

# EASTERN ARIZONA COLLEGE

## Basic Computer Graphics

Course Design  
2016-2017

### Course Information

**Division** Fine Arts  
**Course Number** ART 184  
**Title** Basic Computer Graphics  
**Credits** 3  
**Developed by** Jeff Henley  
**Lecture/Lab Ratio** 2 Lecture/2 Lab

### Transfer Status

ASU	NAU	UA
ART Dept Elective, GIT Dept Elective	Elective Credit	ART Departmental Elective

**Activity Course** No  
**CIP Code** 50.0400  
**Assessment Mode** Portfolio  
**Semester Taught** Upon Request  
**GE Category** None  
**Separate Lab** No  
**Awareness Course** No  
**Intensive Writing Course** No

### Prerequisites

None

### Educational Value

Essential to the art student wanting to learn about Graphic Arts. Techniques also pertinent to computer students, business students, and others contemplating fields where they might be expected to be able to create well-designed, professional quality documents.

### Description

Emphasizes the fundamental concepts and features of Photoshop. Uses industry-standard, image-editing tools for designers who want to produce sophisticated graphics for the Web and for print. This course cannot be used as a curriculum requirement for the Graphic Design AAS program. It is recommended that the student have a working knowledge of computers.

### Supplies

Storage device (USB recommended)  
 Supplemental handouts

## **Competencies and Performance Standards**

### **1. Demonstrate ability to effectively use the work area.**

#### **Learning objectives**

*What you will learn as you master the competency:*

- a. Locate and open an existing file.
- b. Locate specific items in menu bar.
- c. Locate and select appropriate tool in toolbox.
- d. Locate and use appropriate palette.
- e. Enlarge and reduce display of an image.

#### **Performance Standards**

*Competence will be demonstrated:*

- o in successful completion of document from lecture
- o in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- o learner can locate and open an existing file
- o learner can locate specific items in menu bar
- o learner can locate and select appropriate tool in toolbox
- o learner can locate and use appropriate palette
- o learner can enlarge and reduce display of an image
- o learner can save document to proper folder
- o learner can print finished document

### **2. Utilize selection tools efficiently.**

#### **Learning objectives**

*What you will learn as you master the competency:*

- a. Select parts of an image using a variety of tools.
- b. Reposition a selection marquee.
- c. Deselect a selection.
- d. Constrain the movement of a selection.
- e. Choose areas of an image, based on proximity or color of pixels.

#### **Performance Standards**

*Competence will be demonstrated:*

- o in successful completion of document from lecture
- o in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- o learner is able to select parts of an image using a variety of tools
- o learner is able to reposition a selection marquee
- o learner is able to deselect a selection
- o learner is able to constrain the movement of a selection
- o learner is able to choose areas of an image, based on proximity or color of pixels
- o learner is able to adjust a selection with the arrow keys

- learner is able to add to and subtract from selections
- learner is able to rotate, scale, and transform a selection
- learner is able to combine selection tools
- learner is able to crop an image

### **3. Apply the principles of layering in a document.**

#### ***Learning objectives***

*What you will learn as you master the competency:*

- a. Organize artwork on layers.
- b. Create a new layer.
- c. View and hide layers.
- d. Select layers.
- e. Remove artwork on layers.
- f. Reorder layers to change the placement of artwork in the image.
- g. Apply modes to layers to vary the effect of artwork on the layer.
- h. Link layers to affect them simultaneously.
- i. Apply a gradient to a layer.
- j. Save a copy of the file with the layers flattened.

#### ***Performance Standards***

*Competence will be demonstrated:*

- in successful completion of document from lecture
- in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- learner is able to organize artwork on layers
- learner is able to create a new layer
- learner is able to view and hide layers
- learner is able to select layers
- learner is able to remove artwork on layers
- learner is able to reorder layers to change the placement of artwork in the image
- learner is able to apply modes to layers to vary the effect of artwork on the layer
- learner is able to link layers to affect them simultaneously
- learner is able to apply a gradient to a layer
- learner is able to add text and layer effects to a layer
- learner is able to save a copy of the file with the layers flattened

### **4. Demonstrate use of painting and editing tools.**

#### ***Learning objectives***

*What you will learn as you master the competency:*

- a. Use the painting tools to create original artwork.
- b. Apply various painting effects to existing artwork.
- c. Define the relationship between a painting tool, its options palette, and its brush size.

- d. Select paint colors from the color palette, the swatches palette, and the color picker.
- e. Select options for the painting tools to enhance the behavior of the tools.

**Performance Standards**

*Competence will be demonstrated:*

- o in successful completion of document from lecture
- o in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- o learner is able to use the painting tools to create original artwork
- o learner is able to apply various painting effects to existing artwork
- o learner understands the relationship between a painting tool, its options palette, and its brush size
- o learner is able to select paint colors from the color palette, the swatches palette, and the color picker
- o learner is able to select options for the painting tools to enhance the behavior of the tools
- o learner can save document to proper folder
- o learner can print finished document

**5. Apply the basic knowledge necessary to use masks and channels.**

**Learning objectives**

*What you will learn as you master the competency:*

- a. Refine a partial selection using a quick mask.
- b. Save a selection as a channel mask.
- c. View a mask using the channels palette.
- d. Load a saved mask and apply effects.
- e. Paint in a mask to modify a selection.
- f. Make an intricate selection using the extract command.
- g. Create and use a gradient mask.

**Performance Standards**

*Competence will be demonstrated:*

- o in successful completion of document from lecture
- o in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- o learner is able to refine a partial selection using a quick mask
- o learner is able to save a selection as a channel mask
- o learner is able to view a mask using the channels palette
- o learner is able to load a saved mask and apply effects
- o learner is able to paint in a mask to modify a selection
- o learner is able to make an intricate selection using the extra command
- o learner is able to create and use a gradient mask

**6. Draw, edit, fill, and convert using basic pen tool techniques and paths.**

**Learning objectives**

*What you will learn as you master the competency:*

- a. Draw straight and curved paths using the pen tool.
- b. Save paths.
- c. Fill and stroke paths.
- d. Edit paths using the path editing tools.
- e. Convert a path to a selection.
- f. Convert a selection to a path.

**Performance Standards**

*Competence will be demonstrated:*

- o in successful completion of document from lecture
- o in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- o learner is able to draw straight and curved paths using the pen tool
- o learner is able to save paths
- o learner is able to fill and stroke paths
- o learner is able to edit paths using the path editing tools
- o learner is able to convert a path to a selection
- o learner is able to convert a selection to a path

**7. Demonstrate knowledge and use of advanced layering techniques.**

**Learning objectives**

*What you will learn as you master the competency:*

- a. Add guides to an image to help make selections and align artwork.
- b. Create and edit layer masks to selectively hide and reveal portions of artwork on a layer.
- c. Align images and layers.
- d. Create clipping groups.
- e. Add adjustment layers to an image and use them to apply color and tonal adjustment without permanently changing pixel data.
- f. Add layer effects to a type layer and apply the effects to multiple layers.
- g. Delete a layer mask.
- h. Save layered files.

**Performance Standards**

*Competence will be demonstrated:*

- o in successful completion of document from lecture
- o in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- o learner is able to add guides to an image to help make selections and align artwork
- o learner is able to create and edit layer masks to selectively hide and reveal portions of artwork on a layer
- o learner is able to align images and layers

- learner is able to create clipping groups
- learner is able to add adjustment layers to an image, and use them to apply color and tonal adjustment without permanently changing pixel data
- learner is able to add layer effects to a type layer, and apply the effects to multiple layers
- learner is able to delete a layer mask
- learner is able to save layered files

## **8. Use basic image correction features.**

### ***Learning objectives***

*What you will learn as you master the competency:*

- a. Determine the tonal range of an image.
- b. Determine the image type.
- c. Work with the adjustment tools.
- d. Assign values to the black and white points.
- e. Remove a color cast.

### ***Performance Standards***

*Competence will be demonstrated:*

- in successful completion of document from lecture
- in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- learner is able to determine the tonal range of an image
- learner is able to determine the image type
- learner is able to work with the adjustment tools
- learner is able to assign values to the black and white points
- learner is able to remove a color cast

## **9. Demonstrate the basic knowledge necessary to use photo retouching.**

### ***Learning objectives***

*What you will learn as you master the competency:*

- a. Crop an image to the final size.
- b. Adjust the tonal range of an image.
- c. Remove a color cast from an image using an adjustment layer.
- d. Use the replace color command to change the hue and saturation of a selected color in a photograph.
- e. Adjust the saturation and brightness of isolated areas of an image using the sponge and dodge tools.
- f. Use the rubber stamp tool to eliminate an unwanted object from an image.
- g. Replace parts of an image with another image.
- h. Apply the unsharp mask filter if needed to finish the photo retouching process.
- i. Save a file in a format that can be used by a page-layout program.

### **Performance Standards**

*Competence will be demonstrated:*

- o in successful completion of document from lecture
- o in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- o learner is able to crop an image to the final size
- o learner is able to adjust the tonal range of an image
- o learner is able to remove a color cast from an image using an adjustment layer
- o learner is able to use the replace color command to change the hue and saturation of a selected color in a photograph
- o learner is able to adjust the saturation and brightness of isolated areas of an image using the sponge and dodge tools
- o learner is able to use the rubber stamp tool to eliminate an unwanted object from an image
- o learner is able to replace parts of an image with another image
- o learner is able to apply the unsharp mask filter if needed to finish the photo retouching process
- o learner is able to save a file in a format than can be used by a page-layout program

## **10. Create special effects.**

### **Learning objectives**

*What you will learn as you master the competency:*

- a. Add a grid to an image to help make precise selections.
- b. Desaturate a selection without affecting the color in other parts of the image.
- c. Paint on a layer above the artwork to color the underlying artwork without changing it permanently.
- d. Choose colors that are safe to use on the Web.
- e. Add an adjustment layer to make a color correction to a selection.
- f. Apply filters to selections to create various effects.

### **Performance Standards**

*Competence will be demonstrated:*

- o in successful completion of document from lecture
- o in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- o learner is able to add a grid to an image to help make precise selections
- o learner is able to desaturate a selection without affecting the color in other parts of the image
- o learner is able to paint on a layer above the artwork to color the underlying artwork without changing it permanently
- o learner is able to choose colors that are safe to use on the Web
- o learner is able to add an adjustment layer to make a color correction to a selection
- o learner is able to apply filters to selections to create various effects

## 11. Optimize images for Web publications.

### **Learning objectives**

*What you will learn as you master the competency:*

- a. Optimize JPEG and GIF files, and adjust the optimization settings to achieve the desired balance between file size and image quality.
- b. Adjust the amount of dithering applied to the image.
- c. Define a transparent background for the image.
- d. Create a hypertext image map, and export the image as an HTML file.
- e. Batch-process files to automate the optimization process.

### **Performance Standards**

*Competence will be demonstrated:*

- o in successful completion of document from lecture
- o in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- o learner is able to optimize JPEG and GIF files, and adjust the optimization settings to achieve the desired balance between file size and image quality
- o learner is able to adjust the amount of dithering applied to the image
- o learner is able to define a transparent background for the image
- o learner is able to create a hypertext image map, and export the image as an HTML file
- o learner is able to batch-process files to automate the optimization process

## 12. Create animated images for the Web.

### **Learning objectives**

*What you will learn as you master the competency:*

- a. Use the layers palette in conjunction with the animation palette to create animation sequences.
- b. Make changes to single frames, multiple frames, and an entire animation.
- c. Use tween command to automatically vary layer opacity and position across frames.
- d. Preview animation in ImageReady and in a Web browser.
- e. Open and edit an existing animated GIF image.
- f. Optimize the animation using the optimize palette.

### **Performance Standards**

*Competence will be demonstrated:*

- o in successful completion of document from lecture
- o in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- o learner is able to use the layers palette in conjunction with the animation palette to create animation sequences
- o learner is able to make changes to single frames, multiple frames, and an entire animation
- o learner is able to use tween command to automatically vary layer opacity and position across frames
- o learner is able to preview animation in ImageReady and in a Web browser



- learner is able to open and edit an existing animated GIF image
- learner is able to optimize the animation using the optimize palette

**13. Demonstrate how to use ImageReady Web techniques.**

***Learning objectives***

*What you will learn as you master the competency:*

- a. Utilize effective Web development work flow techniques.
- b. Create and modify slices to define buttons and other elements of a Web page.
- c. Optimize individual slices using various settings and file formats to fully optimize Web graphics.
- d. Create roll-overs for buttons and add secondary effects to display additional artwork.

***Performance Standards***

*Competence will be demonstrated:*

- in successful completion of document from lecture
- in successful completion of instructor assigned exercises

*Performance will be satisfactory when:*

- learner is able to understand and utilize effective Web development work flow techniques
- learner is able to create and modify slices to define buttons and other elements of a Web page
- learner is able to optimize individual slices using various settings and file formats to fully optimize Web graphics
- learner is able to create roll-overs for buttons and add secondary effects to display additional artwork

***Types of Instruction***

Classroom Presentation  
On Campus Laboratory

***Grading Information***

***Grading Rationale***

Portfolio evaluation  
Student may choose to receive a grade or a pass/fail

***Grading Scale***

A	100-90%
B	89-80%
C	79-70%
D	69-60%
F	59% and below
P	100-70%