DIGITAL IMAGING

Overview - Digital Imaging is an advanced visual arts class to helps students effectively use a digital camera as a source for images that can be effectively represented, enhanced, corrected, or manipulated in the digital realm. To begin on a path to understanding the art and science of photography students will be expected to provide and use a dedicated digital camera for the class. Students are not expected to have any particular skill or experience in photography; only a desire to gain proficiency with the equipment and processes involved in photography and a willingness to understand the tools, techniques, and career opportunities associated with the production of images in the optical and digital realm.

Modern cameras are sophisticated optical computers, yet their functions and controls are based on the historically established needs of photographers in the acquisition and control of the light entering a lens. As a result this course consists of two necessary components. Firstly students need to work as technicians to understand the electromechanical components of a camera's controls as well as the scientific aspects of the visible light reflected off a subject. Secondly the student needs to approach the medium as an artist who is aware of their goals when acquiring a photo. This includes the control of the compositional components of selection, framing, and acquisition of an image and continues through the entire production process until the photograph is displayed for its intended audience.

Students will practice using the language of both artists and scientists to evaluate and describe their own work. In addition they will analyze, orally and in writing, the work of other artists to better understand the creative process and how it informs their own work.

Rationale - Photography is not yet 200 years old, and yet it has been a part of many major changes in the art world. Digital imaging, of which photography is a part, in the 21st century is everywhere. The acquisition and sharing of images happens so frequently that we take it for granted, yet we still can be moved to thought emotion or action by an image. Images we see influence virtually every aspect of our lives including the products we buy, the candidates we vote for, the places we live or visit, or the schools we attend. The images we create allow us to share important events with family and friends: we are immersed in images that mostly created and manipulated in the digital realm. This class will help students create better images for themselves and be more discerning of the images that surround them.

Grades: 9-12 ***Duration***: 1 Trimester - 1 Credit ***Prerequisites:*** Successful Completion of Design
Equipment Required: A working digital Camera

Topics of Study:	Technical and Scientific aspects of photography	4 weeks
	Acquiring quality images with your camera	10 weeks
	Working with images in Adobe PhotoShop ™	10 weeks

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Course Title: Digital Imaging **Topic of Study: Technical and Scientific Aspects of Photography** **Page 1 of 4**
Time: About 4 weeks (non-contiguous) **Grade Level: 9-12**

Standards & Benchmarks	Essential Questions and Learning Targets	Key Vocabulary and Concepts	Activities and Projects Evidence of Understanding	Resources
ART.VA.I.HS.1 Apply acquired knowledge and skills to the creative problem solving process. ART.VA.I.HS.2 Intentionally use art materials and tools when applying techniques and skills to communicate ideas. ART.VA.I.HS.3 Demonstrate understanding of organizational principles and methods to solve specific visual arts problems. ART.VA.I.HS.5 Responsibly and safely manage materials and tools. ART.VA.II.HS.2 Create artwork using materials and techniques with skill so that personal intentions are carried out. ART.VA.IV.HS.2 Describe the functions and explore the meaning of specific art objects within varied cultures, times, and places. ART.VA.V.HS.7 Analyze the impact of visual culture on society.	What is light? How does the nature of light determine how we make images? How does a digital camera acquire an image? How do various controls and functions on a camera assist an artist in controlling their art? How do photographers make the ordinary things of our world into extraordinary images?	Frequency/Wavelength Degrees Kelvin Back Light Aperture and f-Stop Shutter and Shutter Speed Angle of View Aspect Ratio CCD and CMOS Color/White balance JPG, TIF, PSD, GIF, RAW Lossy/Lossless Compression Depth of Field Exposure Compensation SD card SD card reader Flash: (auto, forced, bounce, fill, red eye, ring flash) Hot Shoe ISO/ASA Lens: (fixed, zoom, telephoto, wide angle, macro) Metering:(spot, weighted, evaluative, facial recognition) Multiple Exposure Noise - Pixel/Pixelation Overexposure/Underexposure Panoramic Mode Preset Exposure Modes Resolution Single Lens Reflex Mirrorless Reflex Tripod Viewfinder White Balance Histogram	Students will be able to explain the nature of light as it relates to physics and photography. Students will be able to locate and identify the controls and functions. Students will produce photographs that use various modes and functions on their camera to demonstrate their understanding of how the modes and functions affect their images. Students will be able to demonstrate verbally and in writing a mastery of the technical aspects of cameras and photography. Students will demonstrate how the controls on a camera can assist in compensating for the physical and natural consequences of light. Students will consistently demonstrate the ability to use visual elements and organizing principles the elements in their photographic compositions.	the student's own working digital camera with batteries and "storage card" the camera's technical literature various physical and online resources for instruction and demonstration. a class lab of computers with a work station and the Adobe ™ Creative Suite software for each student a photo quality color printer

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ART.VA.I.HS.1 Apply acquired knowledge and skills to the creative problem solving process. ART.VA.I.HS.2 Intentionally use art materials and tools when applying techniques and skills to communicate ideas. ART.VA.I.HS.3 Demonstrate understanding of organizational principles and methods to solve specific visual arts problems. ART.VA.I.HS.5 Responsibly and safely manage materials and tools. ART.VA.II.HS.1 Identify, define problems, and reflect upon possible visual solutions. ART.VA.II.HS.2 Create artwork using materials and techniques with skill so that personal intentions are carried out. ART.VA.II.HS.3 Apply organizational principles and methods to create innovative works of art and design products. ART.VA.II.HS.4 Apply knowledge and skill to symbolize the essence of an idea. ART.VA.II.HS.6 Use emergent technologies and materials to create artistic products that demonstrate knowledge of context, values, and aesthetics. ART.VA.V.HS.1 Design creative solutions that impact everyday life. ART.VA.V.HS.2 Explore and understand the variety of art and design careers. ART.VA.V.HS.3 Explore and understand the application of the creative process throughout career pathways.	What makes a good photograph? What does photography do that is similar to and different from traditional artistic mediums? How can an understanding of the elements create extraordinary images? How can we employ the capabilities and limitations of our camera to acquire the best possible images? How can we use our composition skills and the camera to reduce the time required to edit an image?	Rule of thirds **The Elements of Design:** Line, Value, Color, Texture, Shape, Form, Space **The Principles of Design:** Balance, Variety, Movement, Rhythm, Harmony, Emphasis, Proportion Framing Aspect Ratio Vertical Horizontal Depth of Field	Acquire, Edit, Assemble, and Print series of images that demonstrate the student's understanding and control of: Elements Principles Exposure Compensation White Balance Backlighting Aperture Shutter Speed Metering Macro Various selectable modes and functions present on the student's camera. Student's will produce extraordinary: Portraits Landscapes Macro Images Still Life Be able to collaborate with other photographers on a project. Find the extraordinary in their ordinary, everyday environment.	the student's own working digital camera with batteries and "storage card" a class lab of computers with a work station and the Adobe ™ Creative Suite software for each student a color photo quality printer paper and supplies for printing, mounting, and displaying student work.

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ART.VA.I.HS.1 Apply acquired knowledge and skills to the creative problem solving process. ART.VA.I.HS.2 Intentionally use art materials and tools when applying techniques and skills to communicate ideas. ART.VA.I.HS.3 Demonstrate understanding of organizational principles and methods to solve specific visual arts problems. ART.VA.I.HS.4 Exhibit, present, and publish quality works of art. ART.VA.I.HS.5 Responsibly and safely manage materials and tools. ART.VA.II.HS.1 Identify, define problems, reflect upon visual solutions. ART.VA.II.HS.2 Create artwork using materials and techniques with skill so that personal intentions are carried out. ART.VA.II.HS.3 Apply organizational principles and methods to create innovative works of art and design products. ART.VA.II.HS.4 Apply knowledge/skill to symbolize an idea's essence ART.VA.II.HS.5 Reflect, articulate, and edit the development of artwork throughout the creative process. ART.VA.II.HS.6 Use emergent technologies/materials to create artistic products that demonstrate knowledge of context, values, and aesthetics. ART.VA.II.HS.7 Create collaboratively to resolve visual problems. ART.VA.II.HS.8 Explore social and global issues through the application of the creative process. ART.VA.III.HS.1 Analyze and describe the formal characteristics of a work of art or design. ART.VA.III.HS.2 Describe how organizational principles are used to elicit emotional responses. ART.VA.III.HS.3 Critically observe a work of art to evaluate and respond to the artist's intent using art vocabulary and terminology. ART.VA.III.HS.4 Evaluate the quality & effectiveness of one's artwork. ART.VA.III.HS.5 Recognize and understand the relationships between personal experiences and the development of artwork. ART.VA.V.HS.1 Design creative solutions that impact everyday life.	What are raster and vector graphic programs and how can they most effectively be used? How can we effectively input, manage, assemble and produce a digital image based on a photographic file? How can the editing tools help us create images that are effective in their use of the elements and principles of design? Students will learn their way around photo editing software so they can realize their artistic goals.	Vector Raster CMYK RGB Pixel Point Layers Mask Opaque Transparent Feathering Formatting Bleeds Aspect Ratio Cropping Straightening Mid-tones Shadows Intensity Saturation Contrast Brightness Threshold Filters Sharpen Lens Correction	Produce Extraordinary: Portraits Landscapes Macro Images Still Life Be able to selectively desaturate, colorize, and color balance photos to serve the artist's purpose and enhance their meaning. Be able to create an effective montage from a variety of different images. Be able to effectively use photography in a commercial art application. Be able to create photographics that motivate. Be able to collaborate with other photographers on a project. Find the extraordinary in their ordinary, everyday environment.	the student's own working digital camera with batteries and "storage card" a class lab of computers with a work station and the Adobe ™ Creative Suite software for each student a color photo quality printer paper and supplies for printing, mounting, and displaying student work.

VISUAL ARTS DEPARTMENT

Course Title: Digital Imaging **Topic of Study: Analysis of Photography and Photographs**

Time: About 10 weeks (non-contiguous) **Grade Level: 9-12**

Standards & Benchmarks	Essential Questions and Learning Targets	Key Vocabulary and Concepts	Activities and Projects Evidence of Understanding	Resources

ART.VA.III.HS.1 Analyze and describe the formal characteristics of a work of art or design. ART.VA.III.HS.2 Describe how organizational principles are used to elicit emotional responses. ART.VA.III.HS.3 Critically observe a work of art to evaluate and respond to the artist's intent using art vocabulary and terminology. ART.VA.III.HS.4 Evaluate the quality and effectiveness of one's artwork. ART.VA.III.HS.5 Recognize and understand the relationships between personal experiences and the development of artwork. ART.VA.IV.HS.1 Observe and describe artwork with respect to history and culture. ART.VA.IV.HS.2 Describe the functions and explore the meaning of specific art objects within varied cultures, times, and places. ART.VA.IV.HS.3 Analyze the correlation between art, history, and culture throughout time. ART.VA.IV.HS.4 Use knowledge of art and design history to inform personal artwork. ART.VA.V.HS.2 Explore and understand the variety of art and design careers. ART.VA.V.HS.3 Explore and understand the application of the creative process throughout career pathways. ART.VA.V.HS.4 Identify commonalities, differences, and connections between the art disciplines. ART.VA.V.HS.5 Recognize the role of art across the academic curriculum. ART.VA.V.HS.6 Understand artistic knowledge as an important tool for successful living in the 21st century. ART.VA.V.HS.7 Analyze the impact of visual culture on our society. ART.VA.V.HS.8 Identify the role visual arts play in enhancing civic responsibility and community.	How is an artwork organized? How do the images catch the viewer's eye and make the image effective? What are career possibilities in Digital Imaging? How have images influenced our society and culture? How does intentionality play a key role in Digital Images?	Continued application of course concepts and vocabulary.	Students will analyze their own work as well as the work of others orally and it writing with attention paid to answering, explaining, and describing: The elements and principles used to organize the work. What are the artist's intentions? How does history and society influence the work?. What the work tells the viewer about who we are as a people? What prior experience does the viewer need to bring to the process of viewing/understanding the work? What does the artist want the viewer to take away from the work? How did the work influence others?	the student's own working digital camera with batteries and "storage card" a class lab of computers with a work station and the Adobe ™ Creative Suite software for each student a color photo quality printer paper and supplies for printing, mounting, and displaying student work.