Massachusetts Career Technical Education

Graphic Communication Framework

2014 

DESE is in the process of updating all CTE Frameworks. This framework was adopted in 2014. More information about the process to update frameworks will be provided in DESE’s CCTE Newsletter.

[Strand 2: Technical Knowledge and Skills](#_bookmark0)

* 1. Graphics Communications Safety Knowledge and Skills
     1. Demonstrate an understanding of safety practices related to Graphic Communications.
        1. Utilize a systematic safety program which meets OSHA requirements and promotes a safe working environment.
        2. Demonstrate safety procedures when using all equipment.
        3. Demonstrate preventive maintenance and lubrication procedures for all equipment.
        4. Demonstrate awareness that all machine guards are in place and operating properly before using equipment.
        5. Identify the existence of pinch points located behind the machine guarding on all equipment.
        6. Utilize Lockout/Tagout system.
     2. Performance Examples:

Demonstrate effective safety practices

* + - * Students will operate work environment equipment safely.
      * Students will maintain a clean and orderly work environment.
      * Students will maintain good safety records and carefully document injuries.
      * Students will comply with safety personnel policies (e.g.,, personal protection equipment: safety shoes, hearing protection, glasses, gloves, etc.).
      * Students will create information and training materials to promote a safe workplace.
      * Students will create a chemical container label that quickly communicates potential hazards such as how the chemical reacts with other chemicals, whether it is flammable, and what type of protective equipment should be used when handling it.
      * Students will comply with all safety requirements for operating binding, finishing, and mailing and distribution equipment by following manufacturer’s instructions and all program policies.
      * Students will use proper procedures to ensure that safety devices are in working order.
      * Students will follow shop reporting procedures for unusual wear, machine noises, and other faults
  1. Historical Importance of Communication and Printing
     1. Demonstrate an understanding of the significant role of printing in the history of mankind.
        1. Describe the role of communication in the advancement of learning and education.
        2. Describe the historical impact of communication in establishing advanced civilizations.
        3. Describe the role of communication and printing in the rapid dissemination of information ushering in the age of enlightenment.
        4. Describe the role of movable type in increasing the pace of the spread of knowledge.
        5. Describe the significance of communication and printing as related to the First Amendment to the Constitution of the United States.
        6. List and describe the historical consequences of failures in communication.
        7. Explain the impact on comprehension of material in the usage of various delivery methods (oral, paper, electronic, etc.).
     2. Performance Examples:

Define the paths used to disseminate information to a large audience over the course of history.

* + - * Students will create an image that contains a message of importance to an audience of one’s peers for each of the following: 10,000 BCE, 5,000 BCE, 500 AD, 1500 AD, 1775 AD, present.
      * Students will decide the hierarchy of importance to be shown in a diagram.
      * Students will define the consequences of failure to reach the intended audience.
      * Students will determine the best path to reach the greatest percentage of the audience.
  1. Job Engineering Skills for Graphic Communications
     1. Demonstrate project management skills through the use of communication and collaboration.
        1. Describe procedures that prepare products for publishing/distribution.
        2. Describe responsibilities of production personnel.
        3. Choose appropriate methods of invoicing and delivery.
        4. List practices used to schedule project workflow.
        5. State the importance of obtaining approvals/sign-offs.
        6. Discuss methods for planning and coordinating production.
        7. Demonstrate techniques used to monitor production quality.
        8. List ways to match customer needs and expectations with production process requirements (e.g., layout dummies/mock ups).
        9. Determine and explain the potential for use of variable-data processes.
        10. List criteria used to analyze and critique a product.
        11. Compare and contrast various printing processes, including digital, offset, flexography, and screen printing, etc.
        12. Demonstrate ecologically sound printing practices.
        13. Define and explain the purpose of the Sustainable Forestry Initiative (SFI) and Forest Stewardship Council (FSC) certified printing processes.
        14. Explain the purpose of the International Standards Organization (ISO).
        15. Describe and follow gripper margin requirements to accommodate intended output device.
     2. Demonstrate knowledge of fundamental measuring systems.
        1. Define units of measurement and proper uses of each.
        2. Demonstrate measuring skills (rulers, scales and percentage/proportion wheels).
        3. Demonstrate accurate use of weight and measure.
        4. Demonstrate methods and techniques of paper counting.
     3. Demonstrate effective customer service practices.
        1. Estimate costs and produce quotation for customer.
        2. Establish a budget.
        3. Utilize proper etiquette when communicating by telephone.
        4. Demonstrate positive interpersonal skills in customer communications.
        5. Identify accurate information gathering skills needed to complete job tracking and production methods.
        6. Demonstrate proper order entry method.
        7. Complete the required job order ticket for either digital or offset with all customer contact and job information.
        8. Place follow up calls or emails to make sure customer was satisfied with the product and service.
        9. Demonstrate fluency with cloud-based client proofing systems and procedures.

2.C.03 Performance Examples:

Accept printing request from customer

* Students will greet customer and carefully listen to their request and determine their print production needs.
* Students will collect all necessary information to satisfy customer’s requirements, and production process requirements.
* Students will complete order entry forms and methods to prepare quotation
* Students will collaborate with classmates and teacher to investigate path of workflow necessary to successfully deliver high quality products.
* Students will determine equipment, processes, and supply costs anticipated for production.
* Students will contact customer with authorized written quotation detailing terms, delivery options and any other pertinent details.
  1. Digital File Preparation
     1. Apply knowledge of digital prepress systems.
        1. Identify specific computer platforms and associated operating systems.
        2. Identify and perform procedures for backing up and archiving files.
        3. Describe major imaging operations and workflow through the design and layout process (e.g., CTP computer to plate, computer to film).
        4. Identify software applications used in print and web media.
        5. Understand and utilize current industry appropriate software.
     2. Performance Example: Students will accept printing request from customer.

Repurpose customer file for use on multiple output platforms (i.e. web, print, mobile device

* + - * Students will receive customer file.
      * Students will correct, interpret, and convert native file format for PDF output.
      * Students will configure PDF file specifications for appropriate output device.
      * Students will output PDF file for intended use.
    1. Performance Examples:
       - Students will create a basic trouble shooting. worksheet/flowchart used to correct basic computer performance problem(s).
       - Student will assess and remedy networking, printing, and/or slow performance issues.
       - Student will subsequently create a troubleshooting flowchart detailing each item.
  1. Graphic Design Practices
     1. Demonstrate an understanding of the principle rules of typography.
        1. Compare and contrast the use of body copy and display type.
        2. Identify type selection through the use of font classification, styles and families.
        3. Compare and contrast the differences between font formats (e.g., postscript, true type, open type).
        4. Explain the proper procedures for loading and utilizing font management systems.
        5. Demonstrate keyboard skills, including short cuts and function keys.
        6. Read, convert, and measure using the pica and point system.
        7. Practice proper principles of font usage (kerning, tracking, leading, and alignments).
        8. Practice guidelines of type readability and legibility.
     2. Performance Examples:

Create typography specimen booklet

* + - * Identify and label parts of a type character.
      * Collect various type classifications samples.
      * Group type according to type families.
      * Collect various alignment samples of type.
      * Collect samples of body and display type.
    1. Demonstrate an understanding of the principal elements of design.
       1. Define principles of design (balance, contrast, unity, rhythm, and proportion).
       2. Define elements of design (line, shapes, mass, texture, color, etc.).
       3. Explain and adhere to the rules of basic color theory as they apply to the imaging process.
       4. Explain the fundamentals of how light and paper characteristics affect color perception.
       5. Compare and contrast raster and vector images and list their uses.
       6. Create and manipulate a vector image using illustration software.

2.E.02 Performance Examples:

* Create a printed piece which demonstrates the use of principles and elements of design including: balance, contrast, unity, rhythm, proportion, line, shapes, mass, texture, and color.
  + 1. Manipulate and scan images and materials.
       1. Scan materials into appropriate file formats and resolutions.
       2. Describe and apply basic digital photographic principles as used in printing.
       3. Improve the color and tonal balance of an image for reproduction purposes.
       4. Retouch, modify, and correct images using various image-editing techniques.
       5. Manipulate raster image using photo-editing software.
       6. Re-purpose an existing photo/illustration that was previously used in a CMYK printed project, to remove moire’ pattern.
    2. Demonstrate effective page layout practices as it applies to the production process.
       1. Create documents with a professional page layout program.
       2. Determine appropriate size, resolution, and format, and place graphic into a document.
       3. Create multiple page documents using master pages and style sheets.
       4. Import copy from a word processing program into a page layout program.
       5. Save documents in a variety of formats (native, PDF, EPS).
       6. Organize, select and label artwork for identification of links.
       7. Prepare file for separations and output.
       8. Convert or repurpose print files for multiple media (web, mobile media, and presentation).
       9. Manage the flow of information from a wide variety of sources for variable data output.
       10. Identify and demonstrate basic proofreading marks.
       11. Proofread and edit a document using proofreading marks.
       12. Edit a marked-up document using proofreader marks.
       13. Explain the impact of prepress (imaging) and finishing processes on press operations.
       14. Describe gripper margin requirements to accommodate intended output device.

2.E.04 Performance Examples:

Create artwork and provide proof for approval:

* Set up artwork for job as described above.
* Choose typestyles, fonts, colors to be used in production.
* Using rules of typesetting, determine font sizes, line lengths and page layout characteristics to create a mock-up of the finished piece.
* Locate and store in appropriate folder all images and text to be used in finished artwork.
* Set-up artwork to reflect all gripper margin requirements of intended output device.
* Follow rules of contrast, repetition, alignment and proximity in creation of artwork.
* Submit artwork for proofreading purposes.
* Make changes and corrections and create PDF file for proofing by customer.
* Upload PDF proof on protected cloud-based server for remote customer access.
* Review customer comments, changes, or alterations and repeat as necessary.
* Design and layout a stationary package to include the following: letterhead, business card, envelope.
* Design and layout a brochure using correct resolution, bleeds, and trim specifications. Produce and fold.
  1. Preparation and Assembly Practices for Output to Various Media
     1. Demonstrate appropriate file management practices.
        1. Demonstrate the use of folders and hierarchical organizational structures in file management.
        2. Identify and correct common file errors (for input and output).
        3. Explain the benefits of PDF documents and their settings.
        4. Identify and describe file types (jpeg, tiff, eps, ps).
        5. Identify and describe file sizes and explain how they affect output.
     2. Demonstrate effective pre-flight practices.
        1. Perform pre-flight operations and save to storage media.
        2. Collect and package digital files for output and portability.
        3. Soft proof job.
        4. Impose job for the proper layout.
     3. Demonstrate effective output practices.
        1. Prepare document for file output.
        2. Operate output devices to produce print to pre-defined client specifications.
        3. Identify and correct common output errors.
        4. Expose, process, and store film and/or plates.
        5. List considerations to identify the correct plate materials (paper, polyester, metal) for a given job.
        6. Demonstrate maintenance routines and techniques used to maintain and prolong film processor and/or plate-making equipment life.
        7. Describe and demonstrate the use of input and output devices (e.g., digital camera, laser printer).
        8. Explain the importance of image control marks to identify centers, bleeds, trims, register marks, side guides, and signature collation.
        9. Explain and demonstrate trapping, knockouts, and overprints.

2.F.03 Performance Examples: Assemble document for output.

* Build and prepare a document including, trapping and preflight.
* Create and inspect proofs.
* Prepare/correct a document for output.
  1. Offset Print Production Practices
     1. Demonstrate an understanding of feeder and registration systems.
        1. Describe the various types of feeder systems and their components.
        2. Explain paper classifications and characteristics of various printing substrates.
        3. Describe procedures for jogging and loading paper stock into the feeder.
        4. Describe the various types of registration systems and their components.
        5. Describe techniques used to maintain register.
        6. Set up the feeder and registration systems accurately.
     2. Demonstrate an understanding of inking and dampening systems.
        1. Describe the components of the inking system.
        2. Explain the characteristics of different inks.
        3. Describe the proper way to measure and mix ink.
        4. Describe procedures for preparing and maintaining the inking system.
        5. Explain the characteristics of various chemicals used in the printing process.
        6. Describe the components of the dampening system.
        7. Describe the function of fountain solution.
        8. Describe procedures for preparing and maintaining the dampening system.
        9. Set up the inking and dampening systems accurately.
     3. Demonstrate an understanding of cylinder systems.
        1. Describe the components of the various types of cylinder systems.
        2. Determine methods of packing plates and blankets following the manufacturer’s specifications.
        3. Identify basic cylinder configurations.
        4. Compare plate characteristics.
        5. Identify the causes of and list solutions for image transfer problems.
        6. Describe methods of mounting plates.
        7. Describe method for installing a blanket.
        8. Set up the cylinder system accurately.
     4. Demonstrate an understanding of delivery systems.
        1. Describe the components of the various types of delivery systems.
        2. Set up the delivery system accurately.
        3. Identify various drying systems (IR, spray, thermography).
     5. Demonstrate effective use of make-ready on an offset press.
        1. Set up feeder and registration systems.
        2. Prepare the ink and inking system.
        3. Prepare dampening system.
        4. Prepare the cylinder system (mount plates, set impression).
        5. Set up delivery and drying systems.
     6. Demonstrate an understanding of printing operations on an offset press.
        1. Demonstrate the use of common printing hand tools and measuring instruments.
        2. Identify common printing problems and their resolutions.
        3. Perform printing operations.
        4. Demonstrate the use of quality control standards and techniques: image and color quality, fit and registration, ink and water balance.
        5. Monitor feeder, registration inking, dampening, cylinder, delivery, and drying systems.
        6. Demonstrate effective maintenance schedules by adhering to manufacturer’s press maintenance schedule.
     7. Demonstrate an understanding of thermography printing practices according to current industry standards and manufacturers’ specifications.
        1. Demonstrate maintenance of equipment following manufacturer’s specifications.
        2. Demonstrate how to add additive to ink.
        3. Demonstrate the application of thermography powder.
        4. Set up drying conveyor.
        5. Demonstrate cool down procedures.

2.G.07 Performance Examples:

Demonstrate effective offset print production.

* Students will set up, accurately print, and wash up an offset press.
* Students will perform make ready on an offset press (set up 8.5” x 11” 20# stock).
* Students will produce 500 sheets of a single color document.
* Students will demonstrate the use of quality control standards and techniques.
* Students will produce a multi-color job.
  1. Additional Printing Processes used in Graphic Communications
     1. Demonstrate effective digital printing practices according to current industry standards.
        1. Configure electronic files for digital output.
        2. Manage RIP workstation / job queue.
        3. Input appropriate specifications for document scanning.
        4. Scan a document using a document handler or flatbed on digital printer.
        5. Load substrate into the appropriate feeder.
        6. Adjust digital printer for the type of stock.
        7. Make proper color or black and white adjustments for best results.
        8. Configure settings for finishing unit on digital printer.
        9. Add toner/ink to printer.
        10. Change waste container.
        11. Investigate and report on nano-technology advances which pertain to the print industry.
     2. Performance Examples:

Demonstrate effective digital production.

* + - * Students will send a job that requires adjusting position on the RIP and configure settings for finishing.
      * Students will demonstrate effective use of crop marks and bleeds.
      * Students will adjust color balance to achieve the best results.
    1. Demonstrate procedures used for screen printing.
       1. Perform maintenance to equipment as per manufacturer’s specifications.
       2. Compare the difference between manual process and automatic process.
       3. Compare the difference between mesh counts.
       4. Prepare positives for production.
       5. Add emulsion to a screen.
       6. Expose screen using an exposure unit and exposure calculator.
       7. Prepare screen for production (masking and taping).
       8. Explain ink curing process for a variety of inks.
       9. Set and align print heads and off contact.
       10. Register multiple screens for multicolor print.
       11. Print image using a squeegee.
       12. Explain the need for incorporating a flash unit.
       13. Demonstrate the use of a flash unit.
       14. Demonstrate curing/drying techniques, using infrared thermometer.
       15. Demonstrate reclaiming and degreasing of screens.

2.H.02 Performance Examples:

* Students will select appropriate screen for assignment.
* Students will add emulsion to a screen.
* Students will align positive with screen and expose.
* Students will mask out screen.
* Students will set up, print, and reclaim.
* Students will calibrate print head.
* Students will print and cure image on substrate at designated location.
  + 1. Demonstrate plotting and sign making practices.
       1. Demonstrate maintenance of equipment following manufacturer’s specifications.
       2. Prepare plotting for different substrates.
       3. Prepare and execute file for plotting.
       4. Demonstrate proper weeding technique.
       5. Prepare material for use.
    2. Demonstrate an understanding of wide format printing practices.
       1. Explain resolution requirements and guidelines for wide-format output.
       2. Perform preventive maintenance routines to ensure quality product.
       3. Navigate paper selection menu to match paper to intended output.
       4. Prepare document to be printed on various substrates.
       5. Mount document on backing.
       6. Laminate large format print.
       7. Trim and finish large format print, including grommets.
    3. Demonstrate an understanding of embroidery practices according to industry standards and manufacturers’ specifications.
       1. Perform maintenance to machine.
       2. Demonstrate threading of machine.
       3. Install needles as to manufacturer’s specifications.
       4. Demonstrate maintenance and threading of bobbin.
       5. Demonstrate hooping of garment.
       6. Describe the backing to be used for each process.
       7. Apply appliqué to garment.
       8. Prepare and send file to machine.
       9. Demonstrate trimming of backing.
    4. Demonstrate an understanding of dye-sublimation printing practices.
       1. Describe resolution requirements and guidelines for dye-sub output.
       2. Describe transfer material requirements for intended substrate.
       3. Perform preventive maintenance routines to ensure quality product.
       4. Prepare document to be printed on various substrates.
       5. Navigate substrate selection menu to match paper requirements for intended destination.
       6. Align transfer paper to substrate and secure against movement during transfer.
       7. Demonstrate handling procedures appropriate to substrate being used.
  1. Finishing Practices
     1. Demonstrate an understanding of the principles of binding and finishing.
        1. Identify common imaging and press problems that could adversely affect binding, finishing and distribution quality.
        2. Identify the importance of input quality on binding and finishing.
        3. Explain the importance of image control marks to identify centers, bleeds, trims, register marks, side guides, and signature collation.
        4. Explain how paper characteristics affect binding and folding operations.
        5. Describe workflow operations undertaken within finishing and distribution operations.
        6. Establish the sequence of production operations within the finishing and distribution area.
        7. Minimize paper waste and spoilage prior to printing, and manage waste disposal in finishing and distribution operations.
        8. Cut materials to given specifications, utilizing stock cutting math formula.
        9. Demonstrate proper folding steps and processes.
        10. Perform saddle-stitching and side-stitching finishing techniques.
        11. Perform mechanical binding techniques.
        12. Set up and use a perforation or score.
        13. Collate signatures.
        14. Demonstrate adhesive or perfect binding techniques.
        15. Trim printed materials.
        16. Drill holes with drill press.
        17. Perform numbering process.
        18. Set up and laminate a job with either heat set laminate or cold set laminate.
        19. List procedures for storing raw materials and finished products.
     2. Performance Examples:

Demonstrate effective finishing practices.

* + - * Students will set up paper cutter to cut 23”x35” stock into 11.25”x17.25”using stock cutting math formula.
      * Students will produce 48 page dummy for electronic imposition.
      * Students will set up paper folder and fold 11.25”x17.25”stock to 8.625”x 11.125”.
      * Students will number and collate twelve folded signatures into a 48 page dummy.
      * Students will set up and saddle stitch dummy.
      * Students will set up paper cutter and perform the final trim to 8.5”x11”.
      * Students will set up paper drill for standard three-hole position, and drill dummy.
    1. Performance Examples:

Demonstrate effective perforation/scoring procedures.

* + - * Students will set up and align perforation/scoring wheels to perforate/score sheet at designated location.
    1. Performance Examples:

Demonstrate effective adhesive binding procedures

* + - * Students will set up paper cutter to cut stock for 10 pads that measure 5.5 x 8.5 with chipboard backing.
      * Students will jog and load sheets onto padding press.
      * Students will firmly clamp and apply padding compound.
      * Students will competently clean all tools and work area.
      * Students will separate pads into finished product.

# [Embedded Academic Crosswalks](#_bookmark0)

### [Embedded English Language Arts and Literacy](#_bookmark0)

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| --- | --- | --- |
| CTE  Learning Standard Number | Strand Coding Designation Grades ELAs  Learning Standard Number | Text of English Language Arts Learning Standard |
| 2.B.01 | (WHST)8 | Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance  on any one source and following a standard format for citation.  Performance Example:  Each student will research, prepare, and present a paper on the history of the graphic industry and the importance of the industry to our current lifestyle. |
| 2.B.01.06  2.B.01.07 | (RST) 1 | Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the  text, including determining where the text leaves matters uncertain.  Performance Example:  Groups of students will design a project focusing on the ramifications of failures in communication in world history. Students will define the paths used to disseminate information to a large audience over the course of history.  Students will create an image that contains a message of importance to an audience of one’s peers for each of the following: 10,000 BCE, 5,000 BCE, 500 AD, 1500 AD, 1775 AD, and today. Students will report out as a group on their findings. |
| 2.C.01.10 | (WHST)9 | Draw evidence from literary or informational texts to support analysis, reflection, and research.  Performance Example:  Develop TQM (total quality management) checklist for use for customer feedback. |
| 2.C.01.11 | (RST) 9 | Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.  Performance Example:  Students will create a basic worksheet/flowchart to display various printing processes. Flowchart will include pros and cons of each process as well as operational and safety requirements for each with appropriate documentation. |
| 2.C.01.08  2.C.03.09 | (WHST)6 | Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of  technology’s capacity to link to other information and to display information flexibly and dynamically.  Performance Example:  Create a printed piece by identifying the aesthetic effects of a media presentation and identify and evaluate the techniques used to create them. |
| 2.E.04.10  2.E.04.11  2E.04.12 | (RST) 4 | Determine the meaning of symbols, key terms, and other domain- specific words and phrases as they are used in a specific scientific or technical context relevant to *grade*.  Performance Example:  Students will demonstrate a knowledge and use of editing/proofreading symbols to finalize a document for production/presentation. |
| 2.G.06.06 | (RST) 8 | Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating  or challenging conclusions with other sources of information.  Performance Example:  Students will demonstrate the use of quality control standards and techniques by developing a safety operations document in their own words which describes the proper operation and maintenance of machinery with appropriate documentation. |

### [Embedded Mathematics](#_bookmark0)

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| CTE  Learning Standard Number | Math Content Conceptual Category and Domain Code Learning Standard Number | Text of Mathematics Learning Standard |
| 2.C.01.08 | 6.RP.1 | Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.  Performance Example:  Students will collect and analyze necessary information to satisfy customer requirements, and production process  requirements. |
| 2.C.03.01 | 6.NS.3 | Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.  Performance Example:  Students will create a quotation derived from customer specifications to include terms and delivery options and submit for customer approval. |
| 2.C.03.02 | 7.EE.3 | Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between  forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.  Performance Example:  Students will determine production workflow by comparing equipment, processes, and anticipated labor costs. |
| 2.C.03.05 | 7.SP.2 | Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate  multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.  Performance Example:  Students will collaborate with department specialists to investigate production workflow necessary to successfully deliver high quality products. |
| 2.E.04.02 | 6.G | Solve real-world and mathematical problems involving area, surface area, and volume.  Performance Example:  Student will set up artwork for the job as described above. Choose typestyles, fonts, colors to be used in production. Using rules of typesetting, determine font sizes, line lengths and page layout characteristics to create a mock-up of  the finished piece. |
| 2.E.04.01 | 7.G.2 | Draw (freehand, with ruler and protractor, and with technology)  geometric shapes with given conditions.  Performance Example:  Students will set-up artwork and/or rough comp to reflect all customer specifications. |
| 2.I.01.03 | 7.G.1 | Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and  reproducing a scale drawing at a different scale.  Performance Example:  Students will use customer mock-up to produce an enlarged or reduced document according to accepted design principles. |

[Industry Recognized Credentials](#_bookmark0) (Licenses and Certifications/Specialty Programs)

Occupational Safety and Health Administration—OSHA 10-hour card

**Print ED**

###### What is PrintED?

PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF), is a national accreditation program based on industry standards for graphic communications courses of study at the secondary and post-secondary levels.

###### What are the benefits of accreditation?

To the student, PrintED provides a career pathway to enter the workplace with verifiable credentials, or to pursue further education with college credit already in hand. To the educator, PrintED ensures an instructional program that is current and relevant, consistent across the nation, and aligned with industry standards. To the employer, PrintED graduates promise a knowledgeable, trained, and skilled workforce.

###### Does PrintED have defined standards?

PrintED has identified six standards that encompass the elements of a solid training program. In order for a program to receive accreditation, it must meet these standards in at least two areas of accreditation.

**Standard 1:** *Instructional Staff*

The instructional staff must maintain technical competency, meet the requirements to be an approved PrintED instructor, and meet all state and local requirements for accreditation.

**Standard 2:** *Facility, Equipment & Safety*

The physical facility must be adequate to permit achievement of the program goals and performance objectives. In addition, the equipment must be of the type and quality found in the industry. Both the facility and equipment must meet today’s safety standards.

**Standard 3:** *Instruction*

Program curriculum must include current industry tasks, safety procedures, acceptable work habits and ethics, and testing and evaluating procedures.

**Standard 4:** *Purpose*

Program must have clearly stated goals related to student services and employers served.

**Standard 5:** *Administration*

Administration must insure that instructional activities support and promote the goals of the program.

**Standard 6:** *Program Budget*

Funding must be provided to meet the approved program goals and performance objectives.

###### Print ED. Accreditation/Reaccreditation Flow Chart

1. Instructor submits completed application//$1800 fee to GAERF. GAERF assigns an Evaluation Team Leader (ETL) to serve as a mentor to the instructor.
2. Instructor completes the Instructor Data Form (IDF), which determines whether the individual meets the qualifications to become an approved PrintED instructor.
3. ETL conducts onsite facility inspection, scores the IDF, provides instruction as to how to assemble the Standards Binders, and submits *Facility, Equipment and Safety Inspection Report* to GAERF.
4. The instructor assembles Standards Binders to document that competencies are being taught in each accreditation area. Once the Standards Binders have been completed, the ETL will notify GAERF and self-evaluation documents will be sent to the instructor.
5. Instructor and at least two members of the Advisory Committee conduct a self-evaluation of the program, by using the *Self-Evaluation Packet* and *Standards & Evaluation Guides* provided by GAERF. The instructor forwards the documents and the binder containing Standards One, Two, Four, Five, and Six to the program’s ETL for review.
6. ETL reviews documents and the Standards Binder, and makes recommendations to the instructor if changes must be made to the program. If requirements are met, instructor and ETL determine a date for a final evaluation to be scheduled.
7. ETL informs GAERF of the final evaluation date. GAERF forwards final evaluation materials to the instructor. The instructor forms a final evaluation team of local industry professionals and submits the *Team Member Assignment* form and *Accreditation Notification* form to GAERF thirty days prior to the event.
8. GAERF forwards final evaluation materials to ETL*.* Evaluation team completes evaluation.
9. ETL submits *Final Evaluation Report* to GAERF.
10. GAERF awards five-year accreditation or reaccreditation to the program, forwards the institution a plaque, and lists the accredited program on the GAERF website.

###### PrintED/SkillsUSA Skill Connect Assessments

PrintED/SkillsUSA Skill Connect Assessments are aligned with PrintED/SkillsUSA competencies and are available in:

* + Advertising and Design
  + Graphic Communications
  + Screen Printing Technology
  + Digital File Preparation/Digital File Output
  + Offset Press Operations/Binding and Finishing

The online assessments test technical skills and knowledge through questions enriched with animations, videos, drawings and photographs. Assessments may be used as pre-assessments or post-assessments. Immediate grading and feedback is provided. Students who receive passing scores on these examinations receive certificates imprinted with the PrintED, GAERF and SkillsUSA logos.

To purchase assessments visit: [www.workforcereadysystem.org](http://www.workforcereadysystem.org/)

$10 members (PrintED student or SkillsUSA member)

$20 nonmembers

Skill Connect Assessments provide career aspirants with a reliable means to measure their progress in acquiring occupational competencies needed in the early stages of professional development.

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##### ADOBE CERTIFICATIONS

Visual Design: Foundations of Design and Print Production

*Visual Design* is a year-long, project-based curriculum that develops skills in design and print production using Adobe tools. You can use the curriculum in graphic design education or in more general career and technical education.

*Visual Design* develops key digital communication skills such as design, project management, and graphic and print technology. Each project builds on lessons learned previously.

*Visual Design* aligns with the International Society for Technology in Education (ISTE) National Educational Technology Standards (NETS) for Students (2007) as well as the new Adobe Certified Associate Visual Communication objectives to prepare students for certification."

adobe.com

**The certification is run through** certiport.com. The school can become a testing site and administer the tests online to students for a fee (see pricing below). There is a couple of options available to purchase tests, either a site license or on a voucher by voucher basis. The site license includes practice exams and unlimited retakes. Voucher only includes the test and up to 2 retests per voucher. In this option the practice exams are extra. The split is approximately 35 exams.

Site license is $3175.00 for 12 months.

Individual vouchers are $68.75 per test. Practice exams are $500.00.

Once a student passes the exam they will be mailed a certificate which validates their entry level