

Secaucus
Board of
Education

Computer Graphics 1

Course Code: 8225

Fine Arts



Born on January 2017

Aligned to the NJSLS - Fine and Performing Arts (2014), ELA (2016), Technology (2014), and 21st Century Life and Career (2014)

Adopted by the Secaucus Board of Education on January 19, 2017

District Equity Statement

The Board of Education directs that all students enrolled in the schools of this district shall be afforded equal educational opportunities in strict accordance with the law. No students shall be denied access to or benefit from any educational program or activity or from a co-curricular or athletic activity on the basis of the student's race, color, creed, religion, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, gender identity or expression, socioeconomic status, or disability. The Board directs the Superintendent to allocate faculty, administrators, support staff members, curriculum materials, and instructional equipment supplies among and between the schools and classes of this district in a manner that ensures equivalency of educational opportunity throughout this district. The school district's curricula in the following areas will eliminate discrimination, promote mutual acceptance and respect among students, and enable students to interact effectively with others, regardless of race, color, creed, religion, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, gender identity or expression, socioeconomic status, or disability:

1. School climate/learning environment
2. Courses of study, including Physical Education
3. Instructional materials and strategies
4. Library materials
5. Software and audio-visual materials
6. Guidance and counseling
7. Extra-curricular programs and activities
8. Testing and other assessments.

Excerpt from Secaucus Board of Education, Policy 5750, Edited September 2016

Course Description

Prerequisite: Applied Computer Concepts and teacher recommendation.

In this course, students will receive a practical introduction to the applied art of computer graphics and graphic design. Through the presentation of practical design assignments, emphasis is placed on conceptual thinking and creation of original and personal solutions through the student's use of photoshop. Each assignment is designed to enhance the students' abilities to enhance themselves visually. The wide range of assigned projects and concepts will help improve artistic techniques as students develop their own artistic styles. They will also learn about typography and how to design, in addition to what makes good design.

Interdisciplinary Connections

NJSLS – Technology:

- 8.1.12.A.1 Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.
- 8.1.12.A.2 Produce and edit a multi-page digital document for a commercial or professional audience and present it to peers and/or professionals in that related area for review.
- 8.1.12.D.1 Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work.

NJSLS – Mathematics:

- G-CO.12 Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.

- G-MG.3 Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

NJSLS – ELA:

- RI.9-10.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).
- W.9-10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
- W.9-10.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically.
- W.9-10.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
- W.9-10.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.

21st Century Life and Careers:**Career Ready Practices**

Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study. The career ready practices directly related to this ‘Silk Screening’ course are:

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.

- CRP4. Communicate clearly and effectively and with reason.
- CRP5. Consider the environmental, social and economic impacts of decisions.
- CRP6. Demonstrate creativity and innovation.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP10. Plan education and career paths aligned to personal goals.
- CRP11. Use technology to enhance productivity.
- CRP12. Work productively in teams while using cultural global competence

Course Modifications (ELLs, Special Education, Gifted and Talented)

The course instructor will determine, with the assistance of guidance counselors, teacher assistant/aides, and/or special education teachers, what modifications will be made for his/her students. Such examples of modifications can include, but not be limited to:

- Extended time as needed
- Modification of tests and quizzes
- Preferential seating
- Alternative/Formative assessment (projects)
- Effective teacher questioning (ranging from simple recall to higher order critical thinking questions)
- Supplemental materials
- Cooperative learning
- Teacher tutoring
- Peer tutoring
- Differentiated Instruction

Unit 1 - Becoming Familiar with Computer Graphics		
Standards - NJSLS Fine Art: 1.3.12.D.5, 1.4.12.A.3		
Essential Questions	Enduring Understandings	Activities, Investigation, and Student Experiences
<p>What is Computer Graphics?</p> <p>What is its role in our daily lives?</p> <p>How has the medium changed your view of the world?</p> <p>Will computer-generated images ever going to replace the view of art as traditionally held?</p> <p>How does society and culture influence design?</p>	<p>The introduction of computers and graphic software, as well as, improvements in technology, hardware, and software applications are changing the concept of an art studio. They are changing how we create as artists.</p> <p>Just as the introduction of oil paints in tin tubes in the 19th Century, revolutionized landscape painting forever, so has the image-editing software changed art production.</p>	<p>A. Students will be introduced, thru teacher selection, previously created student works of art.</p> <p>B. Students will view artwork adapted thru software.</p> <p>C. Students will discuss the differences of creating art using traditional art media and new technology available to artists.</p> <p>D. Students will be surveyed regarding use of personal computers, social media, and software applications.</p> <p>E. Discussion of the power of graphic images in their lives.</p> <p>F. Art terms (vocabulary)</p> <p>G. Artist lectures on relevant designers, past and present</p> <p>H. Guest speakers from the industry</p>
Content Statements	<p>How will computer art production change us as artists and how will it affect the audience we reach with our artistic expression?</p> <p>What makes good design?</p> <p>What are the different avenues of graphic design?</p>	
<p>Computer Art is an elective course. It integrates standards from the New Jersey Student Learning Standards for the Visual and Performing Arts, Technology Literacy, and other disciplines.</p>		

Assessments	
Feedback: the student will have the ability to discern differences in art mediums and art styles.	
Equipment Needed -Computer with Photoshop CC 2015, Internet and Network Access, Interactive Whiteboard, Flash drive.	Teacher Resources: PowerPoint of previously produced graphics, Google Docs Survey handout form to be completed by the students.

Unit II - Introduction to Photoshop CC 2015 Software		
Standards - NJSL Technology: 8.1.12.A		
Essential Questions	Enduring Understandings	Activities, Investigation, and Student Experiences
Can the students learn to use the software provided to create artwork?	This unit of study will focus on individual student growth and development of technical and manipulative skills.	<p>A. Customizing Photoshop. Students will learn how to change preferences and to configure the Photoshop CC 2015 workspace.</p> <ol style="list-style-type: none"> 1. Introduction/Open a document 2. Accessing Tools and Commands. 3. Setting Preferences. 4. Assigning Keyboard Shortcuts. 5. Creating Custom Workspaces. 6. Customizing Tools with Presets. 7. Review. <p>B. Managing Documents. Students will learn how to open, create and save files. They will learn how to locate files. They will learn how to view and sort files in the File Browser application.</p> <ol style="list-style-type: none"> 1. Introduction 2. Resolution, Color Mode, and Sizing 3. Creating Images. 4. Saving Files/Flash Drives and Server 5. Viewing and Opening Images with the File Browser. <ol style="list-style-type: none"> a) Managing Files with the File Browser.
<p>Content Statements</p> <p>Students will be introduced to Photoshop CC 2015's work area. They will learn how to access the basic tools located in the Toolbox, the Menu Bar, Palettes and Options.</p>		
Assessments		
<p>Formative Assessment Questions</p> <p>Classroom participation</p> <p>Class discussion.</p> <p>Timely completion of assigned work.</p> <p>Summative Assessments</p>		

	<ul style="list-style-type: none">b) Automating Tasks in the File Browser.6. Working with Metadata and Keywords.7. Fixing Mistakes.8. Review. <p>C. Viewing Documents. Students will learn where to view and how to handle an open file in the document workspace. They will learn to move an image and its canvas and crop an image and to access document information.</p> <ul style="list-style-type: none">1. Introduction.2. Controlling Image Magnification.3. Navigating the Document Window.4. Displaying an Image in Multiple Windows.5. Viewing Image Information.<ul style="list-style-type: none">a) Changing Screen Display Modes.b) Changing Canvas Size.c) Cropping an Image.d) Changing Image Size.e) Review. <p>D. Submitting work. Students will learn how to submit work digitally to shouble.com in correct file format.</p>
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Equipment Needed -Computer with Photoshop CC 2015, Internet and Network Access, Interactive Whiteboard, Flash drive.

Teacher Resources: Demonstration of software applications by teacher.
Google Docs on the internet.

Cluster: Unit III- Understanding Design: Elements and Principles of Design		
Standards - NJSL Fine Art: 1.3.12.D.2, 1.3.12.D.4, 1.3.12.D.5, 1.4.12.A.2		
Essential Questions	Enduring Understandings	Activities, Investigation, and Student Experiences
Can the students the principles of design to create successful designs?	Students will learn to customize the workspace for tasks.	<p>A. Choosing and Using Color. The students will learn to set and manage the Foreground and Background colors of the Photoshop CC 2015 document using the available tools and palettes.</p> <ol style="list-style-type: none"> 1. Introduction. 2. Color Management Simplified. <ol style="list-style-type: none"> a) Using RGB. b) Using CMYK. 3. Managing Color for Print. 4. Setting Foreground and Background Colors. <ol style="list-style-type: none"> a) Choosing Colors using Color Picker. b) Choosing Colors using Color Palette. <ol style="list-style-type: none"> (1) Using Swatches. (2) Using Styles. (3) Using Numeric Values. 5. Selecting and Changing Color with the Replace Color Adjustment. 6. Review. <p>B. Painting and Filling with Pixels. The students will learn the pixel-based filling and painting</p>
Content Statements	Students will learn the elements and principles of design and how to manipulate them.	
Using the painting and drawing tools will be explored to build the student's knowledge base and skills.	Students will learn how to transform an object to enhance their layouts and design.	
Assessments		

<p>Formative Assessment Questions Classroom participation Class discussion. Timely completion of assigned work. Summative Assessments</p>	<p>applications. They will learn how to change brush preferences and to edit gradient and pattern fills.</p> <ol style="list-style-type: none">1. Introduction.2. Filling a Layer.<ol style="list-style-type: none">a) Working with Pixels and Bitmapped Images.b) Filling the Artwork on a Layer.c) Filling Selected Artwork.d) Filling with the Paint Bucket Tool.3. Filling with a Pattern.<ol style="list-style-type: none">a) Defining and Applying a Custom Pattern.b) Using the Pattern Maker.4. Using the Gradient Tool.<ol style="list-style-type: none">a) Creating a Custom Gradient.5. Exploring the Brushes Palette.<ol style="list-style-type: none">a) Using Brush Options.b) Defining a Brush.c) Using Brush Settings on the Options Bar.d) Stroking.e) Erasing.6. Review. <p>C. <u>Drawing with Vectors.</u> Students will learn to use the vector-based Pen and Shape tools. They will learn to use Paths, Shapes and Selections.</p>
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	<ol style="list-style-type: none">1. Introduction.2. Introduction to Vector Graphics. 2015.3. Drawing with the Pen Tool.4. Editing Paths.<ol style="list-style-type: none">a) Tracing a Path with the Freeform Pen Tool.b) Stroking and Filling a Path.c) Copying a Path between Documents.d) Converting a Path to a Selection.5. Drawing a Geometric Shape with a Shape Tool.<ol style="list-style-type: none">a) Using Custom Shapes.6. Review.
Equipment Needed -Computer with Photoshop CC 2015, Internet and Network Access, Interactive Whiteboard, Flash drive.	Teacher Resources: Demonstration of software applications by teacher. Google Docs Former Student Work

Unit IV- Image Editing		
Standards - NJSL Fine Art: 1.3.12.D.2, 1.3.12.D.4, 1.3.12.D.5, 1.4.12.A.2		
Essential Questions	Enduring Understandings	Activities, Investigation, and Student Experiences
Can the students use computer graphics software to edit and manipulate images?	<p>Students will learn how to use the most important aspect of the Photoshop CC 2015 program manipulating layers.</p> <p>Students will learn how to use and reuse selections to modify and edit.</p> <p>Students will learn to create special effects using decorative and functional filters in the menu</p>	<p>A. Selecting. Students will learn the various tools available for selection. They will learn how to use and reuse selections to modify and edit.</p> <ol style="list-style-type: none"> 1. Introduction. 2. Selecting Geometric Forms with the Marquee Tools. 3. Moving and Copying Selections. <ol style="list-style-type: none"> a) Using the Lasso Selection Tools. 4. Working with Masks <ol style="list-style-type: none"> a) Refining a Selection in Quick Mask Mode. 5. Selecting by Color with the Magic Wand Tool and Color Range Command. 6. Modifying and Transforming Selections. <ol style="list-style-type: none"> a) Creating Hard- and Soft-Edged Selections. 7. Saving and Loading Selections as Alpha Channels. 8. Using the Extract Feature. 9. Review. <p>B. Using Layers. Students will learn how to use the most important aspect of the Photoshop CC 2015 program. They</p>

		<p>will learn how to use layers for editing, and selection, independent of all other layers in the document and to link and adjust layers.</p> <ol style="list-style-type: none"> 1. Introduction. 2. Working with Layers Palette <ol style="list-style-type: none"> a) Creating Layers. b) Converting a Background Layer. c) Selecting Layers. 3. Changing Layers. <ol style="list-style-type: none"> a) Changing Layers Visibility. b) Locking Layer Properties. c) Changing Layer Opacity. 4. Using Layer Comps. 5. Linking Layers. <ol style="list-style-type: none"> a) Organizing Layers in Layer Sets. b) Adding a Nested Layer Set. 6. Editing with Adjustment Layers. 7. Using Fill Layers. 8. Review. <p>C. Compositing Images. The students will learn to use the more advanced tools Photoshop CC 2015 to create composite images from multiple layers.</p> <ol style="list-style-type: none"> 1. Introduction. 2. Making Images Compatible. 3. Joining Images with Layer Masks. 4. Combining a Vector Mask and a Layer Mask. 5. Clipping masks 6. Using the Rulers, Guides and Measure Tool.
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<p>Content Statements</p>		
<p>Students will learn how to select targeted pixels in order to move, reshape, fill, adjust, or edit an image.</p>		

Assessments	
Formative Assessment Questions Classroom participation Class discussion. Timely completion of assigned work. Summative Assessments	
Equipment Needed -Computer with Photoshop CC 2015, Internet and Network Access, Interactive Whiteboard, Flash drive.	Teacher Resources: Demonstration of software applications by teacher. Google Docs Examples of previously done assignments: PowerPoint and PDF.

Cluster: Unit V- Typography		
Standards: NJSLS Fine Art: 1.3.12.D.2, 1.3.12.D.4, 1.3.12.D.5, 1.4.12.A.2		
Essential Questions	Enduring Understandings	Activities, Investigation, and Student Experiences
Can the students use computer graphics software to edit and manipulate text?	<p>Students will learn how to use text.</p> <p>Students will learn to recognize and utilize the design elements of type as art in their graphic designs.</p> <p>Students will learn font names in the library and vocabulary regarding typography.</p>	<p>A. Creating and Formatting Text. They will learn to edit and modify it with both character and paragraph palettes.</p> <ol style="list-style-type: none"> 1. Introduction. 2. Using the Type Tools. 3. Creating Paragraph Type. 4. Creating Artistic Type. 5. Formatting Type. 6. Using transform command 7. Using character tab to adjust kerning and leading 8. Review. <p>B. Special Text Effects. The students will learn to distort text, rasterizing and reshaping text into shape. .</p> <ol style="list-style-type: none"> 1. Introduction. 2. Warping Text. 3. Making Type Visible on Top of a Photograph. 4. Rasterizing Type. 5. Using Text as a Clipping Mask. 6. Converting Type to Shapes. 7. Creating Text on a Path. 8. Review

Content Statements		
Students will learn to use the Type tools to add text to a document.		
Assessments		
Formative Assessment Questions Classroom participation Class discussion. Timely completion of assigned work. Summative Assessments (Test on Vocabulary)		
Equipment Needed -Computer with Photoshop CC 2015, Internet and Network Access, Interactive Whiteboard, Flash drive.		Teacher Resources: Demonstration of software applications by teacher. Google Docs Examples of previously done assignments: PowerPoint and PDF. www.DaFont.com

Cluster: Unit VI -Working with Photographs		
Standards - NJSLS Fine Art: 1.3.12.D.2, 1.3.12.D.4, 1.3.12.D.5, 1.4.12.A.2		
Essential Questions	Enduring Understandings	Activities, Investigation, and Student Experiences
Can the students use computer graphics software to edit photos?	<p>Students will learn basic level manipulation and correction skills using the darkroom features of the toolbar.</p> <p>Students will learn to work with scanned and imported photographs to retouch and correct imperfections of the image.</p>	<p>A. <u>Using The Digital Darkroom Tools.</u> Students will learn to edit digital and scanned photos.</p> <ol style="list-style-type: none"> 1. Introduction. 2. Scanning 3. Cropping a Scan. 4. Straightening a Scan. 5. Removing Content with the Clone Stamp Tool. 6. Retouching with the Healing Brush Tool. 7. Working with the Patch Tool. 8. Dodging and Burning. 9. Adjusting Saturation. 10. Applying the Color Replacement Tool. 11. Using the Blur Tool. 12. Sharpening an Image with the Unsharp Mask Filter. 13. Creating a Depth-of-Field Effect with the Lens Blur Filter. 14. Review. <p>B. <u>Controlling Tone.</u> Students will learn to adjust the brightness and contrast qualities of a photograph using the Auto Tonal commands, as well as, more advanced correction methods.</p> <ol style="list-style-type: none"> 1. Introduction. 2. Applying a Shadow/Highlight Adjustment. 3. Applying Auto-adjustments. 4. Changing Auto-adjustment Defaults.

		<ol style="list-style-type: none"> 5. Adjusting Brightness and Contrast with Levels. 6. Adjusting Tonality with Curves. 7. Saving and Loading Brightness Adjustment Settings. 8. Review. <p>C. <u>Adjusting Color.</u> Students will learn to use the available commands to correct color in an image.</p> <ol style="list-style-type: none"> 1. Introduction. 2. Adjusting Color Balance. 3. Adjusting Hue/Saturation. 4. Adjusting Color with Curves. 5. Adjusting Color with Variations. 6. Using the Match Color Command. 7. Review.
<p>Content Statements</p>		
<p>Students will learn to use the digital darkroom applications of the software program</p>		

Assessments	
Formative Assessment Questions Classroom participation Class discussion. Timely completion of assigned work. Summative Assessments	
Equipment Needed -Computer with Photoshop CC 2015, Internet and Network Access, Interactive Whiteboard, Flash drive.	Teacher Resources: Demonstration of software applications by teacher. Google Docs Examples of previously done assignments: PowerPoint and PDF.

Unit VII - Exploring Graphic Design in the Modern World/Real World Applications		
Standards - NJSLS Fine Art: 1.3.12.D.2, 1.3.12.D.4, 1.3.12.D.5, 1.4.12.A.2		
Essential Questions	Enduring Understandings	Activities, Investigation, and Student Experiences
Can the students use computer graphics software to create products and packaging for consumers?	Students will learn Photoshop to design packaging and tear sheets with their info and work from the year (portfolio)	<p>A. <u>Photoshop and Design Layout</u> Students will learn the applications that integrate the processes. As well as, the differences between the two workspaces.</p> <ol style="list-style-type: none"> 1. Introduction. 2. Design in Photoshop CC 2015 to layout designs 3. Working with the Layers Palette. 4. Laying out tearsheets (Portfolio work) <p>B. <u>Save for the Web.</u></p> <ol style="list-style-type: none"> 1. Saving as a PSD file 2. Saving as JPEG. 3. Saving in Photoshop CC 2015. 4. Critiquing student's work 5. Mockups. 6. Review.

Content Statements		
Students will design products and packaging for consumers as well as create/assemble their portfolio from the year.		
Assessments		
Formative Assessment Questions Classroom participation Class discussion. Timely completion of assigned work. Summative Assessments		
Equipment Needed -Computer with Photoshop CC 2015, Internet and Network Access, Interactive Whiteboard, Flash drive.		Teacher Resources: Demonstration of software applications by teacher. Google Docs www.showbie.com