

Graphics Communications/Printing (10.0305)

Cross-reference to Show-Me standards (main report)

Measurable Learner Objective and Task Statement	Knowledge (Content)	Performance (Goals)	(GATF 97/IML) Abbreviated National Skills Standards
A. Appreciate and apply all personal and work place safety procedures	CA 3, HP 6, HP 7, SC 8	1.4, 1.5, 3.1, 4.1 4.3, 4.7	
1. Identify types, purposes, and the operation of fire extinguishers and suppression resources.			S.3
2. Demonstrate appropriate work place safety practices (e.g., lockout/tagout, chemical, electrical, hand tools, power tools, PPE, ventilation, and environmental hazards).			S.2, 3, 6
3. Recognize when first aid is needed for occupational injuries and follow proper procedures.			S.3
4. Apply Material Safety Data Sheet (MSDS) requirements.			S.5
5. Apply local, state, and federal standards and effects on the printing industry (e.g., OSHA).			S.1, S.4
B. Plan and process job orders	CA 1, CA 4, MA 1	1.6, 3.2, 3.5, 3.8, 4.1	
1. Check specifications and planning.			Core Workflow Knowledge
2. Estimate job costs (e.g., labor and supplies).			Core Workflow Knowledge
3. Compute customer's cost (planning and scheduling).			Core Workflow Knowledge
4. Compare estimates with actual production costs.			Core Workflow Knowledge
C. Prepare customer layouts (conventional)	CA 4, MA 4, FA 1, FA 2	1.8, 2.2, 2.5, 3.2, 3.3, 3.5	
1. Communicate (e.g., electronically or hard copy) printing requirements (e.g., photographs and headings) to layout person.			
2. Indicate enlargement or reduction percentages and resolution requirements on photos.			
3. Indicate typefaces and point sizes to be used.			
4. Make dummy layout of multi-page printed product for signature specifications.			
5. Produce a comprehensive layout.			
6. Create pdf files for remote proofing.			
7. Revise layouts to customer specifications.			

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D. Apply typography to printing	MA 1, CA 1, CA 3, FA 3, FA 4	1.5, 1.8, 2.2, 2.3, 3.1, 4.1	
1. Measure copy/text in points and picas using a line gauge.			Core Measurement Skills
2. Identify x-height, base-line, ascenders, descenders, and their roles in measuring and designing with type.			Core Measurement Skills
3. Identify caps, lowercase, uppercase, small caps, and ligatures.			Core Prepress Skills
4. Identify dingbats, bullets, rules, and symbols and their uses in publications.			Core Prepress Skills
5. Distinguish between display (headline) type and body (text) type by their point sizes and styles.			Core Printing Knowledge
6. Explain the basic type styles and their uses.			Core Printing Knowledge
7. Explain the "weight" and "posture" of type.			Core Printing Knowledge
8. Define fonts and families.			Core Printing Knowledge
9. Explain type character letterspacing and kerning.			Core Printing Knowledge
10. Explain word spacing and the relation of em and en in paragraph spacing.			Core Printing Knowledge
11. Define line spacing and explain the measurement principles for the leading text.			Core Printing Knowledge
12. Define type alignments (e.g., flush left, flush right, centered and justified).			Core Printing Knowledge
E. Performing electronic imagine operations: Explain and demonstrate basic electronic imaging operations	CA 1, CA 3, CA 4, FA 1, FA 2	1.5, 1.8, 2.2, 2.3, 3.1, 3.2, 4.1	
1. Apply production information on a job jacket/ticket.			
2. Demonstrate the basic principles of design (e.g., unity, contrast, page proportions, and balance) on a given project.			
3. Identify the four basic process colors and kinds of color printing.			Core Printing Knowledge
4. Identify basic desktop publishing equipment.			Core Prepress Skills
5. Explain desktop publishing limitations and capabilities.			Core Prepress Skills
6. Explain the difference in quality of imagesetter output and laser printer output.			Core Prepress Skills

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7. Distinguish between word processing, page layout and graphic software (e.g., Photoshop, Illustrator, Pagemaker, and Quark).			Core Prepress Skills
8. Demonstrate file management operations (e.g., opening, copying, saving, and deleting files).			A1.1.4
9. Prepare layouts incorporating appropriate marks (e.g., gutters, register marks, and fold lines).			Core Printing Knowledge
10. Prepare a dummy for a multipage signature.			A1.1.8
11. Prepare embedded fonts for printing applications.			A1.1.3
F. Performing electronic imaging operations: Demonstrate scanning and graphics program procedures	CA 3, FA 2, FA, 3, FA 4	1.7, 1.10, 2.1-5, 1.4, 2.7, 3.1, 3.4, 4.1	
1. Operate scanner/program for line artwork.			Acq2.1.1
2. Operate scanner/program for continuous/halftone copy.			Acq2.1.1
3. Activate a graphics-generating program and demonstrate a functional knowledge of commands, codes, menus, or hand tools and procedures for their uses.			Acq2.2.2
4. Draw an appropriate design using a graphics program.			Core Prepress Skills
5. Create a graphics program design using tints, fills and paint.			Core Prepress Skills
6. Create a publication design using manipulated type (e.g., rotated, circled, and extended).			Acq1.3.1
7. Trace a drawing or photograph using a graphics program.			Core Prepress Skills
G. Performing electronic imaging operations: Layout a page consistent with industry standards	CA 1, CA 3, CA 4, CA 5, FA 1, FA 2, FA 4, MA 1, MA 2	1.4, 1.6, 2.1, 2.2, 2.4, 2.5, 3.1, 3.2, 3.5, 4.1	
1. Select page layout software for a given job.			A1.1.6
2. Activate a page layout program and demonstrate a functional knowledge of computer commands, codes, menus, or palette for the software in use.			A1.1.5
3. Demonstrate rules of page design for printed matter (e.g., text alignment and element positioning).			A1.1.6
4. Set up column grids for electronic page layout according to job specifications.			A1.1.7
5. Set up/select appropriate pagination for a given job.			A1.1.7

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6. Set text (e.g., appropriate margins, formatting, gutters, leading, headings, page cross overs).			A1.1.3
7. Flow copy from word processing program to page layout program.			A1.1.5
8. Proofread, edit, and make corrections/adjustments to copy on screen.			O3.1.1
9. Download fonts.			O5.2.3
10. Place graphics/scanned images from an existing file into a publication.			A1.1.5
11. Crop graphics electronically.			A1.2.1
12. Create a two-sided, three-panel brochure using graphics and text for publication.			A1.1.2
13. Create a four-page newsletter using windows, blocks, text, graphics, frames, and headings.			A1.1.2
14. Create a two-page newsletter using kerned letters for paragraph openings, wraparounds (runarounds) and graphics.			A1.1.2
15. Create a printed piece using tints, reverses and manipulated type for effect.			
16. Produce a multicolor flyer using electronic spot color separations.			Core Printing Knowledge
17. Produce a trapped element indicating trap settings.			O1.1.2, 3, 4
H. Operate a process camera	FA 1, FA 2, FA 4	1.8, 1.10, 3.2, 3.3, 4.5	
1. Clean and maintain camera and darkroom areas.			Acq1.2
2. Sort work to be photographed into line, halftone and color copy.			Acq1.1
3. Perform exposure tests (line exposure).			Acq1.1
4. Use camera filters if necessary for appropriate color copy.			Acq1.1
5. Expose line work with high-contrast film.			Acq1.1
6. Determine screen density range.			Acq1.1
7. Determine continuous tone copy density range with densitometer or gray scale.			Acq1.1

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8. Determine exposures through use of halftone calculator or computer-integrated system.			Acq1.1
9. Expose photograph using high-contrast film and contact halftone screen.			Acq1.1
10. Use duplicating film.			Acq1.1
I. Process film consistent with industry and safety standards	MA 1, SC 1	3.1, 3.2, 3.7, 3.8, 4.1, 4.7	
1. Mix processing chemicals.			Acq1.1
2. Develop film to proper density.			Acq1.1
3. Run and evaluate test strip from automatic film processor.			Acq1.1
4. Process negative using automatic film processor.			Acq1.1
5. Inspect negatives for density, quality, and size.			Acq1.1
J. Perform contact printing	MA 1, MA 5, SC 1	3.1, 3.2, 3.8, 4.7	
1. Make exposure tests on a contact frame with duplicating and contact film.			
2. Make a contact print or positive by the contact method.			
3. Expose for reverse choke and spreads by contact printing.			O4.2.2
4. Expose combination negatives with pin register by contact printing.			
5. Use daylight contacting and duplicating films.			
K. Perform conventional image operations	CA 3, MA 1, MA 5, FA 1, FA 2	2.1, 2.5, 3.1, 3.2, 3.4, 4.1, 4.7	
1. Create multiple exposures incorporating the register punch system.			
2. Draw all reference and centering lines on the masking sheets.			
3. Tape negatives in position on flat (imposition) and label.			O4.1.3
4. Open all areas of material to be printed.			

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5. Opaque imperfections on negative.			
6. Place and secure halftones and screen tints.			O4.2.3
7. Add registration marks and trim marks.			
8. Inspect finished flat for accuracy.			O4.2.1
9. Check flat against copy and dummy layout.			O4.2.1
L. Prepare, present, and analyze proofs	CA 3, CA 5	2.1-2, 2.5	
1. Make a silverprint or blueline proof in a vacuum frame.			
2. Identify color proofing systems and their differences.			O3.2.1
3. Explain the importance of proofing.			O3.1.1
4. Show proofs to customers.			O3.1.1
5. Make changes and corrections to flat.			O3.2.1
6. Make revised proofs.			O3.2.1
7. Create a digital proof for pre-imaging inspection.			O3.2.1
M. Create plates consistent with industry and safety standards	CA 1, CA 3, CA 4, CA 5, SC 1	1.4, 1.8, 2.3, 2.6, 3.1, 3.7-8	
1. Check flat for imperfections, scratches, blocked images, and imposition.			P4
2. Position flat and expose plate using single or multiple burns.			O6.1.5
3. Test and maintain chemicals for proper development.			O6.1.4
4. Maintain plate processor.			O6.2.1
5. Delete images from plate.			O6.1.5
6. Inspect plate for accuracy and quality.			O6.1.6

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7. Preserve plate for future use.			O6.2.1
N. Operate and maintain a press consistent with industry and safety standards	FA 1, FA 2, FA 3, MA 1, MA 2, MA 3, CA 3, SC1	1.4, 1.8, 3.1-3, 3.2, 3.6-8	
1. Describe an offset printing unit (e.g., major parts and systems).			Core Printing Knowledge
2. Prepare dampening system.			P1
3. Measure and mix dampening fountain solution.			P1
4. Maintain fountain solution pH/conductivity.			P1
5. Set up feeder and delivery for different sheets and set guides.			PTS2, 3
6. Air, jog, and condition paper.			PTW2
7. Load stock into press feeder.			PTW2, PTS5
8. Mount plate on press.			P2
9. Adjust impression to caliper of paper.			P2
10. Inspect and pack blanket and plate cylinders.			P5, 6
11. Put dampening fountain solution in press.			P1
12. Set dampening form rollers.			P1
13. Ink up press.			I1
14. Square image up on paper.			P2
15. Adjust ink fountain screws and maintain color.			I4
16. Register printing images to each other.			P10
17. Set ink form rollers and vibrator roller to appropriate pressure.			I1
18. Use reflection densitometer to measure ink density.			QC2

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19. Perforate and score on press.			
20. Run solid color.			I1
21. Run screens/halftones.			
22. Run multi-color work using PMS colors.			I2
23. Run process color job.			
24. Print single color job on carbonless paper.			
25. Set gauge for spray powder.			
26. Remove plate and gum, if necessary.			P12
27. Wash press and ink rollers.			P12
28. Remove, clean, and store dampening systems.			PM2
29. Maintain press (e.g., preventative, lubrication, and minor mechanical malfunctions).			PM3, PM4
O. Perform screen printing consistent with industry and safety standards	FA 1, FA 2, CA 1, CA 5, MA 5	1.1, 1.4, 1.6, 2.1, 3.2, 3.6, 4.1, 4.7	
1. Distinguish between various types of frames and their benefits.			
2. Demonstrate the ability to correctly stretch and tension mesh on a roller frame.			
3. Produce a multicolor textile design in tight register using electronic spot color separations.			Core Printing Knowledge
4. Demonstrate an understanding mesh variables and their impact on mesh selection for different types of screen print jobs.			
5. Perform exposure tests on different stencil materials.			
6. Print a variety of one-color jobs on an assortment of substrates.			Core Printing Knowledge
7. Print on a dark substrate using a white under base.			
8. Sharpen a squeegee using a squeegee sharpener.			

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9. Demonstrate an understanding of squeegee variables and their impact on squeegee selection for different types of screen print jobs.			
10. Clean all screen-printing tools thoroughly and properly.			PM2
11. Demonstrate an understanding of stencil types, and their appropriate application.			
12. Prepare a mesh for stencil application and removal (e.g., clean, degrease, and proper drying).			PM2
13. Demonstrate correct application techniques for different stencil materials.			
14. Demonstrate the correct technique for registering multiple colors on flat substrates.			Core Printing Knowledge
P. Perform vinyl applications consistent with industry and safety standards	FA 1, FA 2, CA 3, CA 5, MA 1, MA 2	1.1, 1.4, 1.6, 2.1, 3.2, 3.3, 4.1, 4.7	
1. Trace a drawing or photograph using a graphics program.			
2. Apply transfers to substrates using a transfer machine.			
3. Properly clean and correctly load vinyl into a printer, plotter, or cutter device adjusting the pinch rollers accordingly.			
4. Prepare cutter/printer by adjusting cut depth, loading printer cartridges, and replacing blades as needed.			
5. Accurately cut and weed vinyl to eliminate waste.			
6. Troubleshoot cutting/weeding problems.			
7. Apply transfer tape and align vinyl onto a variety of substrates using masking tape.			
8. Apply vinyl to a variety of substrates with and without the use of tack reducing liquids to reduce bubbles and wrinkles.			
Q. Perform finishing operations consistent with industry and safety standards	CA 3, FA 1, MA 1, MA 2, SC2	1.8, 1.10, 3.1, 3.2, 3.3, 3.6, 4.1	
1. Jog paper manually or by machine.			PTW2
2. Prepare cutting layout.			B1.2
3. Make cuts according to cutting sequence or other instructions given.			B1.1
4. Cut paper with single-knife hydraulic paper cutter.			B1.1

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5. Set up and run folder.			B2.1
6. Perforate/score with wheel attached to delivery end of paper folder.			B2.2
7. Perform saddle- and side-wire binding (wire staples).			B4.2, B5.1
8. Identify different binding methods and their uses (e.g., perfect, thermal, and case binding).			B5.1
9. Perform spiral wire or plastic cylinder binding.			B3.6
10. Perform padding.			
11. Pad carbonless stock.			
12. Trim job after binding.			B3.5
13. Drill stock.			B5.1
14. Gather and collate by hand and machine.			B5.1
15. Perforate/score using rotary perforating machine.			B2.2
16. Perform preventive maintenance on finishing equipment.			PM2, PM3
R. Identify and handle papers consistent with industry standards	CA 1, CA 3, FA 1, MA 1, HP 4	1.4, 1.8, 3.2-3, 3.6, 3.8, 4.1	
1. Receive paper, check invoices, and check for damage in transit and store.			PTW2
2. Handle paper without damaging, spilling or shifting its load in stock.			PTW2
3. Identify paper weights, types, and grain.			Core Printing Knowledge
4. Complete a paper figuring diagram.			
S. Prepare and package printed products for mailing	CA 1, CA 3, FA 1, MA 1, HP 4	1.4, 1.8, 3.2-3, 3.6, 3.8, 4.1	
1. Prepare product for delivery (e.g., heat shrink wrapping, boxing, banding, addressing).			M&D2.1
2. Weigh letters or packages on postal scale to determine mailing costs.			M&D2.1

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3. Prepare mailings for postal delivery.			M&D2.1
T. Perform specialty operations	CA 1, FA 1, MA 1	1.4, 1.8, 1.10, 3.2	
1. Use numbering machine.			
2. Laminate materials.			
U. Demonstrate leadership skills in the classroom, industry, and society	CA 1, CA 4, CA 6, SS 6, HP 2	2.1, 2.3, 2.6, 4.3, 4.4, 4.6, 4.8	
1. Demonstrate an understanding of SkillsUSA, its structure, and activities.			Core Interpersonal Skills
2. Demonstrate an understanding of one's personal values.			Core Interpersonal Skills
3. Perform tasks related to effective personal management skills.			Core Interpersonal Skills
4. Demonstrate interpersonal skills.			Core Interpersonal Skills
5. Demonstrate etiquette and courtesy.			Core Interpersonal Skills
6. Demonstrate effectiveness in oral and written communication.			Core Communication Skills
7. Develop and maintain a code of professional ethics.			Core Interpersonal Skills
8. Maintain an appropriate professional appearance.			Core Interpersonal Skills
9. Perform basic tasks related to securing and terminating employment.			
10. Perform basic parliamentary procedures in a group meeting.			
V. Explain and demonstrate skills in a specialization area identified by the instructor			

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