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ABSTRACT

The course is comprised of two comprehensive courses totaling 135 hours of classwork. Orientation to commercial and advertising art is a necessary prerequisite to entry into the course. The first half of the course introduces the student to the function and operation of the cutawl machine. Through supervised classroom practice, the student acquires the skills necessary to produce three dimensional display and cutout letters. The second half introduces the tools, materials, and techniques used in silk screening. Through practical application of skills, the student learns the procedure of silk screen printing on a commercial level. A bibliography listing basic references and sample posttests conclude the course outline.
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AUTHORIZED COURSE OF INSTRUCTION FOR THE

QUINMESTER PROGRAM



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Course Outline
 COMMERCIAL AND ADVERTISING ART - INTERMEDIATE - 9185
 (Cutawl Techniques and Silk Screen)
 Department 48 - Quin 9185.03

DIVISION OF INSTRUCTION • 1973

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Course Outline

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(Cutawl Techniques and Silk Screen)

Department 48 - Quin 9185.03

county office of

VOCATIONAL AND ADULT EDUCATION

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Dr. E. L. Whigham, Superintendent of Schools
Dade County Public Schools
Miami, Florida 33132

May, 1973

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Course Description

<u>9185</u> State Category Number	<u>48</u> County Dept. Number	<u>9185.03</u> County Course Number	<u>Cutawl Techniques and Silk Screen</u> Course Title
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This quinmester is comprised of two comprehensive courses. The first half of the quin introduces the student to the function and operation of the cutawl machine. Through supervised classroom practice, the student acquires the skills necessary to produce three dimensional display and cutout letters. The second half introduces the tools, materials and techniques used in silk screening. Through practical application of skills, the student learns the procedure of silk screen printing on a commercial level.

Indicators of Success: Prior to entry into this course the student will display mastery of the skills indicated in Orientation to Commercial and Advertising Art (9183.02)

Clock Hours: 135

PREFACE

The following quinmester course outline has been prepared as a guide to help the student become proficient in the use of the cutawl machine and in silk screen process (lacquer film method) techniques.

This outline consists of seven blocks of instruction which are subdivided into several units each. The student must master the skills and techniques of each specific unit in order to meet the objectives of the course. The course is 135 hours in length.

In presenting the material outlined in this course the instructor uses lecture and demonstration methods, with active participation and practice by the student. At times individual help in manipulative skills is most helpful if not necessary. These methods are supplemented by the use of visual aids, charts, diagrams, books and instructional learning packages.

This outline was developed through the cooperative efforts of the instructional and supervisory personnel, the Quinmester Advisory Committee and the Vocational Curriculum Materials Service, and has been approved by the Dade County Vocational Curriculum Committee.

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with Suggested Hourly Breakdown

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Silk Screen Process (Lacquer Method)	1
II. OPERATING THE CUTAWL MACHINE (15 Hours)	
Methods of Operation	1
Chisel Adjustments	1
III. CUTTING PROCEDURES FOR VARIOUS PROJECTS (33 Hours)	
Designs	1
Window Props and Displays	1
Cutting Perfect Circles to Dimensions	1
IV. SILK SCREEN PROCESS (LACQUER FILM METHOD) (10 Hours)	
History	1
Discussion and Examination of Materials and Equipment	2
V. CONSTRUCTION OF A SILK SCREEN APPARATUS-BUILDING FRAME (30 Hours)	
Rabbeted Frames	2
Butt Ended Frames	2
Hinging	2
Baseboards, Table	2
Side Kicks	2
VI. SILK SCREEN PROCESS FILM CUTTING (40 Hours)	
Preparing the Film for Cutting	2
Cutting Film from Design Original	2
Adhering (Lacquer Film) Materials	2
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GOALS

The student must be able to:

1. Demonstrate a sincere and continued interest in this field by further study.
2. Progress through the intermediate course utilizing the knowledge and skills, where applicable, gained from the previous blocks of study.
3. Continue to further find oneself in the direction of specialization within the field.
4. Demonstrate an awareness of the proper use and care of tools of the profession and their relationship to precision work.
5. Demonstrate an ability to work in harmony with his associates by using proper ethics and good work habits.

SPECIFIC BLOCK OBJECTIVES

BLOCK I - ORIENTATION

The student must be able to:

1. Explain orally or in writing the importance of the cutawl machine to the industry as a whole.
2. Understand the uses of the cutawl machine to the tradesman, orally or in writing.
3. Understand the operations of the cutawl machine to the satisfaction of the instructor, orally or in writing.

BLOCK II - OPERATING THE CUTAWL MACHINE

The student must be able to:

1. Demonstrate how to make the necessary adjustments on the machine before using (chisel selection, depth of cut and speed selection).
2. Demonstrate the methods and techniques necessary to the various cutting procedures (straight lines, circular cuts, compound cuts).
3. Demonstrate how to use the locking device on the cutawl machine to the satisfaction of the instructor.

BLOCK III - CUTTING PROCEDURES FOR VARIOUS PROJECTS

The student must be able to:

1. Demonstrate how to apply a given or original design by the pounce, transfer or direct method and execute the work to the satisfaction of the instructor.
2. Demonstrate how to make and use a scaled drawing pounce, transfer or direct design and execute thoroughly a window prop or display to the satisfaction of the instructor.
3. Demonstrate the technique of cutting circles with the circle cutter attachment in the cutawl machine to the satisfaction of the instructor.
4. Demonstrate orally or in writing the necessary precautions to be observed in the use of the cutawl machine and the attachments.

BLOCK IV - SILK SCREEN PROCESS (LACQUER FILM METHOD)

The student must be able to:

1. State orally or in writing the history of silk screen process and its origin to the present day techniques.
2. State orally or in writing the uses of silk screen process techniques as we know them today.
3. Explain, after examination and discussion, orally or in writing the materials and equipment involved in present day techniques of silk screen process.
4. Show an understanding of the small strip equipment used for silk screen printing.
5. Show an understanding of the facilities for silk screen production of a large plant.

BLOCK V - CONSTRUCTION OF A SILK SCREEN APPARATUS-BUILDING FRAME

The student must be able to:

1. Demonstrate the construction of a silk screen frame and its components (base, hinges, side kicks).
2. State orally or in writing the basic safety precautions to be observed in the construction and use of a silk screen apparatus.

BLOCK VI - SILK SCREEN PROCESS FILM CUTTING

The student must be able to:

1. Demonstrate the preparation of a lacquer film stencil, marking for registration prior to the cutting process.
2. Demonstrate the film cutting procedure from the design original and the preparation of the film stencil for adhering.
3. Demonstrate the adhering techniques of lacquer film stencils and the observing of safety rules in this procedure.
4. Demonstrate the blocking-out procedures for lacquer film stencils and the various solutions that can be used in layers of lacquer base block-outs.

BLOCK VII - QUINMESTER POST-TEST

The student must be able to:

1. Satisfactorily complete the quinmester post-test.

Course Outline

COMMERCIAL AND ADVERTISING ART - INTERMEDIATE - 9185 (Cutawl Techniques and Silk Screen)

Department 48 - Quin 9185.03

I. ORIENTATION

- A. Cutawl Machine
 - 1. Examination
 - 2. Importance
 - 3. Uses
- B. Silk Screen Process (Lacquer Method)

II. OPERATING THE CUTAWL MACHINE

- A. Methods of Operation
 - 1. Using the bottom cutting board
 - 2. Fastening of subject matter
 - 3. Cutting straight lines
 - 4. Making circular cuts
 - 5. Locking device
- B. Chisel Adjustments
 - 1. Depth of cut
 - 2. Speed (high and low)

III. CUTTING PROCEDURES FOR VARIOUS PROJECTS

- A. Designs
 - 1. Pounce method
 - 2. Transfer sheet (carbons or lead)
 - 3. Direct drawing
- B. Window Props and Displays
 - 1. Scaled drawings
 - 2. Pounce or transfer
 - 3. Direct drawing
- C. Cutting Perfect Circles to Dimensions
 - 1. Circle cutter attachment
 - 2. Safety precautions for all procedures

IV. SILK SCREEN PROCESS (LACQUER FILM METHOD)

- A. History
 - 1. Origin
 - 2. Uses

- B. Discussion and Examination of Materials and Equipment
 - 1. Small shop procedures
 - a. One man setup
 - b. Drying techniques
 - 2. Plant procedures
 - a. Automatic printers
 - b. Forced drying techniques

V. CONSTRUCTION OF A SILK SCREEN APPARATUS-BUILDING FRAME

- A. Rabbeted Frames
- B. Butt Ended Frames
- C. Hinging
- D. Baseboards, Table
- E. Side Kicks

VI. SILK SCREEN PROCESS FILM CUTTING

- A. Preparing the Film for Cutting
 - 1. Attaching film to master drawing
 - 2. Marking placement of registrations
- B. Cutting Film from Design Original
 - 1. Tools
 - a. X-acto knife
 - b. X-acto #16 blade
 - 2. Stripping film after scoring-correct method
- C. Adhering (Lacquer Film) Materials
 - 1. Adhering liquid
 - 2. Soft cotton cloth
- D. Blocking Out
 - 1. Lacquer (film lacquer)
 - 2. Other materials
 - a. Glues
 - b. Shellac
 - c. Water base block out
 - d. Paper

VII. QUINMESTER POST-TEST

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A P P E N D I X

Quinmester Post-Test Sample

QUINMESTER POST-TEST I

Name _____ Date _____ Score _____

True-False Test Items

Each of the following statements is either true or false. If the statement is true, draw a circle around the letter T following it; if the statement is false, draw a circle around the F. If a statement is false in part, it is entirely false.

1. The electric motor of the cutawl machine will work on either 115 volt or 230 voltage. T F
2. Your blade choice for the cutawl machine does not determine how you position your work piece. T F
3. When operating the cutawl machine, the operator can move the machine backward or forward, right or left without changing the basic position of the machine. T F
4. For general cutting with the cutawl machine, materials such as wallboard, cardboard, felt, cloth, etc., over 3/8" thick, blade No. 24 is used. T F
5. The cutawl machine operates at a high speed of 3600 strokes per minute. T F
6. Tusche is a black, waxy emulsion which is water repellent when dry and does not allow the glue to touch the silk. T F
7. Lacquer thinner is used to adhere the film to the silk. T F
8. To hold an image on a screen after use the screen must be cleaned with mineral spirits. T F
9. To adhere a paper stencil to the silk, the best method is to apply ink to the silk with the squeegee over the paper stencil. T F
10. The type of wood frame used to staple the screen to the wood is always a hard wood. T F

QUINMESTER POST-TEST II

Name _____ Date _____ Score _____

Completion Test Items

Fill in the blank or blanks with the word or words that make the statement correct.

1. The cutawl machine has a _____ total degree swivel cutting action.
2. Two types of the three blades used in the cutawl machine are _____ and _____.
3. All cutawl blades with round shanks have a _____ on one side of the shank.
4. Before connecting the cutawl machine to the power source, the switch must be turned _____ and the _____ wire connected properly.
5. By placing the pulley belt on the small diameter, the machine runs at a low speed of _____ strokes per minute.
6. In printing multicolor silk screen it is most important to have _____ for good registration.
7. To remove an image from the silk screen the use of the chemical _____ is applied to the silk and image with a soft rag.
8. The use of liquid _____ is used to patch up areas of film that may have not clearly adhered to the silk.
9. The film design is cut out with an _____ knife and the cutout areas are best picked away from the film with _____.
10. To best preserve the wood frame that the silk screen is secured to, the use of _____ tape is the most popular way.

ANSWER KEY TO QUINMESTER POST-TESTS

Post-Test I

1. F
2. F
3. T
4. T
5. T
6. T
7. F
8. T
9. T
10. F

Post-Test II

1. 360
2. Chisel, saw
3. Flat
4. Off, ground
5. 2,800
6. Register guides
7. Acetone
8. Blockout
9. Exacto, tweezers
10. Masking