

Production Printing

1 credit

2 hours; 1 semester

Text: Graphic Communication, The Printed Image – Prust: Goodheart-Willcox, 1999

Prerequisites:

This course is open to sophomores, juniors, and seniors who achieved a grade of 78 in Communication or have received the instructor's approval.

Course Description:

This course is an occupationally oriented class whose focus is to develop skills and a knowledge base required of a person planning a career in some part of the Graphic Communications industry. The class is structured, as an in-plant printing operation whose function is to satisfy the printing needs of Morton Unit School District 709. During the 1998-99 school year, PHLIEBYEKKNIGHT was introduced into the class as a school-based enterprise. Phliebyeknight now provides printing services beyond the District 709 needs. Students learn how a business is run from the planning of jobs, ordering materials, packaging and shipping, and billing customers. Students plan and implement the printing of such items as office forms, programs, instructional materials, mouse pads, coasters, t-shirts, notepads, and tickets.

Course Content:

- Overview of Graphic Communications
- Safety and Health
- Measurement
- Typography
- Design and Layout
- Text Composition
- Page Composition
- Color Science, Vision and Space
- Electronic Prepress and Digital Printing
- Digital Image Capture
- Color Management
- Stripping and Imposition
- Lithographic Platemaking
- Lithographic Press Systems
- Lithographic Press Operation and Troubleshooting
- Screen Printing
- Substrates
- Ink
- Finishing and Binding
- The Business of Printing
- Graphic Communications Career

Course Format:

Course material is presented through a variety of methods. Presentations are made through lectures, discussions, demonstrations, written work, and lab assignments

Course Expectations:

Students will be expected to read all required textbook chapters, complete all worksheets, tests, and lab assignments. Students will be expected to work safely while in the lab.

Grades:

Grading for this class will also be different than other classes. Students will be graded on three different items. Attendance is critical for jobs to be completed on time and not burdening fellow teammate(s). Students will receive a 10-point-per-day attendance grade. If students are not here, they will not earn that day's points. Tardies will be a 2-point deduction per occurrence. Make-up time can be achieved after school at the rate of 2 points per ½ hour. The second method of grading will be based on the quality of the work produced. This is usually graded by the customer that students are servicing. Customers will be given a score sheet that they will fill out and return with the grade. Finally, the usual textbook assignments and tests will complete the grading.

Course Objectives:

The student will be able to:

- I. Understand technical systems and their applications
 - Explain the important role of graphic communications in our technological society
 - Identify the major processes commonly associated with the graphic communications industry
 - Describe the point system of type measurement
 - Measure grades of paper by basis weight, thickness, and brightness
 - Explain how visual images are produced and measured in a desktop publishing system
 - Understand the use of proportional scales, screens, and tint measurements in the reproduction of images
 - List typeface classifications
 - Explain the difference between a family, a series, and a font of type
 - Identify the common type sizes and units used in typography
 - Identify the elements that make up a layout
 - List the layout materials needed to produce a mechanical
 - Explain the concept of photocomposition
 - Explain the difference between hardware and software in electronic imaging systems
 - Explain the role of the paste-up artist
 - Describe the paste-up steps for producing a mechanical
 - Explain the electronic page composition process used to combine text and graphic images
 - Describe both the additive color mixing and subtractive color mixing methods
 - Define the various color systems used in graphic communications
 - Cite the differences and explain the advantages of bitmap and vector graphics

- List the most commonly used file formats and their applications
- Explain the difference between analog form and digital form
- Define the different types of resolution
- List the tools and applications available in imaging programs
- Identify the major parts of the process camera
- Explain the basic procedure for shooting line and halftone images
- Identify the equipment needed to process film
- Summarize the chemical solutions necessary to process film
- Define the materials, tools, and equipment needed to impose various job flats
- Understand the use of lithography as a printing method and explain how lithographic plates are used on an offset press
- Describe the types of equipment used in platemaking
- List common problems associated with the platemaking process
- Identify the fundamental systems used in a lithographic press
- Explain the function of each press cylinder in a printing system
- Describe how dampening and inking systems prepare a plate for printing
- Describe various applications of screen-printing
- Explain the basic size and basis weight of paper
- Identify the characteristics of inks used for different
- Identify the many finishing methods for completing various printing projects
- Explain the types of equipment found in the finishing and binding area
- Explain the relationship of business costs to printing costs

II. Be able to analyze and solve technical problems

- Utilize the principles of design
- Describe the methods used in preparing illustrations for layout
- Produce a mechanical via conventional past-up techniques
- Produce a mechanical via electronic page composition techniques
- Produce line and halftone images
- Process film negatives
- Create various flats through the imposition process
- Produce different types of plates used in meeting the needs of customers' projects
- Prepare the pres for printing
- Operate the various types of equipment and display the fundamental principles needed to operate a sheet-fed offset press
- Demonstrate how to set up and operate the press
- Recognize common problems related to the operation of an offset press and make corrections to the system
- Manufacture a computer generated stamp pad
- Prepare photographic stencils for screen printing
- Utilize job tickets and other business forms
- Produce customer invoices

III. Become familiar with a variety of technical and related occupations

- Summarize the role of the graphic designer
- Identify skilled technical, creative, management, and support positions

- Describe the advantages and disadvantages of owning your own business

IV. Be able to demonstrate cooperative work skills

- Use the equipment rotation schedule to complete various assignments
- Work with small group effectively
- Complete homework assignments on time
- Provide mentoring to fellow classmates when needed

V. Investigate and explore emerging technologies and technical occupations

- Describe the impact the computer has made and will continue to make on the graphic communications industry
- Summarize how the computer has increased the capabilities of typography
- Define digital printing and list its advantages and limitations, as well as the various types of technology used.
- Explain how electronic prepress operations are replacing the manual imposition and stripping processes

VI. Be able to operate equipment and use materials in a proper, safe, and considerate manner

- State the purpose of a plant safety and health program
- Describe the importance of machine guards and personal protection
- Demonstrate safe handling of materials, tools, and equipment, as well as proper techniques for lifting.
- Identify the correct handling, storage, and disposal of chemicals and other materials.
- Identify a plan for fire prevention
- Describe an ergonomically correct computer workstation
- Explain ways to reduce and eliminate waste for environmental compliance
- State the precautions to follow when mixing and working with chemicals