Graphic Communications

(PrintED)

Level I & II

Program Description: The Graphic Communications program is designed to give students an overall understanding of the graphics communication industry and its major operations while teaching competencies that lead to national PrintED certification. PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF), and is a national accreditation and certification program based on industry standards for graphic communications courses of study. Students will demonstrate proficiency in a variety of graphic communications applications.

Level I Introduction to Graphic Communications

Course Objective: Students will have an understanding of the graphic communications industry and its major operations.

> **Unit 1: Industry Overview**
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> **Unit Objective: Students will have an understanding of the printing industry and processes.**
> **Unit Competencies**:
> l. 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: 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 finished product.
> 8. List, in order, a typical technical production flow from idea to finished product.
> 9. Identify these major occupations in the graphic communications industry 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 commercial printing plant.
> 12. Identify the types of major companies that employ people with graphic communications skills.
> 13. Read and interpret production information on a job ticket.
> 14. Identify the major printing industry associations.
> 15. Define counterfeiting and copyright laws.
> 16. Describe the need for security within printing companies and the products they produce.
> 17. Observe a commercial printing operation and identify the production departments.
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> **Unit 2: Environmental, Health, Safety, and First Aid**
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> **Unit Objective: Students will have an understanding of the hazards and precautions necessary in the printing industry.**
> **Unit Competencies:**
> 1.   Identify location 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 the location of first aid kit and eye wash station.
5. Read and interpret Material Safety Data Sheets (MSDS)
6. Describe protective safety equipment.
7. Describe appropriate safety procedures to follow when operating equipment
8. Pass a general lab safety test.
9. Identify approved methods for disposing of waste materials.
10. Read, interpret and follow instructions on warning labels.
11. Identify the safety color code.

Unit 3: Digital File Preparation

Unit Objective: Students will have an understanding of the components of digital file preparation.
Unit Competencies:
1. Demonstrate proficiency in professional prepress software applications and uses.
2. Describe the disadvantages of using office/home-based software for professional graphic purposes.
3. Describe the difference between a raster image and a vector graphic image.
4. List advantages/disadvantages of removable storage media.
5. Explain the significance of PDF as it pertains to the printing industry.
6. Explain the difference between supplying PDF files versus native files for print.
7. Identify various file formats and their extensions.
8. Explain the purpose of a folding dummy.
9. Explain the purpose of imposition.

Unit 4: Image Capture

Unit Objective: Students will be familiar with the aspects of digital capture.
Unit Competencies:
1. Explain basic scanning hardware.
2. Explain basic digital camera hardware.
3. Explain and identify the difference between line art and continuous tone originals.

Unit 5: Color Theory

Unit Objective: Students will understand the effect of color in print.
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 communications industry.
5. Explain the influence of the substrate on color reproduction.

Unit 6: Digital File Output

Unit Objective: Students will demonstrate competency in preflighting files.

Unit Competencies:
1. Explain and describe trapping and why it is necessary.
2. Explain the purpose of proof reading.
3. Explain the difference between hard and soft proofs.
4. Explain digital platemeaking equipment for offset plates.
5. Explain the difference between static output and variable output.
6. Explain the process of creating digital output from a computer file.

Unit 7: Press Operations (Offset and Digital)

Unit Objective: Students will understand the operation of press systems.
Unit Competencies:
1. Identify basic safety press procedures.
2. Identify basic press systems.
3. List and describe quality control devices for press.

Unit 8: Type

Unit Objective: Students will demonstrate and understanding of the various types of type and their application.
Unit Competencies:
l. Explain x-height, mean line, baseline, ascenders, descenders, leading and their roles in measuring and designing with types.
2. Explain the use of caps, lowercase, uppercase, small caps, ligatures and glyphs.
3. Define the use of glyphs in publications.
4. Distinguish between display (headline) type and body (text) type by their point sizes and typestyles.
5. List the basic type style classifications and their uses.
6. Describe the appropriate use of type family members.
7. Define the use of type arrangements, e.g., flush left-ragged right, flash right-ragged left, centered and Justified.

Unit 9: Measurement/Math

Unit Objectives: Students will demonstrate proficiency in basic measurement and math concepts.
Unit Competencies:
1. Measure linear dimensions for printing materials in inches and 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.
5. Perform basic computational skills involving fractions, decimals and percents.
6. Convert fractions and decimals.
7. Convert inches and decimals.
8. Solve basic ratio and proportion problems.

9. Solve basic paper cutting calculations.
10. Solve word problems that require an understanding of estimating.

Unit 10: Job Application and Interpersonal Skills

Unit Objective: Students will demonstrate knowledge of tasks required to apply for and obtain employment upon completion of program.
Unit Competencies:
1. Describe and demonstrate work ethics that should be exhibited by employees in the graphic communications industry.
2. Demonstrate how to locate job listings through a variety of sources.
3. Read and interpret the content of want ads and job postings.
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.
7. Describe ways to prepare for a successful job interview
8. Prepare for a job telephone interview by participating in a mock-interview.
9. Describe the reasons for job interview follow-up.
10. Write a letter or email to follow-up job interview.
11. Evaluate an employment benefits package.
12. Compare job opportunities to include wages, benefits, and employment responsibilities.
13. Demonstrate or explain the proper use of loading, displaying and organizing fonts using a font management software application.

Level II Digital File Preparation

Unit 1: Orientation

Unit Objective: Students will demonstrate proficiency in baric graphic communications skills.
Unit Competencies:
1. Read and interpret production information on a job docket/ticket.
2. Identify and list the basic principles of design.
3. Identify and explain line images and appropriate resolutions.
4. Identify and explain continuous tone/halftone images and appropriate resolutions.
5. Identify basic process color principles and methods of reproduction.
6. Define PostScript.
7. Prepare a series of hand-drawn sketches or computer-generated layouts incorporating appropriate marks.
8. Describe the types and procedures for using removable storage media.
9. Define preflighting and its purpose.
10. Preflight a native file using application preflight software and/or a manual checklist.
11. Preflight a Portable Document Format (PDF) file using application preflight software and/or a manual checklist.
12. Define computer-to-plate computer-to-press and variable data printing.

Unit 2: Bindery Operations

Unit Objective: Students will understand the process and equipment utilized in binding.
Unit Competencies:
1. Describe the differences between, and the advantages/disadvantages of: in-line; off-line; and 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 and explain its importance.
5. Calculate basic paper cuts from a parent sheer.
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 procedures/equipment used for each.
14. Identify and explain different binding methods and applications.
15. Describe the mailing and distribution process.

Unit 3: Page Layout

Unit Objective: Students will demonstrate knowledge of page layout and the applications necessary to create documents.
Unit Competencies:
1. Select professional software for page layout.
2. Demonstrate the use of digital dictionary and spell checker.
3. Demonstrate proper line and page breaks including hyphenation, widows and orphans.
4. Demonstrate text alignment, vertical justification, and object alignment and distribution.
5. Apply appropriate paragraph formatting to text.
6. Place or get text from a word processed document.
7. Design and produce a document using specified type faces, sizes, leading margins, indents, tabs, and colors.
8. Identify appropriate professional software for inputting words, creating illustrations, editing images and laying out pages.
9. Place or get images.
10. Demonstrate cropping images.
11. Create a two sided, three-panel brochure using graphics and text.
12. Create a multi-page document using master pages, automatic folios, and paragraph style sheets, levels of headings, sidebars, text inset, masthead, text and graphics.
13. Create a document using tints, reverses and manipulated type.
14. Produce a multi-colored flyer that includes at least two spot colors and output separations.

15. Demonstrate soft proofing using an appropriate profile and explain why it is used.
16. Upon completion of a job, demonstrate how to preflight, proof (hard and soft), package, and create an output-appropriate PDF.

Unit 4: Image Capture

Unit Objective: Students will demonstrate proficiency in capturing images from a variety of sources.
Unit Competencies:
1. Identify the difference between continuous tone images, halftone images and line art.
2. Describe uses and limitations of basic scanner software.
3. Explain the various components and settings of a digital camera.
4. Demonstrate appropriate scanner/program operations for continuous tone color and grayscale images.
5. Transfer images from a camera and scanner to a host computer.
6. Describe what an International Color Consortium (ICC) profile is and its use.
7. Demonstrate how to convert Red-Green-Blue (RGB) images in Cyan-Magenta-Yellow-Key/black (CMYK) using various ICC profiles.
8. Demonstrate saving scanned images into an appropriate file format.
9. Given an image, determine whether it is high or low resolution.
10. Explain the image resolution requirements for various uses.
11. Download a digital image from a stock photography website or compact disc and resize according to specifications provided.
12. Using bitmap editing software, retouch, crop, make modifications, color corrections, and levels adjustments to prepare an image to print correctly on a printing press.

Unit 5: Illustration

Unit Objective: Students will demonstrate proficiency displaying illustrations using proper formatting and graphics.
Unit Competencies:
1. Demonstrate a functional knowledge of computer menus, shortcut keys, and palettes in illustration software.
2. Create a vector graphic using tints, fills, and color.
3. Create a vector graphic using manipulated type.
4. Trace a bitmap drawing and convert to a vector.
5. Edit an existing piece of vector art.

Unit 6: Portable Document Format (PDF)

Unit Objective: Students will demonstrate proficiency in working in PDF.
Unit Competencies:
1. Explain why the PDF is an integral part of the printing industry.
2. Explain the difference between a PDF and native application files.
3. List the advantages and disadvantages of PDF.
4. Explain the various methods used to create PDF's.
5. Create a PDF from a native application file.
6.   Describe the differences between the PDF standards.
7. Describe why some PDF's are not appropriate for print production.
8. Demonstrate how to make minor corrections to PDF file.

Certifications Offered:
   PrintED Certification (Graphic Arts Education and Research Foundation)

Articulation Agreements: College of Southern Maryland