Oklahoma CTE

Orientation to Graphic Communications (2012)

Adopted 2012

Industry Overview

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: flexography, gravure, lithography, 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: sales representative, customer service representative, prepress technician, press operator, bindery operator, and management personnel.
10. Identify basic salary/wage expectation ranges.
11. Identify and describe basic production equipment used in a commercial printing plant, including: computer workstation; proofing device; platesetter; scanner; offset press; digital press; paper cutter; folder; saddle stitcher; perfect binder; paper padder; and, paper drill.
12. Identify the types of major companies that employ people with graphic communications skills, including: commercial printers; in-plant printers; book printers; packaging, label and wrapper printers; catalogs and directories printers; direct mail printers; business forms printers; financial and legal printers; inserts and coupon printers; magazine and periodical printers; trade binderies; and, pre-press services.

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Read and interpret production information on a job ticket.

	14. Identify these major printing industry associations: National Association for Printing Leadership (NAPL); Printing Industries of America (PIA) and the local PIA affiliate; Flexographic Technical Association (FTA); Specialty Graphic Imaging Association (SGIA); and, AIGA, the professional association for design.
	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 (live or virtual) and identify the production departments.
Environmental Health, Safety, and First	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, if needed (e.g., gloves, goggles, ear plugs, lab dress, etc.).
	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.
Digital File Preparation	1. Identify professional prepress software applications and uses, including: page layout (QuarkXPress, InDesign); image editing (Photoshop); illustration (Illustrator); Portable Document Format (PDF) generation and editing (Acrobat, PitStop); and, imposition (Preps).
	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.
	List advantages/disadvantages of removable storage media.

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	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: .doc; .qxd; .pdf; .tif; .eps; .rtf; .raw; .jpg; .bmp; .txt; .indd; .psd; .ai; .pub; .html; .gif; .xls; .zip; .dmg; .png; .dng.
	8. Explain the purpose of a folding dummy.
	9. 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. 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.
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.
	5. Explain the difference between static output and variable output.
	6. Explain the process of creating digital output from a computer file.
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.).
Bi	Describe the differences between, and the advantages/disadvantages of: inline; off-line; and, near-line finishing

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	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 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 procedures/equipment used for each.
	14. Identify and explain different binding methods and applications, including: case binding; perfect binding; saddle stitching; and, lay-flat.
	15. Describe the mailing and distribution process.
Measurement	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.
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.
	Solve subtraction of whole number problems—two and three digits.
	Solve subtraction of fraction problems

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	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 basic paper cutting calculations.
	19. Solve word problems that require an understanding of estimating.
Job Application and Interpersonal Skills	1. Describe 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 (e.g., Internet, job boards, help wanted ads, job fairs, agencies, etc.).
	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 form.
	7. Describe ways to prepare for a successful job interview.
	8. Prepare for a job telephone interview by participating in a mock interview conducted by a teacher, parent, or another student.
	9. Describe the reasons for job interview follow-up.
	Write a letter or email to follow-up a job interview.

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11. **Evaluate an employment benefits package.**

12. **Compare job opportunities to include wages, benefits, and employment responsibilities.**