Implementation date
Fall 2009

PROGRAM CONCENTRATION: **Architecture, Construction, Communications & Transportation**

CAREER PATHWAY(S): **Graphic Communications**
Graphic Design

COURSE TITLE: **Introduction to Graphics and Design**

Course Description: The goal of this course is to provide all students with an introduction to the principles of graphic communications and design and its place in the world. This course should also help students to use computers effectively in their lives, thus providing a foundation for successfully integrating their own interests and careers with the resources of a technological society.

In this course, high school students can acquire a fundamental understanding of the graphic communications and design world. They can learn the theories behind creating aesthetically pleasing designs and how to work with consumers. Exposure to career possibilities and discussion of ethical issues relating to graphic communications and design should also be important threads in this course.

Graphic Communications is defined as the processes and industries that create, develop, produce, and disseminate products utilizing or incorporating words or pictorial images to convey information, ideas, and feelings. GC products facilitate learning, enjoyment, motivation, and commerce. Graphic Communications includes the family of market segments embracing the technologies of printing, publishing, packaging, electronic imaging, and their allied industries; they are often referred to as the graphic arts, print, or imaging industries.

Graphic design is the process of communicating visually using typography and images to present information. Graphic design practice embraces a range of cognitive skills, aesthetics, and crafts, including typography, visual arts, and page layout. Like other forms of design, graphic design often refers to both the process (designing) by which the communication is created and the products (designs) which are generated.

PROFESSIONAL CAREERS AND ETHICS
Students will explore careers in the field of graphic communications and design, identify key developments in the history of graphics, and identify professional and ethical issues involved with design in our society.

ACCT-IGD-1. Students will explore the different careers available in the field of graphic communications and the design industry.

a. Identify the certificates, diplomas, and degrees available.
b. Compare and contrast careers in graphics and design, along with their education, training requirements, and salary ranges.

Implementation date
Fall 2009

    c. Identify the college majors that are found in the area of graphics and/or design.

    d. Investigate how graphics and design permeates our daily lives.

    e. Demonstrate understanding of education and career development as a lifelong learning process.

    f. Identify gender and diversity related issues in graphics and/or design.

    g. List and describe professional organizations in the field of computing.

Academic Standards:

ELA10W2 The students demonstrates competence in a variety of genres.

ELA10W3 The students uses research and technology to support writing.

ELA 10Rl2 The student identifies, analyzes, and applies knowledge of theme in literary works and provides evidence from the works to support understanding.

Sample Tasks:

- Develop a list of career opportunities within the graphics/design industry.
- Interview someone working in the industry and present information to the class.
- Develop an individual career plan.
- Incorporate professional terminology into conversations.
- Participate in SkillsUSA programs and events.
- Research gender and diversity issues in print/graphics industry.

ACCT-IGD-2. Students will identify key developments and individuals relating to the history of the graphics and design industry and explore emerging trends and technologies.

    a. Describe the development of the printing industry.

    b. Identify persons with major contributions to the field of graphic design.

    c. Outline the history of printing and graphic design and explain its effects on the print/design industry and society.

    d. Identify and describe emerging trends and technologies.

Academic Standards:

ELA10RL4 The student employs a variety of writing genres to demonstrate a comprehensive grasp of significant ideas in sophisticated literary works. The student composes essays, narratives, poems, or technical documents.

ELA10RL5 The student acquires new vocabulary in each content area and uses it correctly.

ELA10RC4 The student establishes a context for information acquired by reading across subject areas.

Implementation date
Fall 2009

ELA10W3 The student uses research and technology to support writing.

ELA10LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions.

Sample Tasks:
- Research and present information on industry focus and trends.
- Analyze historical and contemporary artists through their creations and their contributions. Write a research paper and give a presentation on a designer or prominent print industry aficionado.
- Create a timeline of the history of printing.

ACCT-IGD-3. Students will examine the professional and ethical issues involved in the graphics and design industry.

    a. Identify basic copyright issues for the graphics/design industry.
    b. Explain the consequences of copyright infringement.
    c. Explain ethics issues for the graphics/design business.

Academic Standards:
ELA10W3 The student uses research and technology to support writing.

ELA10LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions.

Sample Tasks:
- Design and produce an art product, request a copyright, and use copyright guidelines for registering the product.
- Obtain formal permission for use of an art form, design, and/or photo.
- Design a signed release form and obtain legal release forms before using an art design on the internet.
- Participate in a class discussion on "work made for hire."
- Develop and present a "total team" project on copyright basics for graphic artists.

ACCT-IGD-4. Students will examine the elements of the business cycle.

    a. Describe the job flow from initial customer contact to collection of payment.
    b. Examine cost factors of printing and design jobs.
    c. Interpret basic business terms.

Academic Standards:

Implementation date
Fall 2009

ELA10RL4 The student employs a variety of writing genres to demonstrate a comprehensive grasp of significant ideas in sophisticated literary works. The student composes essays, narratives, poems, or technical documents.

ELA10RL5 The student acquires new vocabulary in each content area and uses it correctly.

ELA10RC4 The student establishes a context for information acquired by reading across subject areas.

ELA10W3 The student uses research and technology to support writing.

ELA10LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions.

Sample Tasks:
- Create a job flow chart from the customer to the product.
- Design a work order for print and/or graphic design.

ACCT-IGD-5. Students will demonstrate interpersonal and employability skills required for employability and job retention in the work place.

    a. Demonstrate professional customer relations skills and organizational skills.
    b. Identify priority of job tasks.
    c. Demonstrate employability skills such as attendance, time management, individual responsibility, professional conduct, and appearance.
    d. Demonstrate interview, application, and resume writing skills necessary for job attainment.
    e. Analyze ways of dealing with stress and human relations.
    f. Evaluate methods of conflict resolutions.

Academic Standards:
ELA10RL4 The student employs a variety of writing genres to demonstrate a comprehensive grasp of significant ideas in sophisticated literary works. The student composes essays, narratives, poems, or technical documents.

ELA10RL5 The student acquires new vocabulary in each content area and uses it correctly.

ELA10RC4 The student establishes a context for information acquired by reading across subject areas.

ELA10W3 The student uses research and technology to support writing.

Implementation date
Fall 2009
ELA10LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions.

ENVIRONMENTAL HEALTH AND SAFETY
Students will explain and demonstrate safety procedures in the field of graphic communications and design, identify required personal protection equipment, and identify professional and environmental issues.

ACCT-IGD-6. Students will explain and demonstrate how to operate equipment in a safe manner.

  a. Identify safety features.
  b. Describe proper personal protection equipment needed.
  c. Read and interpret equipment operating instructions.

Academic Standards:
ELA10W2 The students demonstrates competence in a variety of genres.

ELA10W3 The students uses research and technology to support writing.

ELA10RL5 The student understands and acquires new vocabulary and uses it correctly in reading and writing.

Sample Tasks:
- Develop a list of required personal protection equipment.
- List rules for operating basic equipment.
- Design a poster describing safety rules.

ACCT-IGD-7. Students will identify safety and health procedures utilized in the classroom/lab environment.

  a. Identify location of safety and first aid equipment.
  b. Identify procedures for emergency situations.
  c. Identify procedures for handling hazardous and combustible materials (MSDS, OSHA).
  d. Describe OSHA, MDSD, and EPA.
  e. Describe Lockout and Tagout.
  f. Explain Right to Know.

Academic Standards:
ELA10RL5 The student acquires new vocabulary in each content area and uses it correctly.

ELA10RC4 The student establishes a context for information acquired by reading across subject areas.

Implementation date
Fall 2009

ELA10W3 The student uses research and technology to support writing.

ELA10LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions.

Sample Tasks:
- Draw a shop floor plan indicating emergency exits, fire and safety equipment, and first aid equipment.
- Demonstrate how to properly use a fire extinguisher.

BASIC MATH AND MEASUREMENTS FOR GRAPHIC COMMUNICATIONS
Students will utilize calculating skills, units, and measurements fundamental to a career in Graphic Communications and Design, and identify linear, liquid, weight, and area measuring units.

ACCT-IGD-8. Students will estimate job costs.

a. Calculate price of materials used in commercial jobs.
b. Determine substrate quantities needed and their costs.
c. Establish additional equipment overhead, physical plant, time, labor, waste management, shipping costs, and projected profit margin.

Academic Standards:
MM2P1 Students will solve problems (using appropriate technology).

MM3P2 Students will reason and evaluate mathematical arguments.

MM2P3 Students will communicate mathematically.

Sample Tasks:
- Fill out and interpret job orders.
- Select paper that fulfills work order and determine cost.

ACCT-IGD-9. Students will recognize and utilize paper and assorted substrates for commercial output.

a. Determine size, weight, quantities, type, and amount of paper necessary for fulfilling a job order.
b. Investigate efficient production methods to minimize paper waste during jobs.
c. Appraise different printing imposition techniques for maximum value and savings of materials.

Academic Standards:

Implementation date
Fall 2009

MM2P5 Students will represent mathematics in multiple ways.

MM4A9 Students will use sequences and series.

MM3P1 Students will solve problems (using appropriate technology).

ACCT-IGD-10. Students will generate and manipulate various graphic imaging processes.

a. Discern appropriate use of technology in areas of color and design choices.
b. Evaluate photographic digital input techniques for maximum effect.
c. Manage resolution issues.
d. Assess the issues of sizing images in various forms.

Academic Standards:
MM3P5 Students will represent mathematics in multiple ways.

MM3A3 Students will solve a variety of equations and inequalities.

MM4A10 Students will understand and use vectors.

ACCT-IGD-11. Students will identify and apply typographic and design concepts.

a. Examine and construct documents with multiple measurement systems used in the field (including inches and picas).
b. Select and use appropriate type composition techniques involving leading, tracking, kerning, scaling, and aligning based on job particulars.
c. Understand and accurately execute measurement conversions.

Academic Standards:
MM2P5 Students will represent mathematics in multiple ways.

MM2P1 Students will solve problems (using appropriate technology).

MM2P3 Students will communicate mathematically.

ACCT-IGD-12. Students will analyze pre-press and output operations.

a. Determine and use proper imposition to save materials used in multi-page and multi-piece projects.
b. Interpret and formulate correct liquid measurements for various chemical needs in production processes.
c. Position images on substrates using appropriate measurements.

Implementation date
Fall 2009

    d. Understand adjustments that may be needed in the equipment and materials used for output (including pressure settings, ink quantities, and mechanical adjustments).

Academic Standards:
MM4A9 Students will use sequences and series.

ELA10LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions.

DESIGN AND LAYOUT

Students will learn principles of design and general layout procedures as it relates to the graphics industry. Content will cover electronic systems and software programs used in graphic design, page composition, image conversion, and digital printing. Knowledge and skills in digital design and imaging will be enhanced in a graphic communication production laboratory facility through experiences that simulate the graphic communications industry and school-based and work-based learning opportunities.

ACCT-IGD-13. Students will understand and demonstrate how to design a page layout.

    a. Demonstrate how to log-on/boot-up, save, and print using a page layout program.
    b. Design and produce a document using desired fonts, formatting, margins, indents, tabs, gutters, header and footer, guides, trims, folds, and proper leading.
    c. Demonstrate text alignment, element positioning, and rules of page design for printed matter.
    d. Set up column grids for page layout according to job specifications.
    e. Set up and select appropriate pagination for a given job.
    f. Proofread, edit, and make corrections/adjustments to copy on screen.

Academic Standards:
ELA10LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions.

ACCT-IGD-14. Students will identify the five elements incorporated in basic graphic designs and will understand the application of effective color usage.

    a. Identify the utilization of the five elements of line, shapes, mass, texture, and color as they apply to basic design.
    b. Understand the difference between primary, secondary, and complimentary colors.
    c. Define CMYK and RGB and understand the difference between them and when to use them.

Implementation date
Fall 2009

Academic Standards:
ELA10RL5 The student acquires new vocabulary in each content area and uses it correctly.

ELA10RC4 The student establishes a context for information acquired by reading across subject areas.

ELA10LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions.

ACCT-IGD-15. Students will identify and produce files utilizing different digital formats.

a. Describe the strengths and weaknesses of TIFF, EPS, PICT, JPG, GIF, PDF, PNG, and UMF in a Postscript environment.
b. Demonstrate how to use a file compression utility for file transfer or storage.
c. Create documents /images and demonstrate the ability to save as digital files.
d. Demonstrate how to place scanned graphics/photos into existing page layout program.
e. Produce digital files using appropriate DPI and PPI resolution for media.

Academic Standard:
ELA10RL5 The student acquires new vocabulary in each content area and uses it correctly.

ACCT-IGD-16. Students will identify and demonstrate page layout terminology and tools.

a. Identify and demonstrate use of basic design principles.
b. Identify and demonstrate use of layout methods/stages: (1) Thumbnail, (2) Rough, and (3) Comprehensive.
c. Identify and demonstrate use of traditional and computer generated tools in the production of page layout.

ACCT-IGD-17. Students will identify and understand the differences in page layout, raster based photo manipulation, and vector based graphic software applications.

a. Identify and demonstrate the basic capabilities of page layout, raster based photo manipulation, and vector based software applications as they apply to the completion of graphic communications projects.

Implementation date
Fall 2009

    b. Define and identify the differences between raster and vector based software.

    c. Demonstrate the ability to properly integrate text and images in a computer generated page layout.

    d. Demonstrate the ability to properly alter and enhance an image using a raster based photo manipulation software application.

    e. Demonstrate the ability to create a logo utilizing a vector based software application.

Academic Standard:
ELA10W3 The student uses research and technology to support writing.

TYPOGRAPHY

Students will identify key developments in the origins of type and typography, recognize the distinctions between type categories, and apply recognizable values of type to an understanding of legibility in a variety of type applications.

ACCT-IGD-18. Students will explore the origins of type by examining the evolution of letterforms.

    a. Define the terms "pictograms" and "ideograms" and the distinctions between them and letterforms.

    b. Outline the evolution of alphabet, punctuation, upper case letters, lower case letters, and ligatures as elements of typography and explain the effect of each in its development.

    c. Identify and describe how current communication technologies impact emerging trends in typography.

Academic Standards:
ELA10W2 The student demonstrates competence in a variety of genres.

ELA10RL5 The student acquires new vocabulary in each content area and uses it correctly.

ELA 10Rl2 The student identifies, analyzes, and applies knowledge of theme in literary works and provides evidence from the works to support understanding.

Sample Tasks:
- Develop a list of known pictograms and ideograms with a description of the meaning of each, and then create five new examples of "grams" we might use today along with their meaning.
- Develop a PowerPoint presentation using animation to demonstrate the evolution of one of the elements of typography (e.g., punctuation, ligature).

Implementation date
Fall 2009

- Create a timeline of the history of typography, linking the introduction of specific elements with references to at least two additional historical events that can be directly attributed to that element.
- Research how current trends in communication (e.g., I-M, text messaging) are influencing how type is used worldwide.

ACCT-IGD-19. Students will evaluate the function of typeface design in supporting legibility in a variety of media applications.

    a. Define the concept of "mood and theme" in typography.
    b. Identify effects applied to typefaces to achieve "readability" and evaluate when each is – or is not – appropriate to use.
    c. Identify five major type categories and define distinguishing characteristics of each.
    d. Define the use of reverse type and the concept of weight and color as a type effect.
    e. Identify the four methods of alignment and describe how each impacts the presentation of type.
    f. Identify the three forms of presentation for typefaces (packaging, signage, and multimedia) and describe how each medium defines the legibility of typeface.

Academic Standards:
ELA10RL4 The student employs a variety of writing genres to demonstrate a comprehensive grasp of significant ideas in sophisticated literary works. The student composes essays, narratives, poems, or technical documents.

ELA10RL5 The student acquires new vocabulary in each content area and uses it correctly.

ELA10W3 The student uses research and technology to support writing.

ELA10LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions.

Sample Tasks:
- Create a "What's In a Name?" poster utilizing no more than two typefaces and a variety of effects to interpret the student's personality.
- Research a library of typefaces available in computer lab to develop a list of "Favorite Fonts" organized by type category.
- Develop and present a "total team" project on type categories and how to identify each through their characteristics.
- Demonstrate knowledge of type effects by applying to existing text of a well-known fairy tale as a means of interpreting the mood of the story.

Implementation date
Fall 2009

- Design and produce a promotional product; provide an example of how it would appear in each of the three identified media (desktop publishing, signage, Web page) and identify the distinctions in using each.

GRAPHIC OUTPUT PROCESSES

Students will become familiar with the many ways images are created either physically or electronically by delineating through description the differences between the various output processes and describe how each process creates or transfers an image. Students will describe how an image transitions through to a finished product and will participate in its development.

ACCT-IGD-20. Students will explore the different print processes.

 a. Create printed products by using at least two different print processes from design to completion.
 b. Describe the differences between the processes used.
 c. Identify the steps in making an image using one process.
 d. Demonstrate an understanding of the terms and technology of these processes.

Academic Standards:
ELA10RL5 The student acquires new vocabulary in each content area and uses it correctly.

ELA 10Rl2 The student identifies, analyzes, and applies knowledge of theme in literary works and provides evidence from the works to support understanding.

ELA10LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions.

Sample Tasks:
- Design and print a notepad.
- Design and print a flyer.
- Design and print a French fold greeting card, invitation, thank you card or birthday card.

ACCT-IGD-21. Students will explore the different electronic imaging processes.

 a. Create images by using an electronic media process from concept to delivery.
 b. Identify the steps in making an image using one process.
 c. Demonstrate an understanding of the terms and technology of the process.

Sample Tasks:

Implementation date
Fall 2009

- Design and produce an instructional lesson on graphic communications using electronic media.
- Design and develop a web page using html code then improve it with web page development software.

List of Output Processes

<u>Print Media</u>
lithography
flexography
letterpress
gravure
engraving
etching
pad printing
laser print
ink jet
dye sublimation

<u>Electronic Media</u>
web
multimedia
pod cast
video

Reading Across the Curriculum

Reading Standard Comment
After the elementary years, students engage in reading for learning. This process sweeps across all disciplinary domains, extending even to the area of personal learning. Students encounter a variety of informational as well as fictional texts, and they experience text in all genres and modes of discourse. In the study of various disciplines of learning (language arts, mathematics, science, social studies), students must learn through reading the communities of discourse of each of those disciplines. Each subject has its own specific vocabulary, and for students to excel in all subjects, they must learn the specific vocabulary of those subject areas in *context*.

Beginning with the middle grades years, students begin to self-select reading materials based on personal interests established through classroom learning. Students become curious about science, mathematics, history, and literature as they form contexts for those subjects related to their personal and classroom experiences. As students explore academic areas through reading, they develop favorite subjects and become confident in their verbal discourse about those subjects.

Implementation date
Fall 2009

Reading across curriculum content develops both academic and personal interests in students. As students read, they develop both content and contextual vocabulary. They also build good habits for reading, researching, and learning. The Reading Across the Curriculum standard focuses on the academic and personal skills students acquire as they read in all areas of learning.

CTAE-RC-1 Students will enhance reading in all curriculum areas by:
Reading in All Curriculum Areas
-Read a minimum of 25 grade-level appropriate books per year from a variety of subject disciplines and participate in discussions related to curricular learning in all areas.
-Read both informational and fictional texts in a variety of genres and modes of discourse.
-Read technical texts related to various subject areas.
Discussing Books
-Discuss messages and themes from books in all subject areas.
-Respond to a variety of texts in multiple modes of discourse.
-Relate messages and themes from one subject area to messages and themes in another area.
-Evaluate the merit of texts in every subject discipline.
-Examine author's purpose in writing.
-Recognize the features of disciplinary texts.
Building Vocabulary Knowledge
-Demonstrate an understanding of contextual vocabulary in various subjects.
-Use content vocabulary in writing and speaking.
-Explore understanding of new words found in subject area texts.
Establishing Context
-Explore life experiences related to subject area content.
-Discuss in both writing and speaking how certain words are subject area related.
-Determine strategies for finding content and contextual meaning for unknown words.

CTAE Foundation Skills

The Foundation Skills for Career, Technical and Agricultural Education (CTAE) are critical competencies that students pursuing any career pathway should exhibit to be successful. As core standards for all career pathways in all program concentrations, these skills link career, technical and agricultural education to the state's academic performance standards.

The CTAE Foundation Skills are aligned to the foundation of the U. S. Department of Education's 16 Career Clusters. Endorsed by the National Career Technical Education

Implementation date
Fall 2009
Foundation (NCTEF) and the National Association of State Directors of Career Technical Education Consortium (NASDCTEc), the foundation skills were developed from an analysis of all pathways in the sixteen occupational areas. These standards were identified and validated by a national advisory group of employers, secondary and postsecondary educators, labor associations, and other stakeholders. The Knowledge and Skills provide learners a broad foundation for managing lifelong learning and career transitions in a rapidly changing economy.

CTAE-FS-1 Technical Skills: Learners achieve technical content skills necessary to pursue the full range of careers for all pathways in the program concentration.

CTAE-FS-2 Academic Foundations: Learners achieve state academic standards at or above grade level.

CTAE-FS-3 Communications: Learners use various communication skills in expressing and interpreting information.

CTAE-FS-4 Problem Solving and Critical Thinking: Learners define and solve problems, and use problem-solving and improvement methods and tools.

CTAE-FS-5 Information Technology Applications: Learners use multiple information technology devices to access, organize, process, transmit, and communicate information.

CTAE-FS-6 Systems: Learners understand a variety of organizational structures and functions.

CTAE-FS-7 Safety, Health and Environment: Learners employ safety, health and environmental management systems in corporations and comprehend their importance to organizational performance and regulatory compliance.

CTAE-FS-8 Leadership and Teamwork: Learners apply leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.

CTAE-FS-9 Ethics and Legal Responsibilities: Learners commit to work ethics, behavior, and legal responsibilities in the workplace.

CTAE-FS-10 Career Development: Learners plan and manage

Implementation date
Fall 2009

academic-career plans and employment relations.

CTAE-FS-11 Entrepreneurship: Learners demonstrate understanding of concepts, processes, and behaviors associated with successful entrepreneurial performance.