

Biomedical Photographic Communications Required Courses

2061-201

Biomedical Photography 1 – fall

This course is the first of a three-quarter sequence of study in the fundamentals of photography, with emphasis on the development of strong photographic skills as they relate to the fundamentals of camera lenses, choosing and using perspective, lighting and related aspects of image processing where relevant. Principles of creativity, craftsmanship applied photographic theory as well as visual communication and presentation will be used to support the foundation theme of using cameras as a tool used in problem solving for technical and visual communications.

[Prerequisites: none, Credits 5, offered Fall Quarter]

2061 -202

Biomedical Photography 1 – winter

This course is the second course of a three-quarter sequence of study in the fundamentals of photography, with emphasis on the development of strong artificial lighting skills as they relate to working in the studio. Principles of creativity, craftsmanship, applied photographic theory as well as visual communication and presentation will be used to support the foundation theme of using multiple camera formats.

[Prerequisites: 2061-201, Credit 5, offered Winter Quarter]

2061-203

Biomedical Photography 1 – spring

This is the third course of a three-quarter sequence exploring in the fundamentals of scientific photography, with emphasis on the development of enhanced skills as they relate to working as a scientific photographer. Principles of creativity, craftsmanship, applied photo- graphic theory as used in the presentation subject matter relevant to the life sciences industry will be incorporated as part of the foundation for future biomedical photography experiences where appropriate.

[Prerequisites: 2061-201 & 202, Credits 5, offered Spring Quarter]

2061 -213

Survey of Biomed

Following graduation, there exist a variety of career directions a BPC graduate might consider as a direct consequence of the diverse curriculum that has been completed and influenced by a wide range of professional electives. Survey of Biomed is one of the program's original courses dating back to 1969. Alumni from various industries are invited to campus and share their careers through an interactive lecture class required for all Biomed majors.

[Prerequisites: none, Credits 1, offered Winter Quarter]

2061-301

Applications of Scientific Photography I – Close-Up and Laboratory Photography

This is the first of a 3 - course sequence that emphasizes the photographic skills necessary for close-up photography used in scientific photo-documentation. Laboratory subjects such as contact lenses, rice grains and other small, challenging—almost invisible objects—will be explored. Students will investigate lighting required to create new ways to reveal a subject's characteristics. Subjects will be photographed using polarized light and fluorescence techniques demonstrating what cannot easily be observed without photography. The course will also explore appropriate subject management strategies, as well as develop scientific methods to be used as imaging standards during the 10-week class.

[Prerequisites 2061-201, 202, 203; 4 credits; offered fall quarter]

2061-302

Applications of Scientific Photography II - Photomicrography

This course, the second in a series of courses is offered in the winter quarter. Students are exposed to illumination and optical considerations required to operate and photograph using a light microscope. Producing Kohler illumination, controlling light in a microscope and following scientific method will be explored as core activities. The final project requires the production of a large educational poster featuring one microscope subject that has been researched and photographed using the microscope.

[Prerequisites 2061-201, 202, 203; 4 credits; offered winter quarter]

2061-303

Applications of Scientific Photography III – electronic flash in science

This is the last course in the 3-course sequence and is offered in the spring quarter. Students investigate the electronic flash as a light source when applied to various situations found in life sciences community. Students are exposed to ophthalmic photography, surgical photography, dental photography, as well as location and public relations assignments. The class final project is a capstone assignment exploring concepts and techniques required in the design and production of instructional media

[Prerequisites 2061-201, 202, 203; 4 credits; offered spring quarter]

2061 -311

Preparation of Biomedical Visuals I

This first course delivered over a 2 quarter sequence will study the basic principles required for the generation of effective visual communication specific to the life sciences industries. The emphasis will be placed on choosing and using the correct technology for visuals including aspects of fundamental design required in such a dynamic delivery environment. Assignments have been designed to emphasize the appropriate techniques for producing visuals, which exhibit effective design necessary for reproduction either using traditional mechanical or electronic methods.

[Prerequisites 2061-201, 202, 203; 3 credits; offered fall quarter]

2061 -313

Preparation of Biomedical Visuals III

This is the second course students in this major are required to take exploring the preparation of visual support materials. Prep III explores the basic principles required for the generation of effective desktop publishing specific to the life sciences industries. The emphasis will be placed on choosing and using the correct technology for visuals including aspects of fundamental design required electronic publishing. Students will specifically be exposed to core principles required to produce electronic pieces including effective resumes, posters, brochures, flyers and books. Assignments have been designed to emphasize the appropriate techniques for producing these visuals, which exhibit effective typography that is necessary for reproduction using digital printing.

[Prerequisites 2061-201, 202, 203; 3 credits; offered winter quarter]

2061-361

Web Design using Photography

Photographers have always communicated visually and the accessibility of the World Wide Web creates a potential audience of millions. This course explores the nature of the World Wide Web, web sites and the process of designing, building and maintaining these sites for business or other applications. Students will explore the use of images and media as they relate to the Web, including bandwidth and quality considerations. Interactivity, design, structure, viability and the successful delivery of ideas will be emphasized. Some quarters this course is delivered through distance methodology and culminates in individual student web sites as the course final project.

[Prerequisites 2061-201, 202, 203; 4 credits; offered fall, winter & spring quarters]

2061 403

Advanced Applications of Biomedical Photography

This course is a required third year course, which has been designed and delivered using the applications of photography that serve the needs of the scientific community. The role of scientific photography has significantly changed and encompasses a wide range of contemporary services and practices. This course will explore the role of photography as a visual communications tool using all media technologies as potential distribution channels. The emphasis of the course will be on the forming and capture of highly accurate informational photographs that were originally produced as scientific data> with high quality images captured, students will focus the development of the skills required for image optimization using a wide variety of display technologies.

[Prerequisites 2061-301, 302, 303; 4 credits; offered spring quarter]

2061 -316

Digital Media I

This is the first in a series of four required courses that Biomedical Photographic Communications students take in their third and fourth year. The course explores other digital media forms that are used with still photography in the design, production and delivery of instructional media. Students will plan and produce projects that integrate audio, still images, interactivity, 2D animation, and virtual reality photography. The course will also provide an introduction to basic instructional technology concepts that

influence design, development, and assessment decisions. The focus of work done in this class will be the production of media used in support of training and marketing activities in business and technical and healthcare industries.

[Prerequisites 2061-301, 302, 303 & 361; 4 credits; offered winter quarter]

2061-318

Digital Media II

This is the second in a series of four required courses that Biomedical Photographic Communications students take in their third and fourth year. The course explores the use of motion imagery and digital video technology as it related to the design and production of instructional media. The course will continue to reinforce basic instructional technology concepts introduced in Digital Media I. Students will work in production teams utilizing digital video equipment to complete assignments that involve pre-production planning, field production and post-production editing tasks. The focus of work done in this class will be the production of media used in support of training and marketing activities in business and technical and healthcare industries.

[Prerequisites 2061-301, 302, 303, 361, & 316; 4 credits; offered spring quarter]

2016-401

Digital Media III

This is the third in the 4 course series of required courses that Biomedical Photographic Communications students take in their third and fourth year. The course explores the technology and production techniques involved in delivering digital media via interactive CDs and DVDs as well as publishing multimedia content to the Internet. The focus of work done in this class will be the delivery of media used in support of training and marketing activities in business and technical / healthcare industries.

[Prerequisites 2061-361, 316, & 318; 4 credits; offered fall quarter]

2061 -402

Digital Media IV

This is the last in a series of four required courses that Biomedical Photographic Communications students take in their third and fourth year. The course explores the process of designing, producing, and delivering a media based program that solves specific communications problems as identified by a client. As a final “capstone” project, students will apply the learning acquired in the previous three Digital Media courses to a unique problem and deliver a media solution, meeting a negotiated timeline and deadlines. The focus of work done in this class will be the delivery of media used in support of training and marketing activities in business and technical / healthcare industries.

[Prerequisites 2061-316, 318 &, 401; 4 credits; offered winter quarter]

Biomedical Photographic Communications Elective Courses

2061-354

Basic Ophthalmic Photography

This the first course in the department’s series of ophthalmic photography and will

investigate proper patient, camera and photographic techniques in ophthalmic photography. Diagnostic evaluation of ocular anatomy and physiology utilizing special cameras will be presented.

[Prerequisites 2061-301, 302 & 303; 4 credits; offered fall quarter]

2061-454

Intermediate Ophthalmic Photography

Intermediate Ophthalmic Photography will go beyond the shooting of retinal fundus photographs or posterior segment photography and concentrate on interpretation of fluorescein angiography films and anterior segment photography. Additionally, this course will also investigate external ocular photography, slit-lamp biomicrography, common corneal anatomy and diseases.

[prerequisites 2061 - 354; 4 credits; offered winter quarter]

2061 455

Advanced Ophthalmic Photography

Students will work off campus in an ophthalmology clinic performing stereo fundus photography, fluorescein angiography, specular biomicrography, slit-lamp biomicrography, and goniography. The educational experience is balanced with the needs and tolerance of each patient involved, and represents an important clinical education necessary for diagnostic imaging. Students will be responsible for their own transportation to and from site.

[Prerequisites 2061 - 454; 4 credits; offered spring quarter]

2061 -354

Principles and Techniques of Macro Photography

This condensed course in photomacrography will examine the equipment used and the technical considerations necessary in the photography of subjects at a capture magnification of 1:1 thru 20:1. Lighting, optics, camera technique and various other considerations will be evaluated in the theory and practice. Students will be exposed to interesting problems and lighting equipment not found in other types of photographic work. Many assignments will explore using software to improve images where DOF is impossible to achieve.

[Prerequisites 2061 – 301 & 302; 4 credits; offered fall quarter]

2061- 463-01

Photography & the Microscope

The microscope has proven itself to be an important tool for investigation when operated correctly. Advanced Microscopy has been designed to go well beyond the basic optical principles required to create magnified images of invisible objects and to explore objects using a variety of techniques and samples. No microscopical technique can be optimized without consistent and fundamental approaches such as through the use of Kohler illumination or the effective operation of all parts located on the instrument. Photography & the Microscope will investigate both the optical and digital enhancement techniques made possible in contemporary times, video recording

methods, motion stopping using electronic flash as well as specimen preparation as part of the coursework. Additionally since the course is offered in the winter quarter, snowflakes will be photographed of this course.

[Prerequisites 2061 – 301, 302 & 303; 4 credits; offered winter quarter]

2061 – XXX

The Science Image

Images made in Science are experiencing a boom as a direct consequence of new technology. Books, magazines, television documentaries are being produced in quantities never before experienced in the era of analog technologies and so therein lies the challenge for practicing scientists. Navigating the digital environment and avoiding common pitfalls, which maybe a direct result of poor practices will be explored in great detail. What defines good scientific images, what are the accepted boundaries for image editing as well as other contemporary issues such as digital piracy will be investigated using assignments, lectures and guest visitors in this interactive discussion based course.

[Prerequisites none; 2 credits; offered fall & spring quarter]

2061 – XXX

Panoramic Photography

This Panorama photography class will provide a wonderful opportunity for students to learn the various aspects of making both VR panorama movies and prints. Students will be exposed to camera and lens considerations required for stitching software. The course will expose students to the advantages and disadvantages of various approaches currently used including various stitching software products. Students will make several panorama VR movies as well as at least one large mural print.

[Prerequisites 3rd year status SPAS; 2 credits; offered spring quarter]

2061 – XXX

Adobe Flash for Photographers

The World Wide Web creates a unique way for a photographer to exhibit a portfolio of photographs to clients. This course explores the nature of the World Wide Web, web sites and the process of designing, building and maintaining these sites as an adjunct to the photographer's portfolio. Students will explore the use of images and media as they relate to the Web, including bandwidth and quality considerations. Interactivity, design, structure, viability and the successful delivery of ideas will be emphasized. The course culminates in individual student web sites as the course's final project.

[Prerequisites none; 4 credits; offered spring quarter]

2061- 276

Fundamentals of Scientific Photography

2061-276 is a basic photography course for non-technical photo majors that places emphasis on theory, craftsmanship, and visual communication based in required for applications of photography that are informational such as forensic, medical, and

biological. Relevant subject matter will be incorporated into this foundation course required as a prerequisite for other photography courses in this major such as photomicrography, ophthalmic photography and photo & the microscope. Students will explore effective camera operation and lens selection, using depth of field, exposure determination and use, as well as the use of supplementary artificial light sources. [Prerequisites - none, 4 credits quarter offered