



**PASSAIC COUNTY TECHNICAL INSTITUTE**

# **GRAPHIC ARTS 3 CURRICULUM GUIDE**

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## **I. Course Description – Graphic Arts 3**

Graphic Design is a creative process that combines art and technology to communicate ideas. The designer works with a variety of communication tools in order to convey a message from a client to a particular audience. This course will give students a foundation in Graphic Design by introducing them to the various aspects of the Graphic Design field.

Students will learn how to operate industry standard digital copiers, scanners, plotters and finishing equipment. They will learn how to select the proper media for each device and understand how print quality varies depending on the type of paper stock or material chosen.

Students will also learn how to properly write a creative brief and job ticket to communicate job specifications as well as design objectives. Students will utilize production techniques with industry standard software such as Adobe Photoshop, Illustrator and InDesign and post production techniques for finishing, mounting and the creation of mock-ups.

In addition to the computer and software, students will properly handle and use drawing tablets, digital cameras, scanners, and other various output devices such as printers and backup storage disks applicable to projects.

Students will be required to demonstrate ability in all educational projects and assignments and test with a minimum of 65% proficiency.

## II. Course Outline and Objectives

### UNIT 1: PRODUCTION FUNDAMENTALS (9.1.12.A,2; 1.3.12.D.3)

*Students will:*

1. learn the origins of the printing industry (wood block printing, movable type and rotary printing press)
2. learn about modern printing technologies (offset press vs digital press)
3. learn to identify the proper use for each piece of equipment in a print shop
4. learn how to replace consumables and perform basic hardware maintenance
5. learn how to estimate the cost of printing a job

### UNIT 2: SHOP SAFETY (9.2.12.F.2,4)

*Students will:*

1. identify and handle the tools of the trade in an accurate and safe manner
1. demonstrate safety when handling tools such as razor blades, X-Acto and mat knives
2. utilize all tools of the trade with various projects and jobs
3. identify replacement costs of tools of the trade, respecting them with proper care and storage for future use
4. clean tools with appropriate cleaning products and keep sink and all areas clean at all times
5. identify proper usage of adhesives and use them in a safe manner
6. understand procedures of shop safety and first aid
7. complete each project following all required criteria as given in job or project description
8. understand why following dimensions and specific instruction in job descriptions are vital for successful completion
9. use appropriate equipment and tools in a safe, proper manner within the assigned job or project deadline
10. demonstrate appropriate use of light table for elements in design
11. understand purpose of overhead projectors for large format projects
12. use proportional scale for figuring proper enlargement/reduction values
13. operate the Xerox printers/copiers safely for enlarging/reducing, scanning and duplicating, using appropriate modes and paper
14. operate and maintain computers and all peripherals (digital camera, scanner, printers)

## **UNIT 3: DESIGN AND PRINT INDUSTRY (9.1.12.B.3; 1.3.12.D.4)**

### **Section 1: Paper**

*Students will:*

1. identify the different weights of various paper stocks
2. identify the different standard paper sizes
3. identify finishes of paper stocks
4. identify the different colors of paper stocks
5. identify appropriate paper stocks for various printing equipment
6. learn how to create paper mock-ups for brochures, calendars and various multi-page projects

### **Section 2: Production Work Flow**

*Students will:*

1. learn how to write-up a job ticket
2. learn how to schedule a project
3. write a creative brief detailing a project's design objectives
4. manage digital assets from the start of a project through the archiving of the project
5. optimize printer and copier settings for the paper stock used
6. learn how to produce print quality PDFs with proper color settings and registration
7. understand how to preflight a PDF file before sending it to a printing device
8. understand how to create font sets with a font management utility for individual jobs

### **Section 3: Oversized Graphics**

*Students will:*

1. understand the different types of materials used to create large signage
2. understand how to properly select the correct resolution for oversized printing
3. understand how to create scalable vector graphics for large signage
4. understand how to produce proportionately scaled artwork

### **Section 4: Understanding Printing**

*Students will:*

1. learn the differences between RGB, spot and CMYK color
2. learn the Pantone color matching system
3. learn how properly set-up files for print separations
4. understand printer margins and gutter margins
5. learn about page bleeds and how to properly set them up
6. learn how to properly in-position pages within multi-page documents for printing
7. understand registration and crop marks
8. add crop marks and registration marks
9. create custom crop marks and registration marks for unique jobs

## **UNIT 4: TECHNOLOGY FOUNDATIONS (9.1.12.B.3; 1.3.12.D.4)**

### **Section 1: Technology Skills**

*Students will:*

1. identify and use computer and peripherals used in Graphic Design
2. be proficient in software applications used in a typical Graphic Design environment
3. understand how to open, close and manage fonts utilizing a font manager for various projects
4. utilize the scanner to properly digitize custom illustrations, textures and photography
5. learn how to properly adjust a digital camera for taking photos in various environments
6. understand the costs of all hardware, peripherals and software used in the Graphic Design field
7. properly create files and save them in the appropriate folders and/or storage disks
8. name files according to project name for easy retrieval
9. understand the importance of frequent saving and backing up of files
10. maintain computers and peripherals, shutting down and storing appropriately
11. utilize the internet to assist in subject matter research, understanding copyright laws
12. utilize online tutorials and educational tools
13. understand how to use the computer to save, resize and properly print reference
14. understand how to use spell-check and the importance of perfect spelling and punctuation in projects
15. understand the need for proofing, revisions and acquiring a sign off/approval from the client
16. utilize printer/copier to further enlarge, resize and alter reference images
17. practice proper composite output using the appropriate devices
18. complete all projects following all criteria within deadline assigned

### **Section 2: Vector-Based Software (Adobe Illustrator) Level 3 (9.1.12B.3; 1.3.12.D.4)**

*Students will:*

1. create Illustrator documents for various projects
2. utilize keyboard commands to maximize productivity
3. practice basic drawing technique with the pen, brush and objects tools
4. practice basic path editing
5. practice basic text editing
6. understand Appearances and how to edit them
7. work with Groups and Layers to keep drawings organized
8. understand how to work with color
9. practice object transformation and positioning
10. practice expressive drawing with brushes
11. understand how to create and use Symbols
12. understand how to work with images
13. learn how to save and print their projects
14. learn how Illustrator works with other programs
15. Represent proper use of color, tint, opacity and stroke thickness

16. Access Pantone color matching system for spot color jobs
17. use functions such as, but not limited to, free transform, pathfinder functions, effects, live trace and managing those features when needed in design
18. use guides for proper alignment in designs
19. demonstrate a knowledge of vector based fonts, symbols and libraries.
20. save in appropriate format upon request and understand purpose of file formats (AI, EPS, PDF, etc)
21. resize artwork in layouts in proportion using correct tools and keys

### **Section 3: Pixel-Based Software (Adobe Photoshop) Level 3** (9.1.12B.3; 1.3.12.D.4)

*Students will:*

1. learn keyboard shortcuts to streamline workflow
2. make selections via quick selection tools or quick mask mode
3. create accurate paths with the Pen tool
4. be introduced to the basics of Layers and Adjustment Layers
5. learn to crop, transform and straighten images
6. understand and read histograms
7. use Adjustment layers and the Adjustment panel
8. adjust tones with Levels
9. limit adjustments with Layer Masks
10. create vector masks
11. adjust images with Shadow/Highlight
12. adjust images with Curves
13. adjust images with Hue/Saturation
14. learn to remove a color cast
15. adjust images with the Black & White adjustment layer
16. learn to use the the Dodge, Burn and Sponge tools
17. learn how to reducing noise and utilize proper sharpening techniques
18. photo retouch using the Spot Healing Brush tool, the Healing Brush tool, the Patch tool and the Clone Stamp tool
19. learn to paint with brushes and gradients
20. work with Point Type and Paragraph Type
21. learn how to Warp text
22. learn Special Effects such as adding Layer Styles and Smart Filters
23. learn how to combine images utilizing Auto-blending Focus
24. create Photo-merge panoramas
25. combine group photos
26. learn how to output a file by selecting the appropriate print settings for individual projects
27. make a contact sheet utilizing Bridge
28. create a Web photo gallery
29. save in appropriate format upon request and understand purpose of file formats (PSD, JPEG, EPS, GIF, PNG, RAW, PDF, etc)
30. optimize images properly for their intended use (print, web, oversized graphics, mobile devices)
31. understand and demonstrate the difference between destructive and non-destructive editing and their types

#### **Section 4: Page Layout Software (Adobe InDesign) Level 3** (9.1.12B.3; 1.3.12.D.4)

*Students will:*

1. understand how to create a Workspace and save custom Workspaces
2. Identify menu items, tools, palettes and menus and how to use them
3. utilize keyboard commands to maximize productivity
4. learn to navigate a multi-page document
5. learn to set rulers, guides and measurements and view options
6. use guides for proper alignment in designs
7. use Contextual Menus and how to customize them
8. use the Quick Apply function
9. learn how to create new documents
10. set margin and column guides
11. learn how to insert, delete, and move pages
12. add sections and page numbers
13. create and apply master pages
14. understand text frames
15. type and edit text and use special characters
16. import text and auto-flow text
17. use text on a path
18. spellcheck a document
19. use the Auto Correct feature
20. import graphics from various formats and understand how to use the Links panel
21. learn how to edit original graphics and how to set frame-fitting options
22. set transparency and clipping paths
23. turn image layers on and off
24. learn how to select objects
25. use basic strokes and fills
26. use advanced strokes
27. use transparency
28. add drop shadows, feathering and effects to format objects
29. use the Eyedropper tool
30. understand grouping and locking objects
31. learn to align and distribute objects
32. understand how to create and edit text wraps
33. duplicate, scale, mirror and rotate objects
34. apply basic character styling
35. use Find/Change for text formatting
36. understand paragraph formatting
37. understand justification
38. understand tabs
39. apply character, paragraph and object styles
40. create a table with rows and columns

41. learn how to add, delete and adjust rows and columns
42. format a table and cells
43. add headers and footers
44. apply table styles
45. place graphics in cells
46. create color swatches
47. apply tint swatches
48. use gradient swatches and apply gradients
49. export files to different formats such as PDF, JPEG and TIF
50. use preflight options and package for output
51. understand the print dialogue box
52. export printer ready PDF files (with crop marks, registration marks and properly set colors for separation)
53. use the master page palette for template design for multiple pages
54. show proficiency in how to place and properly scale and rotate images
55. utilize columns for text for readability, using text wrap with images if appropriate
56. understand page layout and printer spreads

## **UNIT 5: PRODUCTION & FINISHING SKILLS**

*Students will:*

1. understand how to setup document bleeds
2. understand crop marks, registration marks, color bars and page information
3. know how to trim printed pieces utilizing the X-Acto knife and straight edge
4. know to size and trim a presentation board
5. know how to mount printed pieces on board using eco-friendly adhesives
6. know how to clean their finished pieces with a kneaded eraser
7. understand how to setup and fold multi-page pieces

## **III. Textbooks, Instructional Materials and Software**

**Technology:**

- PC based environment with Adobe Creative Suite, latest version, (Photoshop, Illustrator, InDesign)
- Computer projector with wall mounted screen for teacher instruction
- Smart board for interactive instruction
- Microsoft Internet Explorer
- Microsoft Office 2010 (Word, PowerPoint)
- Wacom Intuos 3 and 4 drawing tablets
- Wacom Cintiq digital drawing display
- Digital cameras
- Black & White and color copiers
- Wide format printers
- HP and Epson scanners
- Laser printers

**Tools of the trade:**

- Rulers, T-squares & triangles
- Sketch pads
- Various paper stocks
- Prismacolor colored pencils
- Prismacolor markers
- X-Acto and mat knives
- Lucite roller
- Rubber cement, tape, StudioTac adhesive
- Paper cutter
- Light tables

**IV. Instructional Strategies**

Various teaching methods will be used during the course. Handouts and discussion will be used, however, most of the instruction of this course will be a hands on instruction, in groups and individually. Live demonstrations will be made by the instructor then repeated and practiced by the students with one-on-one interaction to check for understanding. Real-time lessons will take place in a large group with the teacher on the computer using the projector, students working on their own computers with the teacher. Individual proofing and consulting will take place after demonstrations take place and art projects begin. Group critiques and individual evaluation will take place upon completion of art projects.

During the course of the year students could be given the opportunity to review design books and magazines, review websites for potential ideas for new projects and potentially meet people from industry and take field trips.

**V. Evaluation**

*Students are evaluated using the following criteria:*

1. Class participation (examples include attendance, completion of daily duties, general behavior towards classmates and instructor, sharing and maintenance of equipment and tools)
2. Research and design maintenance (examples include maintenance of all notes, project stages, file backups)
3. Composite presentation
4. Accuracy in meeting project criteria
5. Quizzes and tests
6. Deadline (deductions apply to all late projects)
7. Portfolio maintenance

## VI. Scope and Sequence Chart

KEY I = Introduced D = Developed R = Reinforced

SKILLS TO BE LEARNED	9	10	11	12
Handle tools of the trade and equipment correctly and safely (9.2.12.F.1,2,4,5)	IDR	IDR	IDR	IDR
Demonstrate knowledge of digital file organization and archiving (9.1.12.B.3,4)	ID	R	R	R
Demonstrate a professional work ethic (9.1.12.B.3,4)	I		DR	DR
Use effective time management skills in the production of projects (9.1.12.B.3)	ID		DR	R
Demonstrate craftsmanship (organization, neatness, precision) (9.1.12.B.3,4)	ID	IDR	IDR	IDR
Understand and practice the characteristics of basic design principles (9.1.12.B.3)	I	R	R	R
Understand the creative process and importance of each step (9.1.12.B.2,4; 9.2.12.D.1)	I	D	IDR	IDR
Apply appropriate software solutions to design problems (9.1.12.B.3,4)	I	D	DR	R
Articulate and solve basic problems of form and function (9.1.12.B.3,4)	I	D	DR	DR
Identify and apply the critical thinking process to design challenges (9.1.12.B.3,4)	I	DR	DR	DR
Cut accurately using an X-Acto knife and mat knife in a safe manner (9.2.12.F.2)	ID	IDR	IDR	IDR
Understand the value of all tools, equipment, and supplies (9.2.12.E.1)	I	ID	IDR	IDR
Demonstrate tool skills through a variety of creative art projects (9.2.12.F.4; 9.2.12.B.3; 1.4.12.B.3)	I	D	R	R
Demonstrate correct use of appropriate adhesives, and chemicals (9.2.12.F.4)	IDR	IDR	IDR	IDR
Demonstrate proper inventory and storage of supplies (9.2.12.F.5)	ID	ID	R	R
Read and measure accurately with a standard American ruler (9.2.12.B.2)	I	R	R	R
Demonstrate knowledge of alignment, balance, proportion and use of positive and negative space (1.4.12.B.2)	I	ID		IDR
Demonstrate knowledge of color (primary, secondary, tertiary, complimentary) (1.4.12.B.2)	I	D		IDR
Demonstrate knowledge of working in mixed media. (1.3.12.D.2)	I	ID		IDR
Create vector illustrations to be used in design layouts (1.4.12.B.3; 1.1.12.D.2)	I	ID	ID	IDR
Utilize work area in a clean organized manner. (9.1.12.B.4)	IDR	IDR	IDR	IDR
Demonstrate an awareness of art history and how it relates to design and media (1.2.12.A.1,2)	I	D		IDR
Understand the creative process and importance of each step (9.1.12.B.3)	I	D		IDR

Understand of the importance of meeting a deadline (9.1.12.B.3,4; 9.2.12.D.1)	IDR	IDR	IDR	IDR
Demonstrate knowledge of documentation of design time and understanding commercial worth of the profession (9.1.12.B.3,4)		I	ID	IDR
Prepare thumbnails, roughs, and comps (9.1.12.B.2,4)	I	IDR	DR	IDR
Demonstrate knowledge of typography, font styles, point size & layout purposes (9.1.12.B.3)	I	ID	IDR	IDR
Create and understand purpose of logo(s) to brought through on other projects. Ex. Stationary, ad, package, etc. (9.1.12.B.3; 1.3.12.D.4)		I	ID	IDR
Demonstrate knowledge of package design (1.3.12.D.1,4)				IDR
Demonstrate knowledge of basic elements of operation of computers, printers, scanners, and other peripherals such as drawing tablets (9.1.12.B.3)	IDR	IDR	IDR	IDR
Demonstrate knowledge of appropriately enlarging and reducing art with copying and printing (9.1.12.B.3)	ID	IDR	IDR	IDR
Demonstrate knowledge of the differences between vector based and pixel based artwork and the appropriate use for each (9.1.12.B.3; 1.3.12.D.4)	I	D	IDR	IDR
Demonstrate proficiency in Adobe Illustrator including tools, palettes, options and production formats (9.1.12.B.3; 1.3.12.D.4)	I	DR	IDR	IDR
Demonstrate proficiency in Adobe Photoshop including tools, palettes, options and production formats (9.1.12.B.3; 1.3.12.D.4)	I	DR	IDR	IDR
Demonstrate proficiency in Adobe InDesign including tools, palettes, options and production formats (9.1.12.B.3; 1.3.12.D.4)	I	DR	IDR	IDR
Demonstrate proficiency in Using drawing tablets for illustration and digital image composition (9.1.12.B.3; 1.3.12.D.4)	I	D		IDR
Demonstrate proficiency in using digital cameras for artwork, layout, and composition in various lighting conditions (9.1.12.B.2)	I	ID		IDR
Understand print versus web resolution (9.1.12.B.2)	I	IDR	IDR	IDR
Understand difference between RGB, spot color, and CMYK (9.1.12.B.2)	I	IDR	IDR	IDR
Demonstrate knowledge and purpose of copyrighted images, Royalty Free images, the Fair Use Act and their rights and/or limitations (9.1.12.B.2)		I	R	IDR
Mount & Mat artwork in a professional manner (9.1.12.F.4)		I	ID	IDR
Demonstrate knowledge of setting up research reference files (9.1.12.B.3,4)	I	ID		IDR
Demonstrate knowledge of the cost of tools of the industry (9.2.12.E.1)	I	I	DR	DR
Create and revise of a resume for employment (9.1.12.A.4)	I			IDR
Demonstrate knowledge of the many career opportunities related to graphic design (9.1.12.A,2; 1.3.12.D.3)	I	ID	IDR	IDR
Apply knowledge gained through research of trends & styles into design projects (9.1.12.A.4)	I	ID	R	R
Integrate design concepts with materials, skills, and technology (9.1.12.B.3)	I	ID	R	R

Develop ability to critique, defend, & support the integrity of a chosen project (9.1.12.A.4)		ID	R	R
Relate printing terms, concepts, & processes to the prep of digital documents (9.1.12.A.4)		I	ID	IDR
Assess personal strengths and weaknesses (9.1.12.B.3)		I	D	R
Assemble a final portfolio with a variety of design projects (9.1.12.B.3)		I		DR
Present art portfolio in a professional manner (9.1.12.A.4)			ID	IDR

## VII. Pacing Chart

	<b>DAYS 1-45 WEEK 1</b>	<b>WEEK 2</b>	<b>WEEK 3</b>	<b>WEEK 4</b>	<b>WEEK 5</b>	<b>WEEK 6</b>	<b>WEEK 7</b>	<b>WEEK 8</b>	<b>WEEK 9</b>
<b>MP 1</b>	Shop Safety	Production Fundamentals	Production Fundamentals	Understanding Printing	Understanding Printing	Vector-Based Software (Adobe Illustrator) Level 3			
	<b>DAYS 46-90 WEEK 1</b>	<b>WEEK 2</b>	<b>WEEK 3</b>	<b>WEEK 4</b>	<b>WEEK 5</b>	<b>WEEK 6</b>	<b>WEEK 7</b>	<b>WEEK 8</b>	<b>WEEK 9</b>
<b>MP 2</b>	Production Workflow	Production Workflow	Paper	Oversized Graphics	Pixel-Based Software (Adobe Photoshop) Level 3	Pixel-Based Software (Adobe Photoshop) Level 3	Pixel-Based Software (Adobe Photoshop) Level 3	Pixel-Based Software (Adobe Photoshop) Level 3	Production and Finishing Skills
	<b>DAYS 91-135 WEEK 1</b>	<b>WEEK 2</b>	<b>WEEK 3</b>	<b>WEEK 4</b>	<b>WEEK 5</b>	<b>WEEK 6</b>	<b>WEEK 7</b>	<b>WEEK 8</b>	<b>WEEK 9</b>
<b>MP 3</b>	Paper	Understanding Printing	Page Layout Software (Adobe InDesign) Level 3	Paper	Understanding Printing	Production and Finishing Skills			
	<b>DAYS 136-180 WEEK 1</b>	<b>WEEK 2</b>	<b>WEEK 3</b>	<b>WEEK 4</b>	<b>WEEK 5</b>	<b>WEEK 6</b>	<b>WEEK 7</b>	<b>WEEK 8</b>	<b>WEEK 9</b>
<b>MP 4</b>	Vector-Based Software (Adobe Illustrator) Level 3	Vector-Based Software (Adobe Illustrator) Level 3	Pixel-Based Software (Adobe Photoshop) Level 3	Pixel-Based Software (Adobe Photoshop) Level 3	Page Layout Software (Adobe InDesign) Level 3	Page Layout Software (Adobe InDesign) Level 3	Oversized Graphics	Production and Finishing Skills	Production and Finishing Skills

## VIII. Student Handout - Graphic Arts 3

Students will be introduced to Graphic Design and work in an environment that emulates a real-world design studio. This course will focus on building foundations in design and adapting them for the many platforms and devices in which digital content is delivered.

Graphic Arts students are taught about design, layout, typography and color theory. Students learn in a hands-on environment, using industry-related technology and software.

A focus on concept development and problem solving is emphasized and encouraged. This is done through thumbnails sketches, intermediate rough layouts and final comprehensives. The process is repeated for each project for retention and best practices.

Once students have learned the design process, the execution of concepts with the use of technology is emphasized. Students are taught to pay attention to the minute details that are essential to properly finishing a project. Creative and technical skills are necessary to complete projects successfully.

### **PROFICIENCIES:**

*Students will:*

1. Handle tools of the trade and equipment correctly and safely
2. Demonstrate knowledge of digital file organization and archiving
3. Demonstrate a professional work ethic
4. Use effective time management skills in the production of projects
5. Demonstrate craftsmanship (organization, neatness, precision)
6. Understand and practice the characteristics of basic design principles
7. Understand the creative process and importance of each step
8. Apply appropriate software solutions to design problems
9. Articulate and solve basic problems of form and function
10. Identify and apply the critical thinking process to design challenges
11. Cut accurately using an X-Acto knife and mat knife in a safe manner
12. Understand the value of all tools, equipment, and supplies
13. Demonstrate tool skills through a variety of creative art projects
14. Demonstrate correct use of appropriate adhesives, and chemicals
15. Demonstrate proper inventory and storage of supplies
16. Read and measure accurately with a standard American ruler
17. Demonstrate knowledge of alignment, balance, proportion and use of positive and negative space
18. Demonstrate knowledge of color (primary, secondary, tertiary, complimentary)
19. Demonstrate knowledge of working in mixed media
20. Create vector illustrations to be used in design layouts
21. Utilize work area in a clean organized manner
22. Demonstrate an awareness of art history and how it relates to design and media
23. Understand the creative process and importance of each step
24. Understand of the importance of meeting a deadline

25. Prepare thumbnails, roughs, and comps
26. Demonstrate knowledge of typography, font styles, point size & layout purposes
27. Demonstrate knowledge of basic elements of operation of computers, printers, scanners, and other peripherals such as drawing tablets
28. Demonstrate knowledge of appropriately enlarging and reducing art with copying and printing
29. Demonstrate knowledge of the differences between vector based and pixel based artwork and the appropriate use for each
30. Demonstrate proficiency in Adobe Illustrator including tools, palettes, options and production formats
31. Demonstrate proficiency in Adobe Photoshop including tools, palettes, options and production formats
32. Demonstrate proficiency in Adobe InDesign including tools, palettes, options and production formats
33. Demonstrate proficiency in Using drawing tablets for illustration and digital image composition
34. Demonstrate proficiency in using digital cameras for artwork, layout, and composition in various lighting conditions
35. Understand print versus web resolution
36. Understand difference between RGB, spot color, and CMYK
37. Demonstrate knowledge of setting up research reference files
38. Demonstrate knowledge of the cost of tools of the industry
39. Create and revise of a resume for employment
40. Demonstrate knowledge of the many career opportunities related to graphic design
41. Apply knowledge gained through research of trends & styles into design projects
42. Integrate design concepts with materials, skills, and technology