DIGITAL MEDIA AND PHOTOGRAPHY

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Academic Programs	Credits
BFA in Visual Art	
Fine Art	75–78
Graphic Design	75–78
Pre-Art Therapy	75–78
BFA in Visual Communication	
Art Direction & Advertising	75–78
Graphic Design	75–78
Web Design	75–78
BFA in Photography	
Commercial Photography	75–78
Documentary Video	75–78
Fine Art Photography	75–78
Minor in Graphic Design	22
Minor in Visual Art	22
Minor in Digital Media	21
Minor in Photography	20

Mission
We, the Andrews University Departments of Art & Design and Digital Media & Photography, mentor students to be Christ-centered, socially responsible creative individuals by developing their artistic gifts in a nurturing spiritual environment.

Department Goal
It is the goal of the Departments of Art & Design and Digital Media & Photography to help each student achieve the traditional and digital skills necessary to achieve entrance into a graduate program, begin work as a professional artist or craftsman or achieve a professional portfolio that will allow them to directly pursue a career in their chosen track after graduation. Through dedicated faculty, quality education and active community involvement, we seek to empower students to honor God in their visual communication.

Student Handbook. The *Department of Art & Design Student Handbook*, available at the Department office, provides clarification of departmental guidelines, requirements and standards.

Multiple Majors & Degrees. The department of Art & Design allows students to graduate with a double BFA major or a BFA and a BA in Art History. Credits cannot be duplicated within the 36 credit emphasis track.

Computer Policy. The Departments of Art & Design and Digital Media & Photography regard the computer as a tool integral to the success of the visual communicator in their professional development. All students are required to purchase a laptop computer and software meeting the department guidelines. Because computer technology is continually changing, a revised policy is drafted in the fall semester, outlining the specific requirements for each year. Laptop purchases should be made by mid-fall semester of the student's freshman year. Use of the computer in the curriculum varies by course.

Undergraduate Programs

Bachelor of Fine Arts (BFA)
The three closely related departments of Art & Design, Communication, and Digital Media & Photography offer students an exciting opportunity to earn a collaborative Bachelor of Fine Arts degree (BFA). The BFA degree encompasses three areas Photography, Visual Communication and Visual Art.

Each of the BFA degree emphases has a 4–part curriculum:
    (1) Art History
    (2) Studio Core
    (3) Foundation Courses, and
    (4) Portfolio Track.
    Additional cognates along with the General Education requirements complete the specifications for graduation for the BFA degrees.
    Upon completion of the Studio Core and Foundation Courses the student must arrange for a BFA review. The BFA review should happen no later than the end of the sophomore year. The BFA review is a critique of the student's portfolio by the combined faculty of the Department of Art & Design. All work created in the Studio Core and Foundation program should be available for review. Once accepted into the BFA program students must maintain a 2.75 GPA in all BFA coursework. No courses with a final grade below a C will be accepted toward the completion of the BFA. The completion of the BFA includes a senior exhibition and portfolio of the student's work.

Bachelor of Fine Arts Degree (BFA)—75–78
Art History—12

ARTH325	Prehistoric to Medieval Art	3
ARTH326	Renaissance to Modern Art	3
ARTH440	Art Since 1945	3
Choose one additional class from this list:		
PHTO210	History of Photography	3
ARTH245	History of Graphic Design	3

Studio Core—18–19

ART104	Intro to Drawing	3
ART207	Basic Design	3
DGME130	Intro to Digital Graphics	3

PHTO115	Intro to Photo	3
or PHTO116	Intro to Digital Photo	4
ART209	3-D Design	3
DGME120	Intro to Web	3

Foundation Courses

Choose three classes from this list—9–11

ART105	Intro to Painting	3
ART106	Intro to Printmaking	3
ART107	Intro to Ceramics	3
ART214	Intro to Graphic Design	3
DGME175	Digital Imaging	4
DGME225	Vector Graphics	4
DGME250	Web Design I	3
JOUR140	Intro to Mass Communication	3
MKTG310	Principles of Marketing	3
VDEO130	Intro to Video	3

36-credit portfolio tracks include: Fine Art, Graphic Design, Art Direction/Advertising, Pre-Art Therapy, Multimedia Arts, Photography, Video Production, and Web Design.

Emphasis Areas

VISUAL ART EMPHASIS

The Visual Art Emphasis is recommended for students who wish to become professional artists, illustrators, craftsmen, or art teachers on a college level. It is the first step toward acceptance into an MFA program, which is the necessary degree for pursuing a teaching position at the college level. It is also the first step toward acceptance in an MA program in Art Therapy. After an exploratory period students will be encouraged to concentrate the majority of their credits in a single area: painting, ceramics, or printmaking. At least 18 credits in one area are recommended in order to achieve a professional portfolio of work and senior exhibition.

Fine Art Portfolio Track

The Fine Art track cultivates the individual voice and vision of the Fine Arts student and prepares them to sustain their professional lives as practicing artists.

36 Total Credits: 24 credits chosen from ART304 Drawing, ART305 Painting, ART306 Printmaking, ART307 Ceramics, ART308 Sculpture, ART380 Topics in Art, (all 300 level ART courses are repeatable); ART485 BFA Thesis Project (3), ART497 BFA Exhibition (3). With 6 additional elective credits to be chosen with your advisor from ART, ARTH, ARCH, PHTO, DGME, COMM, VDEO, MDIA, JOUR, or MRKT courses.

Illustration Portfolio Track

The Illustration track prepares students to enter a career in professional illustration. The successful illustrator is able to convey emotions, interpret events, tell a story or market a product or idea through the use of artistic concepts and images. Illustrators must master a wide range of drawing media and techniques to meet the objectives of a wide range of employers and projects.

36 Total Credits: ART304 Drawing (3), ART305 Painting (12), ART306 Printmaking (3), ART 310 Typography (3), ART485 BFA Thesis Project (3), ART497 BFA Exhibition (1) and ART496 Portfolio Development (2). With 9 additional elective credits to be chosen with your advisor from ART, ARTH, ARCH, PHTO, DGME, COMM, VDEO, MDIA, JOUR, or MRKT courses.

Pre-Art Therapy Portfolio Track

The Pre-Art Therapy Emphasis is recommended for those planning to do graduate work in art therapy and to enter that profession. Work as an art therapist requires a master's degree in Art Therapy. The Pre-Art Therapy Emphasis may require additional semesters of course work. The Pre-Art Therapy Emphasis is the Bachelor of Fine Arts Degree with a concentration in Fine Arts. In addition to the BFA degree most graduate programs require up to 15 credits of Psychology course work. We recommend PSYC101, 301, 410, 454 and 460. Because course requirements vary, the Pre-Art Therapy student should check the prerequisite requirements of the schools to which they intend to apply. Most art-therapy master's programs also require up to one year of work experience with mentally or physically disadvantaged people prior to acceptance.

VISUAL COMMUNICATION EMPHASIS

The Visual Communication Emphasis is recommended for those wishing to work in the design professions. There are three portfolio tracks available: Art Direction & Advertising, Graphic Design and Web Design. The degree programs combines the study of art, communication, design, and technology as mediums for visual communication and/or personal artistic expression. Our students join the Visual Communication program because they possess the ability to think, speak, draw, write and design. They graduate as design leaders, having learned to inform, guide, clarify, promote and empower through visual form. The BFA Thesis Project and Senior Exhibition, as well as internships, bring students face-to-face with the design community. At the same time, students acquire valuable experience in problem solving and the application of design principles, making them cultural catalysts and sought-after design professionals.

Art Direction/Advertising Portfolio Track

The Art Direction/Advertising track prepares students for work in the advertising professions. It combines both tools for visual dialogue and tools for written communication. The Art Direction/Advertising student will become prepared to understand visual dialogue and to communicate effectively and creatively

36 Total Credits: ART310 Typography (3), ART433 Advertising & Package (3), JOUR140 Introduction to Mass Communication (3), JOUR230 Beginning Media Writing (3), MKTG368 Advertising and Promotion (3), COMM405 Persuasion (3), COMM456 Group Dynamics and Leadership (3), ART485 BFA Thesis Project (3), ART497 BFA Exhibition (1), ART496 Portfolio Development (2), ART487 Internship (1). With an additional 8 credits to be chosen with your advisor from ARTH, PHTO, DGME, COMM, VDEO, MDIA, JOUR, or MRKT courses. Suggested electives include: JOUR465 Topics: Scriptwriting, COMM425 Media Literacy, COMM454 Topics: Organizational Communication.

Graphic Design Portfolio Track

Graphic Design is a multifaceted discipline, which encompasses many types of content and media. Projects include book design, poster design, identity design, packaging, exhibit design, magazine design, interface design, and advertising design. The Graphic Design track provides a comprehensive education within this ever-expanding discipline and strives to prepare accomplished, resourceful graphic designers with critical minds to evaluate their own work, its place in the professional and in the larger community it is meant to serve.

36 Total Credits: ART310 Typography (3), ART430 Corporate Identity (3), ART431 Editorial Design (3), ART432 Corporate Design (3), ART433 Advertising and Package Design (3), PHOTO300 Media Ethics (3), ART485 BFA Thesis Project (3), ART497 BFA Exhibition (1), ART496 Portfolio Development (2), ART487 Internship (1). With an additional 11 credits to be chosen with your advisor from ART, ARTH, ARCH, PHTO, DGME, COMM, JOUR, MDIA, VDEO or MRKT courses.

Web Design Portfolio Track
(Resides in the College of Technology)
Interested in creating visually stunning and interactive layouts for Web and other Interactive applications? The successful Web Design student will be able to discuss underlying technology—its possibilities and limitations as well as related issues—with clients and team members; layout accessible web pages and sites using (X)HTML and other web development languages; develop dynamic effects and animations; Translate client needs, content, and branding into structured website concepts and project visitor needs into structured website concepts.

The student will develop strong design skills to gain an excellent grasp of visual, interaction and usability design principles through typography, graphics, color, layout, and other factors in a web-specific way. Projects will range from in-class projects to month-long projects for non-profit and for-profit organizations.

36 Total Credits: DGME335 Flash (4), DGME350 Web Design II (4), PHOT365 Advanced Digital Imaging (4), ART310 Typography (3), one 400-level design class (3), CPTR151 Computer Science I (4), ART485 BFA Thesis Project (3), PHOTO300 Media Ethics (3), ART497 BFA Exhibition (1), ART496 Portfolio Development (2), ART487 Internship (1). With an additional 4 credits to be chosen with your advisor from ART, ARTH, ARCH, PHTO, DGME, COMM, JOUR, MDIA, VDEO or MRKT courses. Suggested electives include: JOUR465 Topics: Scriptwriting, BSAD355 Management & Organization, CPTR310 Database Application Programming.

PHOTOGRAPHY EMPHASIS
(Resides in the College of Technology)
The Photography Emphasis is recommended for those wishing to work in the creation of still or moving visual images. There are three portfolio tracks available: Commercial Photography, Documentary Video and Fine Art Photography. The degree encompasses elements of digital, commercial, and fine arts imaging, focusing on individual creativity and photo-journalism. The photography student will study the methods used to create effective and aesthetically pleasing imagery.

Commercial Photography Portfolio Track
The Commercial Photography track specializes in teaching students to run their own commercial studio or work as a photographer's assistant.

36 Total Credits: PHTO200 Advanced Photography I (4), PHTO220 Color Photography I (4), PHTO285 Studio (4), PHOTO300 Media Ethics (3), PHTO385 Advanced Studio (4), MDIA495 Portfolio Development (2), ART485 BFA Thesis Project (3), ART497 BFA Exhibition (1). With an additional 11 credits to be chosen with your advisor from ART, ARTH, ARCH, PHTO, DGME, COMM, JOUR, MDIA, VDEO or MRKT courses.

Documentary Video Portfolio Track
Students learn to design and integrate digital video and 3-D animation to produce creative advertising, documentary, promotional products, and TV graphics.

36 Total Credits: JOUR230 Media Writing (3), VDEO210 Digital Video Editing (3), VDEO320 Video Compositing (3), VDEO340 Video Shooting (3), VDEO465 Video Documentary (3), PHOTO300 Media Ethics (3), MDIA390 Internship (1) PHOTO200 Advanced Photography I (4), ART485 BFA Thesis Project (3), ART497 BFA Exhibition (1), ART496 Portfolio Development (2). With an additional 7 credits to be chosen with your advisor from ART, ARTH, ARCH, PHTO, DGME, COMM, JOUR, MDIA, VDEO or MRKT courses.

Fine Art Photography Portfolio Track
The Fine Art Photography track cultivates the individual voice and vision of the photography student and prepares them to sustain their professional lives as practicing artists.

36 Total Credits: PHTO200 Advanced Photography I (4), PHTO220 Color Photography I (4), PHTO285 Studio (4), PHOTO300 Media Ethics (3), PHTO385 Advanced Studio (4), MDIA495 Portfolio Development (2), ART485 BFA Thesis Project (3), ART497 BFA Exhibition (1). With an additional 11 credits to be chosen with your advisor from ART, ARTH, ARCH, PHTO, DGME, COMM, JOUR, MDIA, VDEO or MRKT courses.

Minor in Digital Media—21
DGME130 Intro to Digital Media (3), ART207 Basic Design (3), PHOTO115 Intro to Photography (4), DGME175 Digital Imaging (4), DGME225 Illustrator (4), DGME250 Web Design I (3)

Minor in Graphic Design—22
Recommended for students of communication, graphic arts, marketing, and architectural and landscape studies.

Required courses: ART104 Intro to Drawing (3), ART207 Basic Design (3), ART214 Intro to Graphic Design (3), ART310 Typography (3), one 400-level design class (3), ARTH245 History of Design (3), DGME175 Digital Imaging (4)

Minor in Photography—20
DGME175 Digital Imaging (4), PHTO115 or 116 Intro to Photography (4), PHTO200 Advanced Photography I (4), PHTO220 Color Photography I (4), PHOTO285 Studio (4).

Minor in Visual Art—22
Recommended for students interested in technology, the humanities, and the design areas.

Required courses: ART104 Intro to Drawing (3), ART105 Intro to Painting (3), ART107 Intro to Ceramics (3), ART207 Basic Design (3), ART106 Intro to Printmaking (3), PHOTO115 Intro to Photography (4), ARTH220 Language of Art (3)

Courses   (Credits)

See inside front cover for symbol code.

Art History, Theory, and Issues

ARTH220 $ (3)
Language of Art
Presents the elements of visual language and studies them in relationship to images of famous paintings, sculptures, and contemporary advertisements. Does not duplicate an art history course.

ARTH245 $ (3)
History of Graphic Design
This course surveys the pivotal events and achievements that led to the current state of graphic communication. The unceasing quest to give form to ideas is traced from the pictographs painted on cave walls to the latest imaginative designs. Through lectures, videotapes, discussions, presentations and research, students are introduced to the creative thinkers, important innovations and breakthrough technologies that have shaped the evolution of visual communication.

ARTH325 $ (3)
Prehistoric to Medieval Art
Examines the ancient images of non-Western and Western cultures as they are manifested in famous works of art and architecture.

ARTH326 $ (3)
Renaissance to Modern Art
A survey of selected Western and non-Western artists, techniques, and cultural eras from 1300 to 1945.

ARTH328 $ (3)
Artists of the Renaissance
A chronology and analysis of Italian masters from Giotto to Raphael, and northern masters from VanEyck to Rembrandt. A study of the importance of social and cultural influences impacting these artists and the contributions made through their art.

ARTH329 $ (3)
Nineteenth Century and Impressionism
A chronological study of the major artists influencing culture, primarily in France, from David to Cezanne in the movements of Neo-classicism, romanticism, realism, impressionism, and post-impressionism.

ARTH440 $ (3)
Art Since 1945
A study of selected artists associated with post-WWII Western culture, the critical schools they are associated with, and the major influences upon their work.

ARTH450 $ (3–6)
Art Study Tour
A pursuit of general cultural and artistic interests to be found abroad.

Visual Art

The department reserves the right to hold some student work until the termination of the spring student show. Students leaving the campus at the end of the semester must take their work with them. Because of minimal storage space, work and supplies remaining in the department after the close of the spring semester are removed and discarded.

ART104 $ (3)
Introduction to Drawing
A foundational course where basic drawing principles are introduced and observational abilities are developed. Standards of drawing, such as line, value, composition and perspective are explored using a variety of approaches, tools and media.

ART105   (3)
Introduction to Painting
An introduction to various painting techniques, principles of color, composition and materials. Objective subject matter is emphasized and the development of a basic visual vocabulary.

ART106 $ (3)
Introduction to Printmaking
Explores printmaking methods such as monoprint, wood cut, linoleum cut, etching and engraving, lithography, and screen printing. emphasis on technical-skills development and personal images.

ART107 $ (3)
Introduction to Ceramics
An introduction to working with clay and glazes for the creation of hand-built ceramic objects.

ART207 $ (3)
Basic Design
A study of the elements and organizational principles of 2-dimensional design.

ART209 $ (3)
3-D Design
An introduction to the principles of three dimensional design and sculpture media. Introduces students to a variety of tools and materials which help to develop 3-D expression.

ART214 $ (3)
Introduction to Graphic Design
A transition from design theory to design application as it relates to visual communication. A series of projects develops basic skills and familiarity with design process and the graphic design profession. Prerequisite: ART207.

ART304 $ (2–6)
Drawing
Students use many media and concentrate on individual methods of expression through drawing. Repeatable. Prerequisite: ART104.

ART305 $ (2–6)
Painting
Repeatable, advanced level painting course, with an in-depth study in the art and craft of painting, designed to expand one's visual vocabulary. Exploration in an area of painting practice; illustration, portrait, figurative, still life, landscape or conceptual. Prerequisite: ART105.

ART306 $ (2–6)
Printmaking
One of the major methods (relief, planographic, intaglio, stencil) may be selected for semester-long exploration. Anything over 3 credits in one semester needs permission of instructor. Repeatable. Prerequisite: ART106.

ART307 $ (2–6)
Ceramics
A systematic exploration of a particular area of ceramic practice. Subjects may include: wheel throwing, glaze formulation, various fir-

ing practices, raku, ceramic sculpture, exploring a form, or other assignments chosen by the professor. Repeatable. Prerequisite: ART107.

ART308 $ (2–6)
Sculpture
The expressive use of a range of materials through the skills of modeling, carving, and construction. Usually one medium is studied during the semester. Repeatable.

ART 310 $ (3)
Typography
An exploration of typographic structures terminology, methods, and visual problem solving. This studio course addresses typographic design as a practical form of visual communication. Prerequisites: ART207, 214.

ART380 (1–3)
Topics in Art
Courses cover specific topic areas in Art and Art History such as: African Arts, Asian Arts, Design, Egyptian Arts, Mesopotamian Art. Studio courses are also eligible.

ART430 $ (3)
Corporate Identity
This course focuses on the creation of effective corporate trademarks and logotypes. Prerequisites: ART207, 214.

ART431 $ (3)
Editorial Design
This course is concerned with the design of the page and the page sequence of books, periodicals and magazines through editorial concept, content, format, image and audience. Prerequisites: ART207, 214.

ART432 $ (3)
Corporate Design
This course is concerned with creating a brand and provides a basis for deciding the procedures and practices for corporate communication goals. Prerequisites: ART207, 214.

ART433 $ (3)
Advertising and Package Design
This course explores the many facets of print advertising and package design. Prerequisites: ART207, 214.

ART457 ♦ (4)
Art Methods: Elementary
Covers the process of teaching creativity and artistic expression to students at the elementary level. The focus is on understanding the developmental levels of creativity in children. Art is also integrated in the rest of the curriculum. Art projects are part of this course.

ART459 ♦ (4)
Art Methods: Secondary
Deals with teaching creativity and artistic expression to students at the secondary level. It covers the developmental levels of students and gives practical ideas for developing individual creativity. Project ideas are part of the course.

ART480 (4)
Practicum in Visual Art Education
Application of principles of art in education, and integrating various subjects into the art curriculum. An introduction to the curriculum of K-12 schools, including unique SDA curricular materials and Michigan Content Standards and Benchmarks. Field experience included in class meeting time. Prerequisites: ART457, 459.

ART485 (3)
BFA Thesis Project
This capstone course allows for the synthesis of the students' academic and studio work, developing an individual project proposal and culminating in a thoughtful presentation that demonstrates knowledge of specific issues, methods, and materials. Prerequisites: minimum of 24 credits in a portfolio track and permission of the instructor.

ART487 (1–3)
Internship
Supervised work experience with a design firm. 120 hours of work is required for each credit. Students must be a junior and have at least a 3.00 GPA in all BFA coursework. May be repeated up to 3 credits. Prerequisites: ART207, 214, 414

ART495 ♦ (1–4)
Independent Reading/Project
Independent study or senior exhibition and portfolio creation. Repeatable. Requirements vary.

ART496/MDIA496 (1–2)
Portfolio Development
This course focuses on students' job-seeking portfolios through lectures, demonstrations and studio work. Existing projects are refined and gaps are filled in new projects. All projects must meet the most professional standards, with emphasis on quality and job-related subject matter. Prerequisites: minimum of 24 credits in a portfolio track and permission of the instructor. Repeatable to 4 credits.

ART497 (1–3)
BFA Exhibition
Presentation of the capstone BFA thesis project in a gallery exhibition. May also include preparation for graduate school.

Digital Media and Photography

DGME120 $ (3)
Introduction to Web
An introductory to the field of web design.

DGME130 $ (3)
Introduction to Digital Media
An introductory survey of the discipline of digital media. Students are introduced to electronic publishing, basic printing principles, sound digitizing, vector and raster graphics, interactive multimedia, image acquisition and output, web publishing and e-mail. Understanding the Macintosh computer is also covered. Lab required. *Fall, Spring*

DGME165 $ (4)
Principles of Print Production
A study of print production that includes prepress concepts, digital printing, digital image capture, color management, and page imposition. *Fall*

DGME175 (4)
Digital Imaging
In this foundation course the student will begin to learn how to apply their creative vision within the boundaries of Adobe Photoshop. Emphasis is on creative and technical issues as they relate to the creation of visual work. Layers, adjustment layers, compositing methods, and restoration are explored. Technical proficiency, creative expression, and attention to detail are stressed. Prequisites: ART 207, DGME 130, PHTO 115 recommended.

DGME185   **$ (3)**
Desktop Publishing I
Students learn to produce publications on desktop computers, including: brochures, magazine covers, corporate stationery, book covers, etc. Course topics incorporate: effective page layout, basic color theory, monitor calibration, gray balance, tone compression, GCR and UCR, digital proofing, image acquisition, and final output. Applications of color theories and color separation are stressed. Lab required. Prerequisite: DGME175. *Fall*

DGME215   **$ (2)**
Digital Sound
An introduction to digital sound acquisition, manipulation and storage techniques. Students learn fundamentals of sound terminology, audio digitizing and nonlinear editing. Students will then apply this knowledge to various video, interactive and web applications. Lab required. Prerequisite: DGME130. *Fall, Spring*

DGME225   **$ (4)**
Digital Vector Graphics
A study of digital vector graphic imaging emphasizing graphic production for print, digital multimedia, and web publishing. Lab required. Prerequisite: DGME130 or equivalent. *Fall*

DGME250   **$ (3)**
Web Design I
This course covers introductory design and production for the web. Students will be instructed on how to design and adapt their content for this medium. Using various software applications, the student will learn to create fully functional web pages and sites including text and graphics. Hyper-Text Markup Language (HTML) coding, Extensible Hyper-Text Markup Language (XHTML), Cascading Style Sheets (CSS), and site structure will be covered in this course. Prerequisite: DGME130 or INFS 110. *Fall*

DGME335   **$ (4)**
Flash & Action Scripting
Flash is a proprietary, robust graphics animation/application development program used to create and deliver dynamic content, media (such as sound and video), and interactive applications over the web via the browser. Actionscript programming incorporates usability features, such as respecting the browser's font size and allowing blind users to use screen readers. Actionscript 2.0 is an Object-Oriented language, allowing the use of CSS, XML, and the design of class-based web applications. Prerequisite: ART104; DMGE130 or equivalent. *Spring*

DGME350   **$ (3)**
Web Design II
An advanced Web standards study of XHTML and CSS for screen and handheld Web design; a look at how the essential part of a professional Web designer's job is to understand the fundamentals of meaningful semantic markup and designing with CSS. The student will develop strong design skills to gain an excellent grasp of visual, interaction and usability design principles through typography, graphics, color, layout, and other factors in a web specific way. Students will work on projects in-class and long-term out-of-class projects. Additionally, PHP and Javascripting will also be introduced to help better organize and add dynamic elements to the students work. Prerequisite: DGME250. *Spring*

GRPH345   **$ (4)**
Advanced Screen Graphics
An in-depth study on making process, simulated process, index and spot separations for screen printing. Other decorating methods will be explored such as transfers, foil, athletic numbering, glow-in-the-dark, puff and UV. Non- textile applications will also be explored such as decorating substrates like plastics (binders, CDs, etc.) and glass (simulated etch, etc.) and many other substrates. Prerequisite: DGME165. *Spring*

MDIA194/494   **(1–4)**
Project Course/Independent Study
Development of a skill or independent study in a given area by working independently under the supervision of an instructor. Repeatable to 12 credits. Prerequisite: Permission of instructor. *Fall, Spring*

MDIA390   **(1–4)**
Internship
On-the-job internship experience for students seeking industrial experience which cannot be simulated in a classroom setting. A range of 120–150 clock hours of work are required for each credit. Selected in consultation with the advisor. May be repeated.

MDIA275/485   **(1–4)**
Topics in:_____
Repeatable in various areas.

MDIA496/ART496   **(1–2)**
Portfolio Development
This course focuses on students' job-seeking portfolios through lectures, demonstrations and studio work. Existing projects are refined and gaps are filled in new projects. All projects must meet the most professional standards, with emphasis on quality and job-related subject matter. Prerequisites: minimum of 24 credits in a portfolio track and permission of the instructor. Repeatable to 4 credits.

MDIA597   **(1–3)**
Independent Study
Individual study or research under the direction of an instructor. Repeatable to 6 credits. Prerequisite: Permission of department chair.

PHTO115   **$ (4)**
Introduction to Photography
Basic introduction to the principles of the camera and darkroom techniques with consideration toward composition, psychological, and aesthetic attitudes in black-and-white photography. Lab required. *Fall, Spring*

PHTO116   **$ (3)**
Introduction to Digital Photography
Students are introduced to photography through the use of digital tools. Digital SLRs and Quadtone printers are used to explore the technical and aesthetic issues involved in the process of making images. Consideration will be given to digital workflow, managing data, and creating visually appealing photographs. Lab required. *Fall, Spring*

PHTO200   **$ (4)**
Advanced Photography I
Develops the art of photographic perception and use of photography as a visual language. Emphasizes craftsmanship and awareness of tools available, as well as aesthetics, and the art of seeing creatively. Developing skills beyond introductory camera usage is emphasized. Lab required. Prerequisite: PHTO115. *Fall, Spring*

PHTO210   **(3)**
History of Photography
Historical study of significant contributors in the development of photography, and their influence on art and society. *Fall, Spring*

PHTO220 $ (4)
Color Photography I
Designed to acquaint students with color materials, their handling and exposure. Aesthetic and communicative aspects of color photography are stressed in producing visually effective color transparencies. Lab required. Prerequisite: PHTO115 or by permission of instructor. *Fall*

PHTO285 $ (4)
Studio
Study of lighting techniques in standard-equipped studio, emphasizing portraiture, commercial illustration, and experimental techniques in black-and-white and color mediums. Lab required. Prerequisite: PHTO200. *Spring*

PHTO300 (3)
Media Ethics
An exploration and discussion of the media and its effect on society, covering such issues as body image, violence, politics, etc. Students study how to recognize the way moral values of media professionals influence themselves and society. *Spring*

PHTO305 (4)
Alternative Photographic Processes
This course is designed to provide the advanced student with additional methods of creative expression. The Cyanotype and VanDyke Brown processes will be learned as well as various methods of image transfer. Creative expression and technical proficiency in these techniques will be emphasized. The creation of a portfolio with strong visual unity will be a significant part of the class. Prerequisites: DGME175, PHTO285.

PHTO320 $ (4)
Color Photography II
An image-oriented course, drawing on the student background in the use of color comprehension, photographic technical and aesthetic understanding, and working knowledge of emulsion and digital photography. Information in this class is for the sole purpose of comprehensive color image. Lab required. Prerequisites: DGME175, PHTO220. *Fall*

PHTO326 (3)
Business of Photography
After taking most of our photo classes many ask, "Now how do I make a living as a photographer?" The purpose of this course is to teach you how to get paid fairly for the photography you love doing. You will learn that charging for photography is much different than most businesses because it is based on usage and not time and materials.

PHTO365 (4)
Advanced Digital Imaging
In this course the student will build a deeper understanding of how to use software to create compelling visual work. Emphasis is on learning how to finely control the variables available within Adobe Photoshop and other related software. The student will learn how to use alpha channels, master complex masking, and understand critical color theory as they create a body of work that further defines a unique personal vision. Repeatable to 8 credits. Lab required. Prerequisites: ART207, DGME175, PHTO115.

PHTO385 $ (4)
Advanced Studio
An individual approach to an advanced level of studio photography. Students choose a concentration in the following areas: Portraiture, People/Fashion, Still-Life, Advertising/Illustration, and Location Photography. This course is designed specifically to learn visual concepts and solve visual problems of the commercial photo industry. Repeatable to 12 credits. Lab required. Prerequisite: PHTO285. *Fall, Spring*

PHTO400 $ (4)
Digital Photographic Processes
This class explores methods of digital photographic manipulation while emulating traditional technique. A high level of photographic output and the art of seeing will be stressed. Digital capture, processing RAW files and fine manipulation of the digital file will also be highlighted. Lab required. Prerequisites: PHTO220, 365. *Fall*

PHTO410 $ (4)
Advanced Photography II
A course designed for the advanced photographer to investigate personal potential in visual exploration, experimentation, and technical excellence. Discussion involves expanding personal vision and exploring new techniques to achieve goals. Repeatable to 8 credits. Prerequisite: PHTO285. *Spring*

PHTO420 (1–4)
Documentary Photography
Documentary photography provides students with a unique opportunity to grapple with documenting images that tell a story about a particular endeavor. Students will be encouraged to go much further in-depth with a specific project then they have ever done before. The class hours will be devoted to lectures, and critiquing of assignments. Labs will consist of carrying out the semester-long project, photographing assignments, developing film/digital, printing for critiques, and mounting images for the final project.

PHTO425 (4)
Travel Photography
Designed to be done in conjunction with on-location photography, and provides a background in the specific needs related to travel. Photographing people and their land in foreign environments is emphasized. Unique materials and equipment are discussed as they relate to travel photography. Repeatable to 8 credits. Prerequisite: PHTO115.

VDEO130 $ (2–3)
Introduction to Video
An introductory course in videography emphasizing the terminology, aesthetics, and methods of video production. PHTO115 recommended. Lab required. *Fall*

VDEO210 $ (3)
Digital Video Editing
An introductory class covering the fundamental techniques and concepts of nonlinear editing. Students explore the process of video editing from conceptualization to final output. Emphasis on sequencing and continuity, use of visual effects, color correction, audio editing, media management, narration and industry terminology. Lab required. Prerequisites: DGME175, VDEO130. *Fall*

VDEO320 $ (3)
Video Compositing
An introductory course covering the essential components in video compositing. Students learn how to create innovative visual effects and motion graphics for video. Emphasis on text anima-tion, keyframing, masks, alpha channels, 3-D compositing. rendering, application integration, advanced visual and artistic effects. Lab required. Prerequisites: DGME215, VDEO210.

VDEO340   **$ (3)**
Video Shooting
An advanced study in digital video, exploring professional level cameras, lighting, sound and other equipment necessary to make good video, aesthetic issues of creating visual and audio stories, and developing skills and knowledge beyond an introductory level. Lab required. Prerequisites: ART214; JOUR230; VDEO130, 210. *Spring*

VDEO360   **$ (4)**
3-D Imaging
A study of basic 3-D modeling principles and techniques. Students learn 3-D modeling terminology and how to create 3-dimensional models using polygonal, nurbs, and subdivision techniques. Students also learn basic lighting and surfacing. Lab required. Prerequisites: ART104; DGME175. *Fall*

VDEO370   **$ (4)**
3-D Animation
A study of 3-D animation techniques implementing key frame, forward and inverse kinematics, dynamics, lighting, paint effects, rendering and more. Lab required. Prerequisites: DGME215; VDEO210, 360. *Spring*

VDEO390   **$ (3)**
DVD Authoring/Design
A course emphasizing production of interactive DVD-Video, DVD authoring, work flow, story boarding, navigation, menu design, bit budgeting, video and audio encoding, DVD video navigational structures, web linking, proofing, pre-mastering, and recording to DVD-R. Lab required. Prerequisite: DGME347. *Spring*

VDEO465   **$ (3)**
Video Documentary
Study and application of documentary storytelling techniques. Students will explore the technical and creative use of digital video cameras in documentary filmmaking. Emphasis on interview techniques, story selection and structure. One lab required. Prerequisites: VDEO130, 210, 340. *Fall*

ENGINEERING AND COMPUTER SCIENCE

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Gunnar Lovhoiden
Boon-Chai Ng
Nadine Shillingford
Stephen Thorman
Roy Villafane

Academic Programs	Credits
BS: Computing	40
Computer Science Emphasis	
Software Systems Emphasis	
Minor in Computing	20
BS in Engineering	
Electrical and Computer Engineering Emphasis	66
Mechanical Engineering Emphasis	66
Minor in Engineering	20
MS: Software Engineering	32
MSA: Engineering Management	
See the School of Business Administration	

Undergraduate Programs

Computing

Two emphases are available in Computing—**Computer Science** and **Software Systems**.

   Computer Science focuses on a study of computing as well as on its role in an application area. Areas of interest include artificial intelligence, compilers, computer architectures, computer graphics, computer networks, operating systems, program development, and analytical theory. A degree in computing with the Computer Science emphasis prepares students for graduate study, employment in computer systems/networks, administration/development, software development/maintenance, and for careers in education.

   Software Systems is an applied study of computing, focusing on the development and maintenance of software in an application area. A minor in an application area is included as part of the degree. Typical minors might include one of the sciences, behavioral science, or business. Supervised "real-world" projects are a requirement for this degree. A degree in Computing with the Software Systems emphasis prepares students for employment in developing and maintaining commercial applications and for graduate studies in applied computing such as software engineering.