

Vocational Graphic Communications I  
(Course No. 676)

Career and Technical Education Department

Waltham High School  
Waltham, Massachusetts

Introduction

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Fall 2011

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## Introduction

This course is designed to provide a basic background and understanding of the Graphic Communications field. It is intended to cover the spectrum of communication from verbal through computer-enhanced. Students will investigate the history of communication and its impact on today's world. The impact of communication will be covered, as well as ethical and moral issues surrounding the use of media and propaganda. The physical operation of printing and pre-press equipment and software will provide an opportunity to increase individual competency in the areas of graphic communications. Skills necessary for future employment in the field, as well as opportunities for self-employment will be presented.

First Year Course 676 Ten (10) credits will be offered for successful completion of this course.

WALTHAM HIGH SCHOOL

**Curriculum Design Template**

Department: Career & Technical Programs Course Title: **Vocational Graphic Communications**

Course No. #676 Grade (circle all that apply) 9 10 11 12

- I. Intended learning outcomes: *What do you want students to know and be able to do?*
- a. Student will know:
  - b. The importance of attendance and promptness
  - c. Attention to detail and follow-through on assigned tasks
  - d. The historical importance of printing and graphic communication
  - e. Techniques, theories, and methods of print production
  - f. Photographic principles (technical and artistic)
  - g. Measurement, application of mathematical calculation, chemical interaction
  - h. Safety procedures and requirements
  - i. Apply for, obtain, and maintain gainful employment through acquisition of superior work skills
  - j. Use the computer to effectively communicate ideas

*What Massachusetts Curriculum Frameworks standards (Technology Education), or Occupational Competencies (Vocational Program) are emphasized?*

See attached competency Sheets

- II. Evidence of Student Learning: *How will students demonstrate what they are able to do?*
- a. Hands-on application of lessons imparted through production of live work in simulated shop (on-time completion of assigned tasks, appropriate quality, initiative, etc.)
  - b. Portfolio production and maintenance
  - c. Written examinations on measurement, mathematics, design and safety
  - d. Demonstrate acceptable attendance record under strict guidelines
  - e. Complete requirements and maintain minimum grade average for a Tech-Prep placement

- III. Instructional Strategies: *What instructional strategies will you use? What learning experiences will you create?*
- a. Problem solving situations requiring integration of skills (measurement, chemical interaction, proof-reading, calculation of required material)
  - b. Creation of activities centered on production of learning materials for use by teachers in subjects such as history, mathematics, science, English/foreign language, music, and sports
  - c. Hands-on production of live work in a simulated shop environment
  - d. Bring critical and creative thinking to every activity

Vocational Graphic Communications I  
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Waltham, Massachusetts

Syllabus

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## Textbooks and Materials To Be Used in Class

*Waltham High School Vocational Graphic Communications Print Shop Safety Manual.*

Any history book of the student's choosing. Calligraphy samples, Icon samples.

Current newspaper and/or magazine articles. Historical references and anecdotes.

Current office store circulars, cost comparison reports, library and store research.

**My Invoices** software.

### Offset Printing Fundamentals

#### Handbook of Print Media H. Kipphan for Heidelberg

Print Shop Printing Request Forms

*School of Modern Photography* text

## Materials Needed for Student Preparedness

Students will come to class with a positive attitude, willingness to learn and will adhere to the clothing guidelines outlined in the Safety Manual. Hair and loose clothing will be tied back or covered at all times in the shop area. All necessary material will be supplied.

## Course Description

This course is designed to provide a basic background and understanding of the Graphic Communications field. It is intended to cover the spectrum of communication from verbal through computer-enhanced. Students will investigate the history of communication and its impact on today's world. The impact of communication will be covered, as well as ethical and moral issues surrounding the use of media and propaganda. The physical operation of printing and pre-press equipment and software will provide an opportunity to increase individual competency in the areas of graphic communications. Skills necessary for future employment in the field, as well as opportunities for self-employment will be presented.

Ten (10) credits will be offered for successful completion of this course.

## Course Objectives

Students will learn:

- Building Safety, fire and emergency evacuation drills
- Personal Safety, ergonomics, clothing, safety devices
- Origins of communication
- Reasons for communication
- Means of communication
- Evolution of languages
- Icons from Egypt to Windows
- Calligraphy
- Movable type
- Manuscripts
- Guttenberg
- Franklin
- Freedom of the Press
- Propaganda
- The Internet
- Ethics
- Overage / Shortage
- Waste and Recycling
- Work Habits, punctuality and attendance
- Attitude
- Teamwork
- Legal Issues
- Listening skills
- Attention to detail
- Courtesy
- Honesty and Integrity
- Estimating skills
- The costs of various types of paper
- The costs associated with ink requirements
- An investigation of overhead and its components
- Supplies
- Inventory
- Personnel
- Hazardous Waste and its disposal
- Taxes and Fees
- Determining the Cost
- Determining Markup
- The importance of cash flow
- Filing and Record keeping
- Filling out the job ticket
- Understanding all fields on the job ticket
- Complete filling of every field on the job ticket
- Proper filing procedures
- Using the light table
- Using a T-Square
- Types of adhesive

## Course Objectives

Students will learn:

- Using a triangle
- Using X-acto knives
- Opaque and ruling techniques
- Crop and register marks
- Overlays and tints
- Rubber cement pick-up
- Non-repro blue pencils
- Thumbnail creation
- Type specification
- Paper and its manufacture
- Paper usage, the right paper for the job
- Paper weight and measurement
- Paper grain and its importance
- Paper color
- Felt side
- Ink and its manufacture
- Ink usage, the right colors for the job
- Viscosity
- CMYK Progressives
- The method of applying on the press
- Transparent vs. Opaque
- Mixing to achieve PMS match
- Dot gain
- Solvents and their handling
- Blanket Wash and its uses
- Roller Cleaners
- Lubricants for maintenance
- Fountain Solution mixing and pH
- Pumice and abrasives
- Blanket repair chemicals
- Rulers to 1/32 of an inch
- Type gauge for measuring font size, leading, spacing, column widths, etc.
- Using padding spoon to determine paper count measurement
- Use of micrometer for paper weight measurement
- Creating a cutting diagram to determine best cuts for economy
- Measuring and mixing fountain solution
- Measuring and mixing development and fixer solutions
- Tag and Lockout procedures
- Record-keeping
- Scheduling of maintenance
- Types of lubricants
- Types of inspections
- Maintenance and Lubrication
- Determine Cut Size
- Setting Back Gauge
- Accommodation of materials
- NCR Bar

## Course Objectives

Students will learn:

- Clamp pressure
- Blade Sharpness and replacement
- Reflection and Refraction
- Interaction with light and dark
- Balance and color
- Effects of direction of incidence
- Use of safelights
- Actinic
- Excess Coverage
- Balance of image
- Horizon
- Portrait and Landscape orientation
- Photojournalism, Portrait, Landscape, Art, Reproduction
- Depth of Field and Aperture
- Shutter and Shutter speed adjustment
- Lenses and focal lengths
- Exposure compensations
- Film formats
- Slide and negative film
- Digital Photography
- How to load a camera
- How to unload a camera
- Safety with chemicals
- Chemical mixing and importance of temperature and light safe room
- Agitation
- Saturation and Color Balance
- Continuous tone photographs
- Grain and film speed
- Halftone images
- Dot and dot gain effects
- Halftone screens
- Line shots
- Quick plates
- Density of negative
- Clarity of image
- Contrast
- Reticulation
- Scratches
- Fogging
- Safety Issues using knives and scissors
- Evaluating the negative
- Workflow, determining the steps to be followed in production
  - Transferring job ticket information to the flats
  - Determining the paper orientation and print technique (work & turn / tumble, etc.)
  - Create New File Folder or record on Current File Folder
- Measurements and Steps to Stripping Negatives
  - Paper Size

## Course Objectives

Students will learn:

- Centerline
- Gripper Margin
- Bend
- Bleeds
- Crop Marks
- Register Marks
- Pin Register
- Goldenrod Paper
- Schematics
- Cutting Masks
- Opaque and Scribe
- Orientation
- Pin Register
- Alignment
- Actinic light
- Double Burns
- Step and Repeat
- Screens and Tints
- Hand development vs. Processor development
- Dylux prints for proofing purposes
- The importance of regular scheduled maintenance
- Tagging and lockout procedures
- Unsafe condition reporting procedures
- Recording keeping
- Importance of work area orderliness and organization
- Where is the blanket?
- Blanket and plate evaluation and relationship
- Pin-Bar vs. Clamp mounting
- Blanket repair
- Blanket replacement
- Cleaning the blanket
- Cleaning the plate
- Removing imperfections in plates
- Repairing plates on the press
- Horizontal movement of image
- Vertical movement of image
- Adjusting skew of plate.
- Side guides
- Vacuum
- Blast
- Sheet separation
- Table Height adjustment for various papers
- Sucker feet assessment
- Paper transfer from Feed Table to Delivery Table
- Paper path
- Register
- How to Mix Fountain Solution

## Course Objectives

Students will learn:

- Measuring pH and mixing to achieve proper pH
- Application of water and achieving the proper balance and amount
- Proper filling of ink fountain
- Viscosity
- Color and color mixing
- Pantone Matching System Spot Color vs. Process Color
- Adjustment of keys in application of ink for evenness
- The water fountain rollers and their importance
- The ink fountain rollers, their role and importance
- Oscillating rollers and their role
- Impression cylinder
- Measuring roller to roller pressures
- Adjustment of pressures to ensure even distribution of ink and water
- The sequence of rollers and the importance of even ink distribution
- The movement of paper from the feed table to the image application
- The types of grip utilized by the press to handle the paper and pass it from one station to another
- The application of vacuum and blast to achieve single sheet feed
- The function of multi-sheet stops and trips to prevent multiple sheet feeding
- The importance of repeatability and jogging
- Adjusting the delivery side guides
- Adjusting for sheet drop
- Adjustment of the table drop in the delivery system
- The application of powder to aid in preventing offset
- Safety when removing sheets from the press
- Pulling sheets at regular intervals to inspect
- The importance of adequate lighting conditions
- Attention to detail
- Check both sides: Image Offset, where it comes from and how to eliminate it
- Toning and how to avoid it
- Scumming
- Hickeys and their repair
- Dot Gain
- Even ink application and how to compensate for excess or unequal coverage
- Adjusting for plate imperfections
- Removal of debris on plate or blanket
- Adjustment of keys on ink fountain to accommodate heavy areas
- Adjustment of water fountain to accommodate ink usage
- Clamp movement to adjust skew
- Blanket cylinder adjustment for vertical alignment
- Feed table guide adjustment for horizontal alignment
- Folding and measurement
- Attention to detail
- Ink and water balance
- The inspection for imperfections
- Setting the counter
- Fulfilling the quantity requirements

## Course Objectives

Students will learn:

- Handling work not yet completely dry
- Importance of speed in the quality of work
- Ink transfer as related to paper surface and absorption
- Maintenance
- Vacuum and Blast
- Gate setup
- Static Electricity
- Paper feed and handling
- Paper weights and grains
- Measurement and diagrams
- Count and industry standards
- Maintenance and lubrication
- Paper feed adjustments
- Guides and importance of parallel
- Air adjustment, blast and vacuum
- Folding gate measurement and adjustment
- Delivery guides and wheel adjustment
- Inspection and packaging
- Staple loading
- Guide placement
- Adjustment for finish size
- Inspection
- Count
- Packaging
- Maintenance and lubrication
- Paper feed adjustments
- Guides and importance of parallel
- Air adjustment, blast and vacuum
- Folding gate measurement and adjustment
- Delivery guides and wheel adjustment
- Package specifications (weight and stacking limits)
- Neatness and labeling issues
- Packing materials
- Lifting guidelines
- Record keeping issues and tracking of packages
- Labeling and clarity of records
- Telephone skills
- Courtesy in delivery
- Leaving the customer in positive frame of mind
- Acceptable procedures for delivery and return (speeding vs. dallying)

## Assessment

The student will be assessed in the following ways:

Our Safety Manual has many means of assessing student understanding of all safety issues. No student will be allowed into the shop area without achieving a perfect score on the Safety Manual Assessment Sheets.

Assessment through visual inspection of materials produced in the process of preparing and researching the subjects in unit activities.

Assessment via discussion, quizzes and sample exercises in decision making. Right vs. Wrong

Assessment via game playing skills, mock interviews, quizzes, and tests. Discussion, both in small group and entire class.

Assessment via discussion, quizzes and exercises in production of estimate and balance sheets.

Assessment via discussion, quizzes and exercises in creating invoices. Draw or create a functioning filing system, either computer or physical.

Assessment via discussion, quizzes and exercises in successful gaming. Paper color naming contest.

Assessment via discussion, quizzes and exercises in creating thumbnails, artwork, and correct printer's marks.

Assessment via discussion, quizzes and exercises in creating a functioning filing system, integrating computer software and physical assets.

Assessment via discussion, quizzes and exercises in measuring and counting.

Assessment via discussion, quizzes and exercises in creating schedules on computer, and on paper.

Assessment via discussion, quizzes and examination of pictures taken. Visual assessment of photos shot.

Assessment via discussion, quizzes and computer image manipulation

Assessment via discussion, written and oral quizzes and exercises in the production of live work. Review of material produced over the course of the year to determine weaknesses and strengths. Constant monitoring of Competency Sheets is essential.

Assessment via discussion, quizzes and exercises in live job production. Creation of Dylux prints.

Assessment via discussion, oral and written quizzes and exercises in the production of live and pre-positioned work. A constant monitoring and updating of Competency Sheets and portfolio are necessary.

## Course Calendar / Schedule

Unit One: Safety

Unit Two: History

Unit Three: Managing as a Business: Industry Standards

Unit Four: Managing as a Business: Customer Interview Skills

Unit Five: Managing as a Business: Financial Considerations

Unit Six: Managing as a Business: Understanding Workflow

Unit Seven: Artwork Preparation

Unit Eight: Artwork Preparation: Raster Image Processing

Unit Nine: Printing Materials: Paper

Unit Ten: Printing Materials: Ink

Unit Eleven: Printing Materials: Chemicals

Unit Twelve: Measurement

Unit Thirteen: Maintenance Overview

Unit Fourteen: Cutter Operation

Unit Fifteen: Camera Operation and Photography: Principles of Light

Unit Sixteen: Camera Operation and Photography: Framing the Image

Unit Seventeen: Camera Operation and Photography: Camera as Tool

Unit Eighteen: Camera Operation and Photography: Film Development

Unit Nineteen: Camera Operation and Photography: Contone/Halftone/Line

Unit Twenty: Camera Operation and Photography: Quality Assessment

Unit Twenty-One: Stripping: Starting Right

Unit Twenty-Two: Plate Making (Megaplate and Metal)

Unit Twenty-Three: The Printing Press: The Basics

Unit Twenty-Four: The Printing Press: Plate and Blanket

## Course Calendar / Schedule

Unit Twenty-Five: The Printing Press: Feed System

Unit Twenty-Six: The Printing Press: Water and Ink Fountains

Unit Twenty-Seven: The Printing Press: The Rollers

Unit Twenty-Eight: The Printing Press: Delivery System

Unit Twenty-Nine: The Printing Press: Inspection

Unit Thirty: The Printing Press: Image Adjustment

Unit Thirty-One: The Printing Press: The Press Run

Unit Thirty-Two: Bindery Overview

Unit Thirty-Three: The Folder

Unit Thirty-Four: The Booklet Maker

Unit Thirty-Five: Wrapping

Unit Thirty-Six: Delivery

Unit Thirty-Seven: Life After High School

## Assessment

Grading will be a combination of project assessment, performance on assigned tasks, completion of competency list, and portfolio assessment. Beyond these items, daily assessment will be made on promptness/attendance, attitude, effort, and quality of assigned work. A complete weighting of these assessments is as follows:

### ***Projects 50%***

Projects will account for 50% of your grade. Each person may have a different responsibility within each project, but the individual assessment will be made on the following criteria:

- Teamwork
- Management Skills
- Adherence to Task
- Feedback (bi-directional)
- Customer Interaction
- Speaking and Presentation
- Writing Skills
- Attention to Detail
- Follow-up
- Initiative
- Design Skills
- Quality of Research
- Problem Solving Skills

### ***Work Habits 20%***

- Attendance — The Graphics Program strictly enforces the Waltham High School “N” Grade Policy.
- Attitude
- Effort
- Quality

### ***Quizzes 15%***

Quizzes will be given to measure comprehension of concepts that are assessable in no other manner, and may be assigned as homework.

### ***Portfolio 15%***

***Expectations:*** Students are expected to behave in a manner consistent with acceptable business practices. The daily assessment of promptness, attitude, effort, and quality will be heavily weighted in the student's final grade. When a student enters the classroom they should consider themselves in a work environment, and conduct themselves in a suitable manner.

***Communication:*** Open and honest communication is essential to success in this course, for both student and instructor. My email link can be found on the front page. Any special requirements may be discussed. Every effort will be made to accommodate students who make an effort to accommodate the course work.

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Curriculum

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## Introduction

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Ten (10) credits will be offered for successful completion of this course.

## Unit One: Safety

2 weeks

### Lesson or Unit Objective

Introduction and overview of all safety procedures

### Unit Topics - (List)

- Building Safety, fire and emergency evacuation drills
- Personal Safety, ergonomics, clothing, safety devices
- Operating Safety, procedures to be followed at each work station

### Unit Activities - (List)

- Safety Book coverage
- Emergency Evacuation rehearsal
- Draw emergency exit map
- Study fire extinguisher fact sheets
- Introduce Coverage of MSDS requirements
- Introduce The Right to Know Law
- Introduce Chemical handling and precautions
- Clothing requirements and their purpose
- Sitting, lifting, moving, typing, ergonomics
- Safety procedures for the Jogging Machine
- Safety procedures for the Cutter
- Safety procedures for the Folder
- Safety procedures for the Press
- Safety procedures for the Stitcher
- Safety procedures for the Camera
- Safety procedures for the Plate Maker

### Student Assessment

Our Safety Manual has many means of assessing student understanding of all safety issues. No student will be allowed into the shop area without achieving a perfect score on the Safety Manual Assessment Sheets.

### Text:

Waltham High School Vocational Graphic Communications Print Shop Safety Manual.  
Handbook of Print Media

## Unit Two: History of Communication

1 week

### Lesson or Unit Objective

Introduction and overview of the history of printing

### Unit Topics - (List)

- Origins of communication
- Reasons for communication
- Means of communication
- Evolution of languages
- Icons from Egypt to Windows
- Calligraphy
- Movable type / Letterpress / Lithography / Gravure / CTP
- Manuscripts
- Guttenberg
- Franklin
- Freedom of the Press
- Propaganda
- The Internet
- Future Technologies / Hybrid

### Unit Activities - (List)

- Attempt to emulate basic animal communication methods
- Sending messages in battle
- Types of communication, verbal and non-verbal, visual and non-visual role play
- Create an intricate page of manuscript, by hand
- Illustrate icons for common activities or actions
- Contest to find facts about Ben Franklin
- Investigate the role of propaganda throughout history
- Read about the role of the Internet and compare to the history of communication

### Student Assessment

Assessment through visual inspection of materials produced in the process of preparing and researching the subjects in unit activities.

### Text:

Any history book of the student's choosing. Calligraphy samples, Icon samples.  
Handbook of Print Media

## Unit Three: Managing as a Business: Industry Standards

1 week

### Lesson or Unit Objective

Introduction and overview of Industry Standards

### Unit Topics - (List)

- Ethics and Integrity
- Copyright Law
- Overage / Shortage
- Waste and Recycling
- Work Habits, punctuality and attendance
- Attitude
- Teamwork
- Legal Issues

### Unit Activities - (List)

- Discussions on Integrity and Ethics
- Examining Counterfeiting and its Consequences
- The importance of quality
- Laws governing the operation of a business in Massachusetts
- Child Labor Laws
- Copyright Laws and how they affect business

### Student Assessment

Assessment via discussion, informal quizzes and sample exercises in decision making. Right vs. Wrong

### Text:

Current newspaper and/or magazine articles. Historical references and anecdotes.

Handbook of Print Media

## Unit Four: Managing as a Business: Customer Interview Skills

1 week

### Lesson or Unit Objective

Introduction and overview of skills and techniques necessary to ascertain customer needs and desires in the production of their piece.

### Unit Topics - (List)

- Listening skills
- Attention to detail
- Courtesy
- Honesty and Integrity
- Estimating skills

### Unit Activities - (List)

- Discussions on Integrity
- How to listen. Role-playing and creation of materials with strict guidelines
- What it means to be courteous
- Mock interviews with clients
- Learning to break down tasks and assign time segments to determine delivery capabilities
- Mock Phone calls

### Student Assessment

Assessment via game playing skills, mock interviews, informal quizzes, and tests. Discussion, both in small group and entire class.

### Text:

Handbook of Print Media

## Unit Five: Managing as a Business: Financial Considerations

2 weeks

### Lesson or Unit Objective

Students will examine the materials and supplies necessary to produce a printed (or web) piece. Price estimates will be produced after determining the costs associated with the creation of the piece. Invoice creation and bookkeeping.

### Unit Topics - (List)

- The costs of various types of paper
- The costs associated with ink requirements
- An investigation of overhead and its components
- Supplies, Inventory, Personnel expenses
- Hazardous Waste and its disposal
- Taxes and Fees
- Create the invoice
- Determining the Cost / Value Added Markup
- The importance of cash flow
- Filing and Record keeping
- Market Trends
- Quality Assurance

### Unit Activities - (List)

- Compare prices for various types and brands of paper
- Investigate ink types and their costs and benefits
- Search the Internet for legal issues involving taxes and fees
- Visit Staples and Office stores for costs and expenses associated with office supplies
- Prepare a balance sheet showing an understanding of the costs associated with producing a final piece
- Create an invoice
  - Assemble a worksheet detailing all expenses required
  - Research competition for price comparisons
  - Understanding standard billing practices and discount offers
  - Establish a functional filing and record keeping system
  - Create stationery (Letterhead, business card, envelope, receipt, invoice, forms, ads, brochures, and fliers)

### Student Assessment

Assessment via discussion, quizzes and exercises in production of estimate and balance sheets.

### Text:

Current office store circulars, cost comparison reports, library and store research.  
Handbook of Print Media

## Unit Six: Managing as a Business: Understanding Workflow

1 weeks

### Lesson or Unit Objective

Students will learn the sequence of steps required to produce a job for the printing press or for the web.

### Unit Topics - (List)

- Job Categories: Estimating, Pre-Press, Press, Bindery, Finishing
- Filling out the job ticket
- Understanding all fields on the job ticket
- Complete filling of every field on the job ticket
- Proper filing procedures
- Print and Distribute vs. Distribute and Print

### Unit Activities - (List)

- Research job categories, salaries, and responsibilities
- Fill out sample job tickets with various components
- Create your own job ticket for each category
- Reading job tickets already filled out
- Establish a functional filing system

### Student Assessment

Assessment via discussion, quizzes and exercises in creating a functioning filing system, integrating computer software and physical assets.

### Text:

Offset Printing Fundamentals

Print Shop Printing Request Forms

Handbook of Print Media

## Unit Seven: Artwork Preparation

4 weeks

### Lesson or Unit Objective

Students will learn the importance of accuracy and measurement when creating artwork.

### Unit Topics - (List)

- Intro to the Mac and PC and Operating Systems
- Control Panels
- Chooser and Printers
- Folders and Icons
- Data Storage—Servers, zip drives, CDs, floppy drives
- Network log-on
- File formats and saving
- Keyboard Shortcuts
- PC and Mac comparisons
- Internet and E-Mail
- Conversions from Mac /PC, PC/Mac
- Import and Export Images
- Intro to PageMaker, InDesign
- Intro to PhotoShop and Clipart
- Intro to Adobe Type Manager
- Font management and Manipulation
- Menu Items
- Printing Proofs
- Using the light table, and T-Square
- Types of adhesive
- Using a triangle, X-acto knives
- Opaque and ruling techniques
- Crop and register marks
- Overlays and tints
- Rubber cement pick-up
- Non-repro blue pencils
- Thumbnail creation
- Type specing
- Literature and Art
- Preparation for final output
- Destination: Print, Web, Projection

### Unit Activities - (List)

- Draw a font / Create a font
- Draw an action word / Use of color wheel for design
- Letterspace, Kerning and Leading
- Create a paste-up using simple images to tell a story
- Create a ruled page using ruling pen and triangle and t-square
- Create a thumbnail drawing with and without t-square and triangle for comparison
- Create one-color artwork
- Lecture, Demonstration, and Hands-on computer operation
- Design a book, CD, Booklet including illustration, text, images, and impositions
- Illustrate to tell a story

### Student Assessment

Assessment via discussion, quizzes and exercises in creating thumbnails, artwork, and correct printer's marks.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Eight: Artwork Preparation: The Raster Image Processor

2 weeks

### Lesson or Unit Objective

Students will learn the characteristics of materials utilized in creating printed pieces.

### Unit Topics - An Introduction to:

- File Formats
- Raster Image Processor
- Interface with PC and Mac
- Film and Megaplate drivers
- File preparation for gripper, plate bend, and image area
- Printer's marks
- Exposure and density
- Evaluating a film or megaplate

### Unit Activities - (List)

- Examine Raster vs. Vector and Bitmap images
- Review presets for RIP
- Observe load and unload megaplate material
- Observe load and unload negative material
- Observe mix and replenish chemicals for Megaplate and Film Processing
- RIP single-color job for each press
- RIP CMYK job for negative
- Introduce scanning to RIP
- Explain and create color breakdown for RIP
- Troubleshooting RIP

### Student Assessment

Assessment via discussion, observation, quizzes and exercises in chemical mixing and handling.

### Text:

Offset Printing Fundamentals, Handbook of Print Media  
Handbook of Print Media

## Unit Nine: Printing Materials: Substrates

1 week

### Lesson or Unit Objective

Students will learn the characteristics of materials utilized in creating printed pieces.

### Unit Topics - An Introduction to:

- Paper and its manufacture
- Paper usage, the right paper for the job
- Paper weight and measurement
- Paper grain and its importance
- Paper color
- Felt side
- Other substrates

### Unit Activities - (List)

- Explore the print shop recording the various types of paper from labels
- Compare the papers visually without touch and guess types
- Compare papers using tactile senses
- Micrometer usage
- Grain game, distribute like papers with varying grain and determine by experimentation
- Make-up names for various color paper
- Videos on paper making techniques
- Field trip to paper mill

### Student Assessment

Assessment via observation, discussion, quizzes and exercises in repetitive exposure to materials. Paper color naming contest.

### Text:

Offset Printing Fundamentals, Handbook of Print Media  
Handbook of Print Media

## Unit Ten: Printing Materials: Ink

1 week

### Lesson or Unit Objective

Students will learn the characteristics of materials utilized in creating printed pieces.

### Unit Topics - An Introduction to:

- Ink and its manufacture
- Ink usage, the right ink for the substrate
- Viscosity
- CMYK Progressives
- The method of applying on the press
- Transparent vs. Opaque
- Mixing to achieve PMS match
- Dot gain

### Unit Activities - (List)

- Video on ink manufacture
- Field trip to ink manufacturing plant
- Mix inks to match PMS
- Progressives creation on computer, printing to positive film
- Color wheel

### Student Assessment

Assessment via discussion, quizzes and exercises in ink mixing. Evaluation of exercises.

### Text:

Offset Printing Fundamentals, Handbook of Print Media  
Handbook of Print Media

## Unit Eleven: Printing Materials: Chemicals

2 weeks

### Lesson or Unit Objective

Students will understand the importance of safety when handling chemicals, and mixing and measuring of chemicals to achieve proper results. Chemical interactions, and pouring techniques will be covered. Solvents and their uses in the print shop, as well as labeling and replenishment,

### Unit Topics - An Introduction to:

- Solvents and their handling
- Blanket Wash and its uses
- Roller Cleaners
- Lubricants for maintenance
- Fountain Solution mixing and pH
- Pumice and abrasives
- Blanket repair techniques

### Unit Activities - (List)

- MSDS Sheets
- Right-to-Know Laws discussion
- Mixing fountain solution and measuring pH
- Observe Refilling all blanket wash dispensers
- Observe Removing and Cleaning rollers of ink and debris
- Observe Removing and Cleaning blanket of ink and debris
- Observe Removing, Installation and Cleaning plates of ink and debris

### Student Assessment

Assessment via observation, discussion, quizzes and exercises in practical application.

### Text:

Offset Printing Fundamentals, Handbook of Print Media  
Handbook of Print Media

## Unit Twelve: Measurement

1 week

### Lesson or Unit Objective

Students will learn the importance of measurement and be able to measure linear dimensions with an accuracy tolerance of 1/32 inch. Measurement of liquids, inks, and weights.

### Unit Topics - An Introduction to:

- Rulers to 1/32 of an inch
- Using padding spoon to determine paper count measurement
- Use of micrometer for paper weight measurement
- Creating a cutting diagram to determine best cuts for economy
- Handling, Measuring and mixing fountain solution pH
- Handling, Measuring and mixing development and fixer solutions
- Handling, Measuring and mixing plate making chemicals

### Unit Activities - (List)

- Demonstrations of safe and proper mixing procedures
- Create a ruler
- Measure everything in the room
- Draw cutting diagrams
- Paper count game

### Student Assessment

Assessment via discussion, observation, quizzes and exercises in measuring and counting.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Thirteen: Maintenance Overview

1 week

### Lesson or Unit Objective

Students will learn the importance of properly maintaining mechanical equipment to prevent breakdowns.

### Unit Topics - An Introduction to:

- Safety first
- Tag and Lockout procedures
- Record-keeping
- Scheduling of maintenance
- Types of lubricants
- Types of inspections
- The importance of listening

### Unit Activities - (List)

- Prepare a tag for maintenance of common equipment
- Design a lockout procedure for performing maintenance
- View and recreate a schedule for maintenance of common items
- Research, design and create a record-keeping system
- View and handle lubricants
- Visually inspect all pieces of equipment

### Student Assessment

Assessment via discussion, observation, quizzes and exercises in creating schedules on computer, and on paper.

### Text:

Offset Printing Fundamentals, Handbook of Print Media  
Handbook of Print Media

## Unit Fourteen: Cutter Operation

1 week

### Lesson or Unit Objective

Students will learn how to properly operate the Polar Eltromat Guillotine cutter

### Unit Topics - An Introduction to:

- Safety
- Maintenance and Lubrication
- Determine Cut Size
- Setting Back Gauge
- Accommodation of materials
- NCR Impression Bar
- Clamp pressure adjustment
- Blade Sharpness and replacement procedures

### Unit Activities - (List)

- Open all safety panels while machine is disconnected
- Measure length of reach in setting safety distances
- Inspection of all lubrication points
- Read Operator's Manual
- Cut paper to pre-determined size
- Observe Removal and replacement of blade

### Student Assessment

Assessment via discussion, observation, quizzes and review of materials presented. Actual cutting of paper and subsequent measurement for accuracy.

### Text:

Offset Printing Fundamentals, Handbook of Print Media, Polar Operator's Manual  
Handbook of Print Media

## Unit Fifteen: Camera Operation and Photography: Principles of Light

2 weeks

### Lesson or Unit Objective

Students will learn how to properly operate cameras, from small snapshot film or digital, to the large format and horizontal line cameras.

### Unit Topics - An Introduction to:

- Digital Cameras / Film Cameras
- Scanners and Scan software / File formats
- Resolution
- Photography and composition
- Exposure: Aperture and Speed
- Reflection and Refraction
- Interaction with light and dark
- Balance and color
- Effects of direction of incidence
- Use of safelights
- Actinic

### Unit Activities - (List)

- Shutting off room lights and turning on lights of specific colors
- Turning lights on and off from different directions
- Scan or Photograph, Download, and Print images
- Find pictures in magazines showing lighting inconsistencies
- Prism examination and breaking color into its component parts
- Take pictures with natural, ambient, sunlight, fluorescent, and incandescent

### Student Assessment

Assessment via discussion, observation, quizzes and examination of pictures taken. Visual assessment of photos shot.

### Text:

Offset Printing Fundamentals, Photograph basics video handbook, Handbook of Print Media  
Handbook of Print Media

## Unit Sixteen: Camera Operation and Photography: Framing the Image

2 weeks

### Lesson or Unit Objective

Students will learn how to properly shoot a photograph for best results in attaining all pertinent information and image.

### Unit Topics - An Introduction to:

- Excess Coverage and its requirements for printing
- Resolution requirements
- Balance and composition with accommodation for final use
- Horizon point recognition and importance
- Benefits and Pitfalls of Portrait and Landscape orientation

### Unit Activities - (List)

- Photograph images with and without using viewfinder
- Photograph images to avoid cutting off pieces of the view
- Photograph images in various orientations
- Cropping and editing images in PhotoShop
- Field trip to museum

### Student Assessment

Assessment via discussion, observation, quizzes and computer image manipulation

### Text:

Offset Printing Fundamentals  
School of Modern Photography text  
Handbook of Print Media

## Unit Seventeen: Camera Operation and Photography: Camera as Tool

2 weeks

### Lesson or Unit Objective

Students will learn the mechanics of camera operation.

### Unit Topics - An Introduction to:

- Photojournalism, Portrait, Landscape, Art, Reproduction
- Depth of Field and Aperture
- Shutter and Shutter speed adjustment
- Lenses and focal lengths
- Explanation of exposure compensations
- Film formats
- Slide and negative film
- Digital Photography
- How to load a camera
- How to unload a camera

### Unit Activities - (List)

- Examine photo magazines
- Visit museums
- Create images showing depth of field
- Create images showing wide angle and telephoto lens effects
- Take pictures and download to computer
- Load and unload film

### Student Assessment

Assessment via discussion, observation, quizzes and evaluating/inspecting the assigned photographs.

### Text:

Offset Printing Fundamentals  
School of Modern Photography text  
Handbook of Print Media

## Unit Eighteen: Camera Operation and Photography: Film Development

1 week

### Lesson or Unit Objective

Students will learn the techniques of film development.

### Unit Topics - An Introduction to:

- Safety with chemicals
- Chemical mixing and importance of temperature and light safe room
- Agitation
- Processors
- Saturation and Color Balance
- Future Trends

### Unit Activities – Exercises in:

- Mixing chemicals and developing film
- Checking to ensure room is light tight
- What happens without agitation
- What happens with too hot/cold chemical

### Student Assessment

Assessment via discussion, traditional photography in print is being superceded by digital photography

### Text:

Offset Printing Fundamentals  
School of Modern Photography text  
Handbook of Print Media

## Unit Nineteen: Camera Operation and Photography: Contone/Halftone/Line

1 week

### Lesson or Unit Objective

Students will learn the different types of photographic reproduction.

### Unit Topics - An Introduction to:

- Continuous tone photographs
- Grain and film speed
- Halftone images
- Dot and dot gain effects
- Halftone screens
- Line shots
- Quick plates

### Unit Activities - Exercises in:

- Comparison of contone, halftone and line shots
- Magnified view of contone image
- Draw a large halftone image using blocked paper
- Hunt through magazines and pull and label image types

### Student Assessment

Assessment via discussion, observation, quizzes and evaluate choices made in magazine hunt.

### Text:

Offset Printing Fundamentals  
School of Modern Photography text  
Handbook of Print Media

## Unit Twenty: Camera Operation and Photography: Quality Assessment

1 week

### Lesson or Unit Objective

Students will learn the critical characteristics necessary for acceptable photography.

### Unit Topics - An Introduction to:

- Density of negative / image
- Clarity /sharpness of image
- Contrast
- Reticulation
- Scratches
- Fogging
- Lens flare
- Color balance / saturation

### Unit Activities - Exercises in:

- Shoot negatives of various items with different reflectance values
- Using the loupe and exploded view computer to examine the fine details of images
- Comparison of Stouffer strips for each item shot
- Troubleshooting scratches or fogging

### Student Assessment

Assessment via discussion, observation, quizzes and exercises in shooting and examining films.

### Text:

Offset Printing Fundamentals  
School of Modern Photography text  
Handbook of Print Media

## Unit Twenty-One: Stripping: Starting Right

1 week

### Lesson or Unit Objective

Students will learn to prepare jobs for plating. They will learn reasons for, and specifics of, preparation for each press in the shop. The importance of care and attention to detail will be stressed.

### Unit Topics - An Introduction to:

- Safety Issues using knives and scissors
- Evaluating the negative
- Workflow, determining the steps to be followed in production
  - Transferring job ticket information to the flats
  - Determining the paper orientation and print technique (work & turn / tumble, etc.)
  - Create New File Folder or record on Current File Folder
- Measurements and Steps to Stripping Negatives
  - Paper Size
  - Centerline
  - Gripper Margin
  - Bend
  - Bleeds
  - Crop Marks
  - Register Marks
  - Pin Register
  - Goldenrod Paper
  - Schematics
- Cutting Masks
- Opaque and Scribe

### Unit Activities - Exercises in:

- Handling pre-positioned live jobs from negative creation to stripping and opaquing
- Creating new job folders and review current file folder organization

### Student Assessment

Assessment via discussion, observation, quizzes and exercises in live job production. Creation of Dylux prints.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Twenty-Two: Plate Making (Mega and Metal)

1 week

### Lesson or Unit Objective

Students will learn characteristics of light, importance of safety, and careful handling skills. They will also learn the means of, and reasons for, registration and alignment, screen tints and multiple image burns.

### Unit Topics - An Introduction to:

- Safety
- Orientation
- Pin Register
- Alignment
- Actinic light
- Double Burns
- Step and Repeat
- Screens and Tints
- Hand development vs. Processor development
- Dylux prints for proofing purposes

### Unit Activities - Exercises in:

- Plate preparation using pre-positioned live work.
- Pre-positioned work requiring multiple burns, tints and step and repeat will be utilized.
- Dylux prints will be made and trimmed to check for final okay.

### Student Assessment

Assessment via discussion, observation, quizzes and exercises. Examination of Dylux prints and any live work needed on a rush basis.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Twenty-Three: The Printing Press: The Basics

1 week

### Lesson or Unit Objective

Students will learn the safety issues with the offset duplicator. Each machine will require repeat of this unit(s). Maintenance, Lubrication and Work Area cleanliness will be covered.

### Unit Topics - An Introduction to:

- Safety: personal and equipment
- The importance of regularly scheduled maintenance
- Tagging and lockout procedures
- Unsafe condition reporting procedures
- Recording keeping
- Importance of work area orderliness and organization

### Unit Activities - (List)

- Student will review maintenance schedules
- The side panels of the press will be removed and the proscribed lubrication and maintenance will be demonstrated.
- Unsafe equipment will be explained, tagged and reported.
- Record keeping system will be explained.
- Cleanup of press and press area will be discussed and demonstrated.

### Student Assessment

Assessment via discussion, observation, quizzes and exercises in production of live work.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Twenty-Four: The Printing Press: Plate and Blanket

1 weeks

### Lesson or Unit Objective

Students will learn the role of the plate and blanket in production of printed materials. They will understand the necessary requirements for top performance of materials. They will learn the various types of securing means, and adjustment procedures. Students will learn when a blanket needs to be replaced, how to replace it, and how to repair a blanket if possible. The care and cleaning of plates and blankets will be covered.

### Unit Topics - An Introduction to:

- Safety
- Blanket identification
- Blanket and plate evaluation and relationship
- Pin-Bar vs. Clamp mounting
- Blanket repair
- Blanket replacement
- Cleaning the blanket
- Cleaning the plate
- Removing imperfections in plates
- Repairing plates on the press
- Horizontal movement of image
- Vertical movement of image
- Adjusting skew of plate.

### Unit Activities - (List)

- Observation and hands-on exercises with pre-positioned work
- Observation and hands-on exercises with Removal and replacement of blanket
- Observation and hands-on exercises with Removal and replacement of plate
- Video on plate and blanket technologies
- Reading chapters in textbook

### Student Assessment

Assessment via discussion, observation, quizzes and exercises in live work production. Pre-positioned items with intentional imperfections to determine ability of student to find and repair said imperfection.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Twenty-Five: The Printing Press: Feed System

1 week

### Lesson or Unit Objective

Students will learn the means of setting the press to receive paper.

### Unit Topics - An Introduction to:

- Safety
- Proper alignment of guides
- Vacuum adjustment
- Blast adjustment
- Sheet separation
- Table Height adjustment and settings for use with various papers
- Sucker feet assessment
- Paper transfer from Feed Table to Delivery Table
- Paper path
- Register and repeatability

### Unit Activities - (List)

- Read from text
- Draw images showing distinct areas of each press: feed / rollers / plate / impression / delivery
- Observe operators producing live work
- Load and run pre-positioned and live work

### Student Assessment

Assessment via discussion, observation, oral quizzes and exercises in the production of live or pre-positioned work.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Twenty-Six: The Printing Press: Water and Ink Fountains

1 week

### Lesson or Unit Objective

Students will learn the important balance of ink and water and the application of each to the press being operated. They will study different types of water systems, and the importance of pH and surface tension issues in the production of acceptable printing.

### Unit Topics - An Introduction to:

- Safety
- How to Mix Fountain Solution
- Measuring pH and mixing to achieve proper pH
- Achieving the proper ink/water balance
- Proper technique for filling of ink fountain
- Viscosity
- Color and color mixing
- Pantone Matching System Spot Color vs. Process Color
- Adjustment of keys in application of ink for evenness

### Unit Activities - (List)

- Textbook readings
- Observation of preparation in live work
- Observation and hands-on exercises with measuring of fountain solution
- Observation and hands-on exercises with mixing of Pantone colors
- Observe pre-positioned work beginning with each fountain empty

### Student Assessment

Assessment via discussion, written and oral quizzes and exercises in the production of live work.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Twenty-Seven: The Printing Press: The Rollers

1 week

### Lesson or Unit Objective

Students will learn the reason and role of each roller in the press. Recognizing the role of oscillating rollers. Recognizing the role of the impression cylinder and form rollers. Measuring and adjusting roller pressures to assure even ink distribution.

### Unit Topics - An Introduction to:

- Safety
- The water fountain rollers and their importance
- The ink fountain rollers, their role and importance
- Oscillating rollers and their role
- Impression cylinder
- Measuring roller to roller pressures
- Adjustment of pressures to ensure even distribution of ink and water
- The sequence of rollers and the importance of even ink distribution

### Unit Activities - (List)

- Observation and hands-on exercises with all rollers and clean and examine for wear
- Observation and hands-on exercises with the measurement of roller tolerance and compare with specifications in manual
- Textbook readings on roller sequence and role

### Student Assessment

Assessment via discussion, observation, written and oral quizzes and exercises in press cleaning and operating.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Twenty-Eight: The Printing Press: Delivery System

1 week

### Lesson or Unit Objective

Students will learn the path taken by paper in its journey from feed table to delivery table. Students will understand the function of guides and grippers, jogging, stops, and the need for powder application for certain jobs.

### Unit Topics - An Introduction to:

- Safety
- The movement of paper from the feed table to the image application
- The types of grip utilized by the press to handle the paper and pass it from one station to another
- The application of vacuum and blast to achieve single sheet feed
- The function of multi-sheet stops and trips to prevent multiple sheet feeding
- The importance of repeatability and jogging
- Adjusting the delivery side guides
- Adjusting for sheet drop
- Adjustment of the table drop in the delivery system
- The application of powder to aid in preventing offset

### Unit Activities - (List)

- Textbook readings
- Observation of production of live work
- Hands-on operation of press using pre-positioned work of varying paper weights and types
- Observation and hands-on exercises with Production of live work

### Student Assessment

Assessment via discussion, observation, quizzes and exercises in production of live work. Constant monitoring of Competency Sheets is essential.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Twenty-Nine: The Printing Press: Inspection

1 week

### Lesson or Unit Objective

Students will learn the techniques necessary to ensure the work is of top quality. Students will learn how to look for hickeys, toning, scumming, offset, skew, coverage, and positioning of image on the sheets.

### Unit Topics - An Introduction to:

- Safety when removing sheets from the press
- Pulling sheets at regular intervals to inspect
- The importance of adequate lighting conditions
- Attention to detail
- Check both sides: Image Offset: where it comes from and how to eliminate it
- Toning and how to avoid it
- Scumming
- Troubleshooting defects
- Dot Gain
- Even ink application and how to compensate for excess or unequal coverage

### Unit Activities - (List)

- Textbook readings
- Observation of production of live work
- Observation and hands-on exercises with press operation with pre-positioned material
- Observation and hands-on exercises with press operation with live work

### Student Assessment

Assessment via discussion, observation, oral and written quizzes and exercises in production of live work. Constant monitoring of Competency Sheets is essential.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Thirty: The Printing Press: Image Adjustment

1 week

### Lesson or Unit Objective

Students will learn how to move and adjust paper and plate to achieve proper alignment on the press, and ink and water adjustments to achieve maximum quality.

### Unit Topics - An Introduction to:

- Safety
- Adjusting for plate imperfections
- Removal of debris on plate or blanket
- Adjustment of keys on ink fountain to accommodate heavy areas
- Adjustment of water fountain to accommodate ink usage
- Clamp movement to adjust skew
- Blanket cylinder adjustment for vertical alignment
- Feed table guide adjustment for horizontal alignment
- Folding and measurement

### Unit Activities - (List)

- Textbook readings
- Observation of production of live work
- Observation and hands-on exercises with pre-positioned work with intentional imperfections if necessary
- Observation and hands-on exercises with production of live work

### Student Assessment

Assessment via discussion, observation, written and oral quizzes and exercises in the production of live work. Constant monitoring of Competency Sheets is essential.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Thirty-One: The Printing Press: The Press Run

1 week

### Lesson or Unit Objective

Students will learn the how to operate the press to produce a work of superior quality.

### Unit Topics - An Introduction to:

- Safety
- Attention to detail
- Ink and water balance
- The inspection for imperfections
- Setting the counter
- Industry standards for over/under quantities
- Fulfilling the quantity requirements
- Handling work not yet completely dry
- Impact/role of speed in the quality of work
- Ink transfer as related to paper surface and absorption

### Unit Activities - (List)

- Textbook readings
- Observation of production of live work
- Observation and hands-on exercises with production of pre-positioned work
- Observation and limited hands-on exercises with production of live work

### Student Assessment

Assessment via discussion, observation, written and oral quizzes and exercises in the production of live work. Review of material produced over the course of the year to determine weaknesses and strengths. Constant monitoring of Competency Sheets is essential.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Thirty-Two: Bindery Overview

2 weeks

### Lesson or Unit Objective

Students will learn the role of each piece of equipment in the bindery operation.

### Unit Topics - An Introduction to:

- Safety
- Maintenance
- Vacuum and Blast
- Gate setup
- Static Electricity
- Paper feed and handling
- Paper weights and grains
- Measurement and diagrams
- Count and industry standards
- Inspection and packaging
- Packaging

### Unit Activities - (List)

- Textbook readings
- Observation of production of live work
- Observation and hands-on exercises with pre-positioned work
- Observation and limited hands-on exercises with production of live work

### Student Assessment

Assessment via discussion, observation, written and oral quizzes and exercises in the production of live work. Constant monitoring and updating of Competency Sheets and portfolio are essential.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Thirty-Three: The Folder

1 week

### Lesson or Unit Objective

Students will learn the safe operation of the folder.

### Unit Topics - An Introduction to:

- Safety
- Maintenance and lubrication
- Paper feed adjustments
- Guides and importance of parallel
- Air adjustment, blast and vacuum
- Folding gate measurement and adjustment
- Delivery guides and wheel adjustment
- Inspection and packaging

### Unit Activities - (List)

- Textbook readings
- Observation of production of live work
- Observation and hands-on exercises with pre-positioned work
- Observation and limited hands-on exercises with production of live work

### Student Assessment

Assessment via discussion, quizzes and exercises in the production of pre-positioned and live work, as well as constant monitoring of Competency Sheets and portfolio.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Thirty-Four: The Booklet Maker

1 week

### Lesson or Unit Objective

Students will learn the maintenance and operation of the booklet maker.

### Unit Topics - (List)

- Safety
- Maintenance
- Staple loading
- Guide placement
- Adjustment for finish size
- Inspection
- Count
- Packaging

### Unit Activities - (List)

- Textbook readings
- Observation of production of live work
- Observation and hands-on exercises with pre-positioned work
- Observation and limited hands-on exercises with live work

### Student Assessment

Assessment via discussion, observation, oral and written quizzes and exercises in the production of live and pre-positioned work. A constant monitoring and updating of Competency Sheets and portfolio are necessary.

### Text:

Offset Printing Fundamentals

Owner's Manual for Specific equipment

Handbook of Print Media

## Unit Thirty-Five: Wrapping

1 week

### Lesson or Unit Objective

Students will learn the importance and means of packaging for both product integrity and appearance. They will learn the importance of the right package for the job.

### Unit Topics - An Introduction to:

- Safety
- Package specifications (weight and stacking limits)
- Importance of Cleanliness and labeling issues
- Packing materials

### Unit Activities - (List)

- Textbook readings
- Wrapping games
- Observation of production of live work
- Observation and hands-on exercises with pre-positioned work
- Observation and limited hands-on exercises with live work

### Student Assessment

Assessment via discussion, observation, informal quizzes and exercises in pre-positioned and live work.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Thirty-Six: Delivery

1 week

### Lesson or Unit Objective

Students will learn the importance of customer relations and courtesy.

### Unit Topics - An Introduction to:

- Safety
- Lifting guidelines
- Record keeping issues and tracking of packages
- Labeling and clarity of records
- Telephone skills
- Courtesy in delivery
- Leaving the customer in positive frame of mind
- Acceptable procedures for delivery and return (speeding vs. dallying)

### Unit Activities - Exercises in:

- Industry Standards review
- Manners and Courtesy role playing
- Delivery of packages within the school
- Phone notification of packages to be picked up
- Filling out of delivery slips and clip board
- Proper filing of delivery slips upon return
- Timed deliveries within the building

### Student Assessment

Assessment via discussion, observation, informal and formal quizzes and exercises in delivery and phone notification of live work. A constant monitoring of Competency Sheets and delivery slips is essential.

### Text:

Offset Printing Fundamentals  
Handbook of Print Media

## Unit Thirty-Seven: Life After High School

2 weeks

### Lesson or Unit Objective

Students will be introduced to effective methods of acquiring a job and a college education.

### Unit Topics - An Introduction to:

- Job Search
- Applying to College — Basic Requirements
- Portfolio Assembly

### Unit Activities - Exercises in:

- Demonstrate methods of locating work
- Fill out a job application
- Take an employment test
- Role play a job interview
- Research colleges and universities
- Fill out college application
- Write a college essay
- Paying for an education

### Student Assessment

Setting the groundwork for being hired for employment or accepted to a college.

### Text:

Various Student Support Services documents, newspapers, exemplars, brochures, forms.  
Handbook of Print Media

Vocational Graphic Communications I  
(Course No. 676)

Career and Technical Education Department

Waltham High School  
Waltham, Massachusetts

Competencies

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# COMPETENCY RECORD CHART

VOCATIONAL GRAPHIC COMMUNICATIONS / Course #676

YEAR 1

<b>LEGEND</b>	1	Instructed
	2	Demonstrated (can perform with assistance)
	3	Competent (can perform in a reasonable time without assistance)

\_\_\_\_\_  
STUDENT NAME

	1	2	3
<b>SAFETY INSTRUCTION</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>INTRODUCTION</b>			
Defines Role of graphics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identify major printing processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List order of technical production flow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identify occupations in GA industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List responsibilities of each occupation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>WORKING WITH TYPE</b>			
Measure copy/text in points and picas using a line gauge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Measure type using a type-sizing gauge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distinguish between display (headline) type and body (text) type by their point sizes and styles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distinguish between serif and sans serif type styles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>PREPARING DIGITAL IMAGES</b>			
Keyboard typing proficiency of 30-40 wpm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Set text with appropriate margins, formatting, fonts, styles, leading and size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flow copy from word processing program to page layout program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operate a digital image camera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incorporate the basic design principles in hand drawn sketches and measured layouts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate the operation of digital image preparation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Import an image into a page layout document	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Select appropriate software for word processing, graphics, scanning and page layout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>COPY PREPARATION</b>			
Identify basic equipment / materials for paste-up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Produce simple paste-up using same	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Produce complex paste-up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Read and understand a job ticket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**IMAGE ASSEMBLY**

	1	2	3
Establish "true edge" and "vertical alignment" on stripping table (square up)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lay out, measure and rule an unlined masking sheet showing relevant guidelines for single color work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assemble and strip an 8.5" x 11" negative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make necessary corrections to flat (i.e. opaque/scribing)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Determine exposure time for metal plates using transparent step scale and rub down test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prepare metal plates (expose, process and store)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make additions, deletions and repairs to offset plates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate proper waste disposal methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>PERFORMING OFFSET PRESS OPERATIONS</b>			
Demonstrate proper handling techniques of paper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Perform basic setup for printing a single color job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Produce a single color job using an offset duplicator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Properly ink-up press	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean up press sufficiently for color change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>FINISHING AND BINDING OPERATIONS</b>			
Calculate basic paper cuts from stock sheet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Draw a master cutting diagram for making cuts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identify paper characteristics (grain/wt/size)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identify padding equipment/tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Produce pads of paper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identify stapling/stitching equipment/supplies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identify punching/drilling equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Measure/drill holes for three ring notebooks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make accurate paper cuts using a mechanized paper cutter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Produce side and saddle stitched stapled products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make a single fold using an automatic folding machine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# COMPETENCY RECORD CHART

## VOCATIONAL GRAPHIC COMMUNICATIONS

1 2 3

<b>LEGEND</b>	
1	Instructed
2	Demonstrated (can perform with assistance)
3	Competent (can perform in a reasonable time without assistance)

1 2 3

### FINISHING AND BINDING OPERATIONS

Manually collate sets in proper sequence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Makes sets of paper using collating equipment in proper sequence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate basic paper counting techniques to include spoon method, and fanning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate safe paper carrying methods, including roll method	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate basic paper jogging skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### JOB SEARCH SKILLS

List means of locating job openings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Read and comprehend want ads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Write a resume	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Write cover letter for graphics job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Read/comprehend employment app. form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Complete job application form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate interview skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### LIFETIME WORK SKILLS

Demonstrate productive work habits and attitudes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate good attendance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate punctuality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate time management skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate initiative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate ability to work in team setting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>