North Dakota Graphic Communications Education

Content Standards

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North Dakota Department of Career and Technical Education
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North Dakota Technical Education Standards Process

This set of standards was reviewed by the North Dakota state Graphic Communications secondary and post-secondary teachers.

Questions regarding these standards can be directed to:

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Adapted from Association for Print Technologies, Graphic Arts Education and Research Foundation (GAERF), Introduction to Graphic Communications, Latest Version 2014.

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Career and Technical Education Standards Introduction

Mission

The mission of the State Board for Career and Technical Education (CTE) is to work with others to provide all North Dakota citizens with the technical skills, knowledge, and attitudes necessary for successful performance in a globally competitive workplace.

Vision

The State Board for Career and Technical Education (CTE) is committed to providing career awareness, work readiness skills, occupational preparation, and retraining of workers throughout the state. Career and technical education will span all educational levels, providing youth with exploration opportunities and the foundation skills needed to enter the world of work while providing adults with skills needed to enter, re-enter, or advance in the workforce.

Goal

North Dakota Career and Technical Education's goal is to create a competitive and knowledgeable work force. This is accomplished through a variety of educational program areas that are organized to prepare students for careers in their chosen fields, to take leadership roles, and balance their multiple roles in life. CTE programs prepare students with the knowledge and skills to make informed career choices, to integrate and apply academic concepts, to prepare for successful participation in a global society, and to engage in lifelong learning.

Standards Development Process

Standards development is a multi-phase process. Existing and/or industry standards are the basis for the North Dakota Program Standards. A team of expert secondary and postsecondary teachers, business and industry representatives, and the state program supervisor draft the standards document. Once the document is finalized, the State Board for Career and Technical Education approves and adopts the standards.

Course Frameworks are also developed by the writing team. A framework includes a brief overview of the course content, topical units of study, and identifies the standards recommended for inclusion within the course. The frameworks are tailored to prepare young people for the opportunities in North Dakota. School Districts will use the frameworks as a guide for developing curriculum that reflects local needs.

Key Principles of Career and Technical Education

We believe that Career Technical Education:

1. **Draws its curricula, standards, and organizing principles from the workplace.**
   The workplace provides the context, objectives, and organizing constructs for instruction and assessment. The workplace also defines the standards of performance necessary, including those required for academic, technical, and employability skills.

2. **Is a critical and integral component of the total educational system, offering career-oriented benefits for all students.**
   CTE classes offer educational benefits to students pursuing careers requiring specific technical skills as well as providing a strong foundation for those pursuing a traditional four-year (or more) degree.

3. **Is a critical and integral component of the workforce development system, providing the essential foundation for a thriving economy.**
   Preparation of a well-prepared, qualified workforce requires solid academics, good work ethics, and specific technical skills as well as the ability to communicate, work with others, solve problems, and use information. CTE contributes directly to this preparation by providing a curriculum tied to specific workplace requirements.

4. **Maintains high levels of excellence supported through identification of academic and workplace standards, measurement of performance (accountability), and high expectations for participant success.**
   Career Technical Education is committed to continuous improvement, attention to industry certification, and the development of highly qualified teachers.

5. **Is robust and flexible enough to respond to the needs of the multiple educational environments, customers, and levels of specialization.**
   CTE involves a large and complex delivery system that (1) integrates career exploration, (2) provides effective tools for organizing all curricula, (3) facilitates the teaching and use of technology, (4) is integrated into the total learning experience, (5) enhances the learning of academic subjects, (6) teaches broad occupational skills, (7) includes all aspects of the industry, (8) teaches how to balance family and work responsibilities, (9) provides job-specific training, (10) is offered at multiple levels of the educational continuum, and (11) is delivered through a variety of educational environments.

Table of Contents

Standard 1	***GRAPHIC COMMUNICATIONS INDUSTRY OVERVIEW***	
Topic 1.1	**Graphic Communications Industry**	
	Student Competencies	
	1.1.1	Define the graphic communications industry.
	1.1.2	Describe the size and economic value of the industry: a. Employees b. Number of establishments c. Revenue d. Profit Levels
	1.1.3	Identify the types of businesses and organizations that comprise the industry.
	1.1.4	Review the types of products and services provided by the industry.
	1.1.5	Evaluate the use and value of different types of printing to a customer.
	1.1.6	Describe the markets that use printing: a. Direct Mail b. Books c. Magazines d. Stationery e. Packaging
	1.1.7	Compare the role (cost and effectiveness) of print compared to other communication mediums: a. Television b. Radio c. Internet d. Social Media
	1.1.8	Assess examples of different types of communications mediums.
	1.1.9	Identify local and national graphic communications associations.
	1.1.10	Describe the purpose of local and national graphic communications associations.

Topic 1.2	Printing Process	
	Student Competencies	
	1.2.1	Describe common printing processes: a. Flexography b. Gravure c. Letterpress d. Offset Lithography e. Screen Printing f. Digital
	1.2.2	List common products produced by each printing process.
	1.2.3	Identify samples of each printing process.
	1.2.4	Discuss advantages and disadvantages of each printing process: a. Economic b. Delivery timeframe c. Physical characteristics of printed piece
	1.2.5	Define counterfeiting, copyright, and intellectual property infringement.
	1.2.6	Identify the issues and challenges associated with counterfeiting, copyright and intellectual property infringement in the printing industry.
	1.2.7	Discuss emerging technologies related to printing: a. 3D Printing b. Nanography c. Production Inkjet d. Quick Response Codes (QR) e. Cross media Communications f. Augmented Reality (AR) g. Data driven print h. Cloud based composition

Topic 1.3	How Printing is Produced	
	Student Competencies	
	1.3.1	Describe the function and use of basic production equipment used in a commercial printing plant: a. Computer Workstation b. Scanner c. Proofing Device d. Platesetter e. Offset Lithographic press f. Digital Press g. Paper Cutter h. Folder i. Saddle Stitcher j. Perfect Binder k. Paper Padding Press l. Paper Drill
	1.3.2	Define workflow.
	1.3.3	Review common steps in a typical print workflow: a. Digital file preparation b. Print c. Finish
	1.3.4	Describe the purpose of a job ticket.
	1.3.5	Locate key production information on a job ticket.
	1.3.6	Identify departments within printing organization through live or virtual observation.
	1.3.7	Describe the role and responsibilities of departments within printing organization: a. Sales b. Estimating c. File Preparation d. Printing e. Binding f. Shipping

Standard 2	***SAFETY AND HEALTH***	
Topic 2.1	**Safety Rules**	
	Student Competencies	
	2.1.1	Review applicable national and local governmental safety regulations.
	2.1.2	Review school graphic lab's safety regulations.
	2.1.3	Explain the use and locations of safety interlocks on machinery.
	2.1.4	Identify safety regulations in place at the school graphic lab as they relate to proper paper movement.
	2.1.5	List the school graphic lab Standard Operating Procedures (SOP) for spills.
	2.1.6	Explain the proper procedures to clean up any spills at school graphic lab.
	2.1.7	List the proper procedures when handling cleaning chemicals.
Topic 2.2	**Safety Data Sheets**	
	Student Competencies	
	2.2.1	Describe a Safety Data Sheet.
	2.2.2	Explain the use of Safety Data Sheet.
	2.2.3	Evaluate Safety Data Sheets in place in the school graphic lab.

Standard 3	*FILE CREATION TO OUTPUT*	
Topic 3.1	**File Creation and Design**	
	Student Competencies	
	3.1.1	Identify common components of page: a. Text b. Illustrations c. Photographs
	3.1.2	Proofread and edit page of text, making corrections/adjustments as specified by instructor.
	3.1.3	Define these terms: page layout, image editing and illustration.
	3.1.4	Review professional software applications: a. Page Layout i.e. Adobe InDesign, QuarkXPress b. Image Editing i.e. Adobe PhotoShop c. Illustration i.e. Adobe Illustrator
	3.1.5	Review office/home-based software applications: a. Microsoft Office b. Google Docs
	3.1.6	Create a page that includes fonts, styles, margins, indents, tabs, photographs and illustrations using professional layout software.
	3.1.7	Create and print a portfolio to showcase your work.
	3.1.8	Assess the significance of Adobe Acrobat Portable Document Format (PDF) as it pertains to the graphic communications industry.
	3.1.9	Create PDF of page that includes photographs and illustrations.
	3.1.10	Compare the differences between supplying PDF files versus native files for print.
	3.1.11	Define RGB and CMYK color reproduction.
	3.1.12	Discuss the Pantone color process.
	3.1.13	Contrast color reproduction viewed on digital display (Monitor, TV, tablet, smartphone) versus print.
	3.1.14	Show the effect of lighting on printed color perception.
	3.1.15	Identify different types of graphics: a. Line art b. Continuous tone c. Raster d. Vector
	3.1.16	Describe pixels per inch resolution.
	3.1.17	Cite examples of various file formats and their extensions: .doc;.pdf; .tif; .eps; .jpg; .bmp;.indd; .ai;.xls;.ePub.

	3.1.18	Review minimum resolution requirements for different reproduction devices: a. Screen display b. Print
	3.1.19	Compare use of scanner versus lens based image capture (digital camera).
Topic 3.2	**Print Output**	
	Student Competencies	
	3.2.1	Describe Preflighting.
	3.2.2	List common file issues found during preflight.
	3.2.3	Collect examples of four printed color applications: a. Sunday newspaper retail insert b. Cereal package c. Clothing catalog d. High end brochure (automotive, cosmetic)
	3.2.4	Compare color quality reproduction requirements of each.
	3.2.5	Define Imposition.
	3.2.6	Define Trapping.
	3.2.7	Define Bleed.
	3.2.8	Gather samples of full bleed and no bleed printed examples.
	3.2.9	Explain the purpose of proofing.
	3.2.10	Compare hard and soft proofs.
Topic 3.3	**Digital Output**	
	Student Competencies	
	3.3.1	Review how content may be published digitally: a. Publishing to the Web b. Social media c. Mobile devices
	3.3.2	Define e-publishing / e-books.
	3.3.3	Compare the advantages / disadvantages of e-publishing/e-books versus traditional books.

Standard 4	***OFFSET PRESS***	
Topic 4.1	**Offset Lithographic Press**	
	Student Competencies	
	4.1.1	Discuss the imaging process of an offset lithographic press.
Topic 4.2	**Components of Offset Lithographic Press**	
	Student Competencies	
	4.2.1	Review components of an offset press: a. Describe a Printing Unit i. Inking System ii. Water System iii. Plate Cylinder iv. Blanket Cylinder v. Impression Cylinder b. Describe an offset printing plate c. Describe an offset blanket
	4.2.2	Compare feeding system of a sheet fed press (roll, sheetfed).
Topic 4.3	**Quality**	
	Student Competencies	
	4.3.1	Describe the use of color bars.

Standard 5	***DIGITAL PRESS***	
Topic 5.1	**Digital Press**	
	Student Competencies	
	5.1.1	Discuss the imaging process of a digital press.
Topic 5.2	**Components of Digital Press**	
	Student Competencies	
	5.2.1	Review components of digital presses: a. Digital Front End Raster Image Processor (RIP) b. Print Engine i. Toner based (Electrophotography) ii. Inkjet c. Delivery systems i. Roll to roll ii. Stacker iii. In-line finishing

Standard 6	***SUBSTRATES***	
Topic 6.1		
	Student Competencies	
	6.1.1	Discuss the impact that substrates have on a printed project.
	6.1.2	Identify wood pulp based paper substrates.
	6.1.3	Review common paper types, weights, grades and classifications commonly used in the printing industry.
	6.1.4	List common page and sheet sizes used in United States and Europe.
	6.1.5	Describe Parent Sheet.
	6.1.6	Identify non-traditional specialty substrates.
	6.1.7	Gather examples of pulp, plastic and metal based substrates.
	6.1.8	Discuss sustainability / recyclability of pulp based substrates.
	6.1.9	Debate sustainability of print versus digital media.
	6.1.10	Describe Forest Stewardship Council (FSC) certified papers.

Standard 7	***BINDERY, FINISHING, AND DISTRIBUTION***	
Topic 7.1	**Bindery and Finishing**	
	Student Competencies	
	7.1.1	Determine grain direction of paper.
	7.1.2	Explain the importance of grain direction.
	7.1.3	Describe a folded signature.
	7.1.4	Describe bindery and finishing options: a. Loose leaf b. Saddle Stitch c. Perfect Bind d. Case Binding e. Lay Flat Binding f. Die Cutting g. Embossing / Debossing h. Foil Stamping
	7.1.5	Contrast use and benefits of each bindery option.
	7.1.6	Create 16 page saddle stitch booklet.
Topic 7.2	**Finishing Equipment**	
	Student Competencies	
	7.2.1	Describe in-line, near-line and off-line finishing.
	7.2.2	Identify commonly used finishing and binding equipment and supplies: a. Padding b. Stapling c. Stitching d. Punching / Drilling e. Folding f. Collating

Standard 8	***MATH AND MEASUREMENT***	
Topic 8.1	**Industry Standard Math**	
	Student Competencies	
	8.1.1	Describe English and Metric measurement systems.
	8.1.2	Define Points and Picas.
	8.1.3	Demonstrate the measurement of type in points and line length in picas.
	8.1.4	Calculate reduction or enlargement percentage of original photograph to final size.
	8.1.5	Determine optimum layout for minimizing waste when cutting smaller sheets out of larger parent sized sheet of paper.

Standard 9	***JOB APPLICATION AND INTERPERSONAL SKILLS***	
Topic 9.1	**Industry Career Skills**	
	Student Competencies	
	9.1.1	Review roles and responsibilities of employment positions in the graphic communications industry: a. Sales representative b. Customer service representative c. Estimator d. Designer e. Database programmer f. Pre-media technician g. Press operator h. Bindery operator i. Management
	9.1.2	Describe work ethic skills that should be exhibited by employees in the graphic communications industry.
	9.1.3	Describe the positive and negative impact of social media on a personal brand or perception.
	9.1.4	Identify basic salary/wage expectation ranges for major occupations in the graphic communications industry.
	9.1.5	Locate job listings through a variety of sources (e.g., Internet, job boards, "Help Wanted" advertisement, job fairs, agencies, etc.).
	9.1.6	Gather job postings for positions in the graphic communications industry.
	9.1.7	Write a personal resume that highlights the candidate's experience, skills, and talents, and includes references.
	9.1.8	Write a cover letter for a specific job that differentiates the candidate from other job seekers.
	9.1.9	Demonstrate how to customize a resume and cover letter to match a job listing and employer.
	9.1.10	Complete an employment application form.
	9.1.11	Discuss and demonstrate ways to prepare for a successful interview.
	9.1.12	Identify common interview questions.
	9.1.13	Prepare responses to common interview questions.
	9.1.14	Develop appropriate questions to ask prospective employers during interviews.
	9.1.15	Conduct a mock job interview conducted by a teacher, parent, or another student.
	9.1.16	Prepare a letter or e-mail to follow up with a job interview.
	9.1.17	Evaluate an employment benefits package.
	9.1.18	Compare job opportunities, including wages, benefits, responsibilities, and potential career growth.

Career Ready Practices

1. Act as a Responsible and Contributing Citizen and Employee

Career-ready individuals understand the obligations and responsibilities of being a member of a community and demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them, think about the near-term and long-term consequences of their actions, and seek to act in ways that contribute to the betterment of their teams, families, community, and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.

2. Apply Appropriate Academic and Technical Skills

Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications and make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.

3. Attend to Personal Health and Financial Well-Being

Career-ready individuals understand the relationship between personal health, workplace performance, and personal well-being; they act on that understanding to regularly practice health diet, exercise and mental health activities. Career-ready individuals also take regular action to contribute to their personal financial well-being, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.

4. Communicate Clearly, Effectively, and with Reason

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice and organization and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

5. Consider the environmental, social, and economic impacts of decisions

Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organizations and the environment. They are aware of and utilize new technologies, understandings, procedures, materials and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and profitability of the organization.

6. Demonstrate creativity and innovation

Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.

7. Employ valid and reliable research strategies

Career-ready individuals are discerning in accepting and using new information to make decisions, change practices, or inform strategies. They use a reliable research process to search for new information and evaluate the validity of sources when considering the use and adoption of external information or practices. They use an informed process to test new ideas, information, and practices in their workplace situation.

8. Utilize critical thinking to make sense of problems and persevere in solving them

Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur, quickly take action to address the problem, thoughtfully investigate the root cause of the problem prior to introducing solutions, and carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.

9. Model integrity, ethical leadership, and effective management

Career-ready individuals consistently act in ways that align to personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the direction and actions of a team or organization, and they apply insights into human behavior to change others' actions, attitudes, and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morale, and organizational culture.

10. Plan education and career path aligned to personal goals

Career-ready individuals take personal ownership of their own educational and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience, and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the educational and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.

11. Use technology to enhance productivity

Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring and using new technology, being proficient with ubiquitous technology applications. They understand the inherent risks, personal and organizational, of technology applications, and they take actions to prevent or mitigate these risks.

12. Work productively in teams while using cultural/global competence

Career-ready individuals positively contribute to every team whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.