



# Broward Community College

## Course Outline

STATUS:     A    

COMMON COURSE NUMBER:     PGY 1801C    

COURSE TITLE:     Digital Imaging    

CREDIT HOURS:         3        

**CONTACT HOURS BREAKDOWN:**

Lecture/Discussion         32        

Lab           32          

Other                     

Contact Hours/Week         4        

**CATALOG COURSE DESCRIPTION:**

Prerequisite: None

Corequisite: None

This is a graphic design course formulated to develop skills in digital imaging. Students will learn through the use of the computer how to create, edit and manipulate digital images from scanned photographs and artwork. Students will utilize retouching techniques to modify, enhance and reshape images, apply special effects, adjust color balance, manage files, and prepare their work for print output and web/electronic presentation. The class is portfolio driven, training students to follow a business process for analyzing client needs, conducting research and developing a concept for production within a budget.

**UNIT TITLES:**

1. Overview of Digital Imaging
2. Photographic Concepts
3. Introduction to Imaging Input Devices
4. Introduction to Digital Imaging Software
5. Simple Image Editing
6. Complex Image Creation, Editing and Manipulation
7. Preparing Images for Web Output.
8. Preparing Images for Print, Ensuring and Printing Accurate Color
9. Digital Imaging Projects as Defined by Current Industry Needs
10. Portfolio Presentation and Critique

LAST REVIEW     Academic Year 1998-99     NEXT REVIEW     Academic Year 2003-04    

*Interim Revision Dates: 10/30/00*

## I. Course Overview:

Upon successful completion of this course, the students should be able to create, edit, retouch, enhance, and manipulate digital images. Compose and embellish digital images for professional publications. Design and incorporate typographic images within digital images. Organize, store and manage digital image documents and files for printer and screen output. Design and produce examples of digital images for commercial and technical application.

## II. Units:

### Unit 1. Overview of Digital Imaging

#### General Outcome:

- 1.0 The students should be able to describe digital imaging concept methods.

#### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 1.1 Define imaging and describe the history of imaging.
- 1.2 Describe contemporary digital imaging.
- 1.3 Describe the use of photography as a primary imaging device.
- 1.4 Identify and define why certain images are effective and other are and ineffective.
- 1.5 Identify the primary industry standard imaging software and describe its fundamental features and capabilities.
- 1.6 Identify various software packages that can be used in the imaging process and describe the unique feature of these packages that would lead a graphic artist to use those tools.
- 1.7 Define the importance of preparing images properly for final output.

## Unit 2. Photographic Concepts

### General Outcome:

2.0 The students should be able to identify the strengths and weakness of black and white and color photography.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

2.1 Develop vocabulary of photographic terms.

2.2 Critique photographic images.

## Unit 3. Introduction to Image Input Devices

### General Outcome:

- 3.0 The students should be able to identify the strengths and weakness of black and white color photography.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 3.1 Scan an image using a flatbed scanner.
- 3.2 Scan an image using a slide scanner.
- 3.3 Take a photograph with a digital camera and transfer it to the hard drive.
- 3.4 Capture a still frame from an analog video camera using a video capture board.
- 3.5 Use other devices as defined.

## Unit 4. Introduction to Digital Imaging Software

### General Outcome:

4.0 The students should be able to use the basic imaging software features.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

4.1 Understand and be able to use the imaging software work area.

4.1.1 Use basic imaging software tools.

4.1.2 View images, work with palettes.

4.2 Identify, describe and work with selection tools in the given digital imaging software package in order to produce desired affects on artwork.

4.2.1 Describe and understand the purpose of each selection tool.

4.2.2 Select with the rectangular marquee tool. Elliptical Marquee tool, Magic Wand, Lasso, Magnetic Lasso.

4.2.3 Move a selection, transform a selection, and combine a selection.

4.2.4 Crop the completed image.

4.3 Isolate different parts of an image on layers and then edit each as discrete artwork, allowing unlimited flexibility in composing and revising an image.

4.3.1 Organize work on layers, create and view layers.

4.3.2 Select and remove artwork on a layer, rearrange a layer.

4.3.3 Change the opacity and mode of a layer, link layers.

4.3.4 Add a gradient to a layer, text to a layer, a layering effect.

- 4.4 Create original artwork or retouch existing artwork in many different ways, selecting from various painting tools and fill commands that allow the addition and manipulation of color.
  - 4.4.1 Paint and fill images with color, set up a painting or editing tool.
  - 4.4.2 Erase, fill with print bucket tool.
  - 4.4.3 Use custom brushes, airbrush and smudge, create gradients and soft-edged effects, paint with texture, and define a brush.
  
- 4.5 Students should be able to use masks to isolate and manipulate specific parts of an image. Students will understand that a mask is like a stencil and be able to alter the cutout portion of the mask while protecting the area surround the cutout. Both temporary and mask templates for repeated use will be created.
  - 4.5.1 Create and edit a quick mask, save a selection as a mask.
  - 4.5.2 Edit a mask, load a mask as a selection and apply effects.

## Unit 5. Simple Image Editing

### General Outcome:

5.0 The students should be able to use a variety of imaging software tools and commands for improving the quality of an image.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 5.1 Use a variety of imaging software tools and commands for improving the quality and use techniques for basic image correction through the process of acquiring, resizing, and retouching a photo intended for print layout.
  - 5.1.1 Describe the basic strategy for retouching.
  - 5.1.2 Determine the correct resolution and image size to begin working with.
  - 5.1.3 Crop an image.
  - 5.1.4 Adjust a tonal range.
  - 5.1.5 Remove the color cast.
  - 5.1.6 Replace the colors in an image.
  - 5.1.7 Adjust saturation with the sponge tool.
  - 5.1.8 Adjust lightness with the dodge tool.
  - 5.1.9 Remove unwanted objects.
  - 5.1.10 Replace part of an image.
  - 5.1.11 Apply the UnSharp Mask Filter.
- 5.2 Use the pen tool to draw straight or curved lines (paths), using the pen tool as a drawing tool or a selection tool to create smooth anti-aliased outlines.
  - 5.2.1 Draw paths with the pen tool.
  - 5.2.2 Draw straight paths and curved paths.
  - 5.2.3 Combine straight and curved lines.
  - 5.2.4 Draw a path around artwork.

## Unit 6. Complex Image Creation, Editing and Manipulation

### General Outcome:

- 6.0 The students should be able to create complex effects in their artwork and add a graphic form from a drawing/illustration program to create a range of effects.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 6.1 Create complex effects in their artwork using layer masks, clipping groups and adjustment layers.
- 6.1.1 Add guides to align artwork.
  - 6.1.2 Work with layer masks.
  - 6.1.3 Align images.
  - 6.1.4 Create a clipping group.
  - 6.1.5 Add adjustment layers.
  - 6.1.6 Add text.
  - 6.1.7 Add multiple layer effects.
  - 6.1.8 Remove layer masks.
  - 6.1.9 Flatten layered image.
- 6.2 Select from a large assortment of filters in the imaging software transform images for special effects in their artwork.
- 6.2.1 Save and load a selection.
  - 6.2.2 Hand-color selections on a layer.
  - 6.2.3 Combine and move selections.
  - 6.2.4 Colorize a selection.
  - 6.2.5 Use a grid.
  - 6.2.6 Change the color balance.
  - 6.2.7 Apply filters.

### 6.2.8 Improve performance with filters.

- 6.3 Add a graphic from a drawing package into an imaging software file to create a range of creative effects.
  - 6.3.1 Placing a file from an illustration application program.
  - 6.3.2 Distorting the graphic to match a photograph.
  - 6.3.3 Use blending modes on the graphic.
  - 6.3.4 Export the image.

## Unit 7. Preparing Images for Web Output

### General Outcome:

- 7.0 The students should be able to use appropriate file formats and compression options for images that are to be distributed on the World Wide Web.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 7.1 Restore default preferences.
- 7.2 Prepare images for the Web.
- 7.3 Use the Actions palette to automate tasks.

Unit 8. Preparing Images for Print, Ensuring and Printing Accurate Color

General Outcome:

- 8.0 The students should be able to print in to calibrate their monitor to ensure consistent display of on-screen color and save files in correct format for accurate color print output.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 8.1 Print in two-color using a greyscale image and spot color to create an effective and inexpensive product.
- 8.1.1 Understand and describe printing in color concepts.
  - 8.1.2 Use channels and the channels palette.
  - 8.1.3 Mix color channels.
  - 8.1.4 Assign values to the black and white points.
  - 8.1.5 Sharpen the image.
  - 8.1.6 Set up for spot color.
  - 8.1.7 Add spot color.
- 8.2 Calibrate their monitor to ensure consistent display of on-screen color. This includes defining the color space in which to edit and display RGB (screen) images, and in which to edit, display and print CMYK images to ensure a close match between on-screen and printed colors.
- 8.2.1 Understand and describe the difference between the screen RGB color model and the CMYK print output color model with respect to reproducing accurate color.
  - 8.2.2 Calibrate their monitor.
  - 8.2.3 Define the RGB color space for images.

- 8.2.4 Define the CMYK color space for images and printing.
- 8.2.5 Compensate for dot gain in greyscale images.
- 8.2.6 Prepare images for print.
- 8.2.7 Prepare a color separation with the imaging software.
- 8.2.8 Identify successful strategies for printing.
- 8.2.9 Display individual channels.
- 8.2.10 Identify out of gamut colors.
- 8.2.11 Select print options.
- 8.2.12 Print.

## Unit 9. Digital Imaging Projects as Defined by Current Industry

### General Outcome:

- 9.0 The students should be able to complete digital imaging projects as defined by changing industry requirements and demands, e.g. Promotion Flyer, Direct Mail Promotion, Magazine Cover, Web Page, etc. Projects will satisfy client requirements and will be produced in both print and electronic (web, TV, multimedia) output.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 9.1 Describe the qualities unique to a given imaging application (magazine cover, etc.) and research and collect various designs, describing the purpose and intent of each design.
- 9.2 Distinguish qualities that make a particular imaging application successful.
- 9.3 Identify a client, real or simulated and follow the business process to produce a final product. SAMPLE PROCESS:
- 9.3.1 Interview client (real or simulated).
  - 9.3.2 Determine specific requirements unique to the image application.
  - 9.3.3 Gather any additional graphics and text to be used in the image application.
  - 9.3.4 Identify the client budget.
  - 9.3.5 Negotiate a timeline for product review and completion.
  - 9.3.6 Conduct market-research and needs analysis.
  - 9.3.7 Research the concept by reviewing and collecting examples of similar products.
  - 9.3.8 Identify graphic elements from the core design that need to be carried through to keep a consistent look for the client.
  - 9.3.9 Draft ideas and concept solutions traditionally, or by computer.

- 9.3.10 Select the appropriate computer applications to execute the project.
  - 9.3.11 Experiment with concept solutions using the computer, supported by traditional drafting methods if deemed necessary.
  - 9.3.12 Develop the concept.
  - 9.3.13 Produce a mock-up or dummy layout of the design concept.
  - 9.3.14 Review dummy with client.
  - 9.3.15 Revise according to client requirements.
  - 9.3.16 Produce final dummy for approval by client (revising as many times as necessary to achieve client approval).
- 9.4 Complete project according to client specifications.

General Outcome:

10.0 The students should be able to present project to class for peer, instructor and business professional review. Projects will be measured according to specific criteria and recommended revisions will count in order to receive a final grade.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

10.1 Reproduce projects in multiple output media: print, web, TV and multimedia.

10.2 Present project in a formal class evaluation setting, using business presentation strategies and tools, to classmates, instructor and visiting industry professionals.

10.3 Revise projects according to evaluation input.

10.4 Present final revised project to class.

