

## **PrintED: National Accreditation and Certification Program**

### **INTRODUCTION TO GRAPHIC COMMUNICATIONS**

#### **Introduction**

1. Define the role of graphics in the free enterprise system.
2. Identify and list print markets and types of print businesses.
3. List printing's ranking among other manufacturing industries.
4. Identify and describe the major printing processes including flexography, gravure, lithography, screen printing, and digital.
5. List the advantages and disadvantages of each major printing process.
6. List typical products produced by each major process.
7. Show a typical business flow of printing from initial concept to final product.
8. List, in order, a typical technical production flow from idea to finished product.
9. Identify and list major occupations in the graphic arts and describe the basic training needed for each.
10. Identify basic salary/wage expectation ranges.
11. Identify and describe basic production equipment used in a printing plant.
12. Identify the types of major companies that employ people with graphic communications skills. Include Commercial Printers; In-Plant Printers; Book Printers; Packaging, Label & Wrapper Printers; Catalogs & Directories Printers; Direct Mail Printers; Business Forms Printers; Financial & Legal Printers; Inserts & Coupon Printers; Magazine & Periodical Printers; Trade Binderies, and Pre-Press Services
13. Read and interpret production information on job docket/ticket.
14. Identify major printing industry associations.
15. Define counterfeiting and copyright laws.

#### **Environmental Health, Safety, and First Aid**

1. Identify location(s) and describe proper use of fire safety equipment in the facility.
2. List safety rules involving flammable liquids.
3. List the steps to be taken in case of injury in the lab.
4. Identify location(s) of first aid kit(s) and eye wash station(s).
5. Read and interpret Material Safety Data Sheets (MSDS).
6. Describe protective safety equipment where needed (gloves, goggles, ear plugs).
7. Describe appropriate safety procedures to follow when operating equipment.
8. Describe approved shop dress code for safe operation including necessary personal safety equipment.
9. Pass a general lab safety test with a score of 80% or above.
10. Identify and use OSHA approved methods to dispose of waste materials.
11. Read, interpret, and follow instructions on warning labels.
12. Identify the safety color code.

#### **Digital File Preparation**

1. Identify various software applications and uses.
2. Describe the difference between a raster image and a vector graphic.
3. List various types of removable storage media.
4. Explain the significance of PDF as it pertains to the printing industry.
5. Explain the difference between supplying PDF files versus native files for print.
6. Identify various file formats and their extensions, i.e. .doc, .qxd, .pdf, .tif, .eps, .rtf, .raw, .jpg, .bmp, .txt, .indd, .psd, .ai, .pm6, .pm7, .pub, .html, .gif, .xls
7. Explain the purpose of a folding dummy.
8. Explain the purpose of imposition.

#### **Image Capture**

1. Explain basic scanning hardware.
2. Explain basic digital camera hardware.
3. Explain and identify the difference between line art and continuous tone originals.

### **Color Theory**

1. Explain additive and subtractive color theory.
2. Explain the effect of lighting on color perception.
3. Explain the effect of the surround on color perception.
4. Explain the significance of standard viewing conditions in the graphic arts industry.
5. Explain the influence of the substrate on color reproduction.

### **Digital File Output**

1. Explain and describe trapping and why it is necessary.
2. Explain the purpose of proofing.
3. Explain the difference between hard and soft proofs.
4. Explain digital platemaking equipment for offset plates.

### **Press Operations (Offset and Digital)**

1. Identify basic safety press procedures.
2. Identify basic press systems.
3. List and describe quality control devices for press (color bars, densitometer, etc.).

### **Bindery Operations**

1. Describe the difference between, advantages/disadvantages of, in-line, off-line, near-line finishing.
2. List basic paper types, weights, grades and classifications commonly used in the printing industry.
3. Explain operational and safety features of a paper cutter.
4. Identify grain direction of paper.
5. Calculate basic paper cuts from a parent sheet.
6. Create an accurate master cutting diagram for making cuts.
7. Identify padding equipment materials and hand tools.
8. Identify stapling and stitching equipment materials and supplies.
9. Identify punching/drilling equipment and tools.
10. Identify folding equipment.
11. Identify basic folds for printed products.
12. Identify collating equipment.
13. Identify die cut products, embossing and foil stamping products and their basic procedures for each; including equipment.
14. Identify and explain different binding methods and applications, including case binding, perfect binding, saddle stitching, and lay-flat.
15. Discuss the mailing and distribution process.

### **Measurement**

1. Measure linear dimensions for printing materials in inches & fractions of inches.
2. Measure type in points and line length in picas.
3. Measure volume for mixing chemicals for pressroom operations.
4. Measure original images for reduction and enlargement using various methods to determine the percentage for final reproduction.

### **Basic Math**

1. Solve addition of whole number problems— two and three digits.
2. Solve addition of fraction problems.
3. Solve addition of decimal problems—two and three digits.
4. Solve subtraction of whole number problems—two and three digits.
5. Solve subtraction of fraction problems.
6. Solve subtraction of decimal problems—two and three digits.
7. Solve multiplication of whole numbers— two and three digits.
8. Solve multiplication of decimal problems— two and three digits.
9. Solve division of whole number problems— two and three digits.

10. Solve various problems that require dividing a given dimension in half.
11. Solve division of decimal problems—two and three digits.
12. Solve decimals to percent conversion problems.
13. Solve percent to decimal conversion problems.
14. Solve basic ratio and proportion problems.
15. Solve basic linear measurement problems.
16. Solve basic type calculation problems.
17. Solve basic liquid measurement problems.
18. Solve conversion problems between English and metric.
19. Solve basic paper cutting calculations.
20. Solve conversion problems between inches and points.
21. Solve word problems that require an understanding of estimating.

### **Job Application and Interpersonal Skills**

1. List desirable work ethics or habits required for industry.
2. Demonstrate how to locate job listings through a variety of sources. (Internet, associations, newspapers, agencies, etc.)
3. Read and explain want ads.
4. Write a personal resume that includes three references.
5. Write a cover letter to obtain a job in the graphic communications industry.
6. Read and complete an employment application form.
7. Practice job interview skills and appearance.
8. Complete a telephone interview for a printing job.
9. Write a follow-up letter.
10. Describe the reasons for making a follow-up telephone call.
11. Evaluate a benefits package for employment.
12. Compare job opportunities to include wages, benefits, & employment responsibilities.
13. Observe a commercial printing operation and identify production departments.

### **PrintED: National Accreditation and Certification Program DIGITAL FILE**

#### **Orientation**

1. Read and interpret production information on job docket/ticket.
2. Identify and list the basic principles of design (i.e., unity, contrast, page proportions, balance, etc.) .
3. Identify and explain line images.
4. Identify and explain continuous tone/ halftone images.
5. Identify basic process color principles and kinds of four-color printing.
6. Define PostScript.
7. Describe each of the following: word processing, illustration, image editing, and page layout software.
8. Design and produce a single-color document using desired fonts, styles, margins, indents, and tabs.
9. Demonstrate the proper selection of appropriate software for word processing, illustration, image editing, and page layout.
10. Demonstrate keyboard typing proficiency, including the use of keyboard shortcuts.
11. Prepare a series of hand drawn sketches or computer generated layouts incorporating appropriate marks (i.e., gutters, register marks, fold lines, etc.).
2. Define removable storage media.
13. Define FTP (File Transfer Protocol).
14. Define preflighting.
15. Preflight a native file using application preflight software and/or a manual checklist.
16. Preflight a PDF file using application preflight software and/or a manual checklist.
17. Define CTP.

## **Type**

1. Measure copy/text in points using a line gauge.
2. Explain x-height, mean-line, base-line, ascenders, descenders, leading, and their roles in measuring and designing with type.
3. Explain caps, lowercase, uppercase, small caps and ligatures.
4. Define dingbats, bullets, rules, and symbols and their uses in publications.
5. Distinguish between display (headline) type & body (text) type by their point sizes and styles.
6. List the basic type styles and their uses.
7. Distinguish between serif and sans serif type styles.
8. Explain letter spacing, tracking, and kerning of type characteristics.
9. Explain word spacing and the relation of em and en in paragraph spacing.
10. Define line spacing and explain the measurement principles for the leading of text.
11. Define the type arrangements: flush left–ragged right, flush right–ragged left, centered, and justified.
12. Explain the difference between TrueType, Type 1, and Open Type fonts.
13. Demonstrate or explain the proper use of loading, displaying and organizing fonts using a font management software application.

## **Page Layout**

1. Select appropriate page layout software for a given job.
2. Demonstrate the use of a digital dictionary; spell checker, and automatic hyphenation.
3. Demonstrate a functional knowledge of computer menus and palettes within desktop publishing software.
4. Demonstrate text alignment, element positioning and rules of page design for printed matter.
5. Proofread manuscript copy and make necessary corrections using basic proofreading marks.
6. Set-up/select appropriate pagination for a given job.
7. Set text with appropriate margins, formatting, gutters, and proper leading.
8. Import copy from a word processing program to a page layout program.
9. Design & produce a document using desired fonts, styles, margins, indents, tabs, & colors.
10. Proofread, edit and make corrections/ adjustments to copy on screen.
11. Import an image into a page layout program.
12. Demonstrate a procedure for cropping digital images.
13. Create a 2-sided, 3-panel brochure using graphics and text.
14. Create a 4-page newsletter using windows, blocks, text, graphics, frames, and headings.
15. Create a 2-page newsletter using drop caps for paragraph openings, wrap-a-rounds (run-a-rounds) and graphics.
16. Create a printed piece using tints, reverses and manipulating type for effect.
17. Produce and output a multi-colored flyer that includes spot color (at least two).
18. Demonstrate knowledge of available page layout program by listing capabilities, advantages and disadvantages of the program.
19. Demonstrate the proper procedures on printing a proof to a monochrome and/or color laser printer or inkjet printer using page layout software.
20. Using page layout software, export a press ready PDF.
21. Describe soft proofing and its advantages/ disadvantages.

## **Image Capture**

1. Identify the difference between continuous tone images and halftone images.
2. Identify scanner hardware, its basic components and uses.
3. Identify basic scanner software, its uses and limitations.
4. Capture a digital image using a scanner or digital camera.
5. Demonstrate appropriate scanner/program operations for line artwork.
6. Demonstrate appropriate scanner/program operations for continuous color/black/white or both.
7. Describe what ICC profile is and their use.
8. Demonstrate ability to color-separate RGB images into CMYK using various ICC profiles.
9. Demonstrate saving scanned images into an appropriate file format.

10. Identify high/low resolution images.
11. Explain the image resolution requirements for various uses (screen versus print versus press).
12. Demonstrate importing scanned digital images into page layout software.
13. Explain the various components and operations of a digital camera.
14. Demonstrate appropriate digital camera operations for image capture.
15. Import digital images from a digital camera into the computer.
16. Download a digital image from a stock photography website or CD.

### **Illustration**

1. Demonstrate the use of keyboard shortcuts/ menus and explain why they are used.
2. Create a design appropriate for a given job using a graphics program.
3. Create a design using tints and fills for a given job using a graphics program.
4. Create a design using manipulated type (rotated, circled, extended, etc.) for a publication.
5. Trace a drawing/photograph using a graphics program.
6. Edit an existing piece of electronic clip art.

### **PDF**

1. Describe the Portable Document Format (PDF).
2. Explain why PDF has become an integral part of the printing industry.
3. List the advantages and disadvantages of PDF.
4. Explain the various methods in which PDFs are created.
6. Describe and distinguish the differences between a PDF, PDF/X-1a, and PDF/X-3 file.
7. Describe and distinguish the differences between a press-quality PDF, a print-quality PDF, and the smallest file-size PDF.

### **Complete Portfolio**

#### **Complete Mock Job Interview**

### **PERSONAL QUALITIES**

Work Effort  
Safety Habits  
Work Area Organization  
On Task Behavior  
Responsibility  
Initiative  
Team Work  
Respect  
Interpersonal Skills