.FLAAR.org	www.ctpid.ufm.edu.gt	www.wide-format-printers.net

Course material will all be in English; however you can correspond en español oder auf Deutsch.

Digital Photography as Input For Wide Format Printing Output
September 2- November 4, 2002

NAME: _____

SOC SEC #_____ DATE OF BIRTH _____

HOME ADDRESS _____ CITY _____

STATE _____ ZIP _____ COUNTRY _____

ORGANIZATION _____

BUSINESS ADDRESS _____ CITY _____

STATE _____ ZIP _____ COUNTRY _____

BUSINESS PHONE _____ FAX _____

HOME PHONE _____ EMAIL _____

Registration :

❏ Course $800

❏ Course Options $300

   ❏ Photokina Trade Show (select two days from Sep 27-30)

   ❏ PhotoExpo East Trade Show (two days, Nov,1-2)

   ❏ SGIA, Trade Show (one day, Oct 30)

❏ Use of BGSU Large Format Digital Imaging Laboratory (optional)

   ❏ Half day $200

   ❏ Full day $400

   Additional charge will be assesed
   based on usage of print media and inks

Easy Ways to Register

☎ Call: 419.372.8181
   or toll-free 877.650.8165

📠 Fax: 419.372.8667

✉ Mail: Continuing Education,
   International
   & Summer Programs
   40 College Park
   Bowling Green State University
   Bowling Green, OH 43403
   USA

**Registration Deadline
August 19, 2002**

All registrations and cancellations must be
determined by this date.

Method of Payment:

❏ Check (payable to BGSU)

❏ P.O. Number _____

Refunding subject to BGSU (cancellation policies)

• You need not decide on the options today. You can sign up for the basic course now and sign up for one or both options later if you wish

• To comply with the Hope Scholarship and Lifetime Learning Tax Credit legislation, BGSU now requires all credit and noncredit US students to supply their social security number when registering for classes. Special accomodations available for international participants.

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

KEYCODE
11030602