This course allows students who are interested in careers in apparel manufacturing to learn the techniques for operating the various types of special machines used for finishing garments professionally and for specialty work. Course content includes goals, specific objectives, orientation, safety practices, special machines, assembling a child's dress using diversified machines, and production--section work. Prior to entry in this course the student will have completed the course "Attachments--Special Feed--Draping." A bibliography and posttest are appended. (NH)
Course Outline

APPAREL MANUFACTURING - 9377
(Special Machines)

Department 48 - Quin 9377.10
Course Outline

APPAREL MANUFACTURING - 9377
(Special Machines)

Department 48 - Quin 9377.10
THE SCHOOL BOARD OF DADE COUNTY

Mr. G. Holmes Braddock, Chairman
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Dr. Ben Sheppard

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

March, 1974

Published by the School Board of Dade County
This course includes operation of special machines for specialty work, terms, definitions, threading and mechanical problems on the Merrow, sew serge, hemmer, buttonhole, button sewer, double needle, chain stitch embroidery, hooks and eyes, and zig-zag machines will be included. This is a two or three quinmester credit course.

Indicators of success: Prior to entry in this course, the vocational student will have completed Attachments - Special Feet - Draping (9377.09).

Clock Hours: 135.
The following quarter outline has been prepared for the student who is interested in careers in apparel manufacturing. This course is entitled Special Machines (9377.10).

This advanced course is 135 hours in length, is divided into six blocks of study and concluded by a post-test.

Prior to entry in this course, the vocational student will have completed Attachments - Special Feet - Draping (9377.09).

During this course the student will learn techniques in the operation of the various types of special machines used for finishing garments professionally and for specialty work. The student will learn technical terms, definitions, threading the machines and how to recognize mechanical problems. Included will be speed practice on target on the industrial single-needle machine. He or she will learn how to operate the three-thread overcasting machines and the four-thread sew serge machines with the safety stitch which are used for finishing and cutting seams in one operation.

The course is designed to aid students in developing competence in the operation of the blind stitch machine, the buttonhole machine, the button sewer, the embroidery chain stitch machine, the double-needle machine and the zig-zag machine.

Upon completion of the course, the student will be adept in the operation of the industrial single-needle machine as well as the special machines. He or she will be able to turn out professional type garments using newest techniques. The instruction is further developed with available films, illustrations, information sheets and other recommended materials as well as lectures and demonstrations.
This outline was developed through the cooperative efforts of the instructional and supervisory personnel, the Quimnester Advisory Committee, and the Vocational Curriculum Materials Service, and has been approved by the Dade County Vocational Curriculum Committee.
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- Student's Responsibilities... 1
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- The Blind Stitch Machine... 4
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GOALS

The Apparel Manufacturing student must be able to demonstrate:

1. The ability to understand the industrial single-needle machine in its entirety.

2. An understanding of the importance of operating the machines with speed and quality sewing.

3. The basic mechanics in the operation of special machines.

4. Knowledge of the types of operations on garments which require use of special machines.

5. An ability to maintain good health and hygiene.

6. The ability to continue learning throughout his or her career in apparel manufacturing.
SPECIFIC BLOCK OBJECTIVES

BLOCK I - ORIENTATION

The student must be able to:

1. State what will be expected of him or her as a student of apparel manufacturing.
2. Write a paragraph stating the qualifications necessary for obtaining employment.
3. Demonstrate a sense of responsibility to fellow workers by applying practices to maintain good health.

BLOCK II - SAFETY PRACTICES

The student must be able to:

1. Explain why it is necessary to use special machines for special work.
2. Write a paragraph on safety rules.

BLOCK III - SPECIAL MACHINES

The student must be able to:

1. Define the technical terms of special machines.
2. Explain why overcasting is used on seams of garments.
3. Determine the difference between overcasting and sew serging.
4. Describe why it is necessary to thread all machines correctly and with speed.
5. Evidence an understanding for safe-keeping and handling of tools.
6. Explain why correct needles are important to quality sewing.
7. Operate all special machines with efficiency.
8. Discuss the importance of proper maintenance and oiling of machines.

BLOCK IV - ASSEMBLING A CHILD’S DRESS USING DIVERSIFIED MACHINES

The student must be able to:

1. Assemble a child’s dress using as many different machines as possible.
2. Complete the dress with a professional finish.

BLOCK V - PRODUCTION - SECTION WORK

The student must be able to:

1. Display skills in section work.
2. Produce a bundle of work in target time.
BLOCK VI - QUINMESTER POST-TESTS

The student must be able to:

1. Satisfactorily complete the quinmester post-tests.
Course Outline

APPAREL MANUFACTURING - 9377
(Special Machines)

Department 48 - Quin 9377.10

I. ORIENTATION

A. Objectives of the Course
   1. Methods of evaluation
      a. Paper and pencil tests
      b. Manipulation
      c. Job performance
      d. Hands on
   2. Standards

B. Student's Responsibilities
   1. School policies
      a. Absences
      b. Make-up
      c. Promptness
   2. Safety regulations
   3. Work regulations
      a. Good health and hygiene
      b. Appropriate dress
      c. Reporting lost equipment
      d. Reporting ineffective equipment
      e. Good housekeeping
      f. Reporting lost items

C. Student Benefits
   1. Opportunities for employment
      a. Scope of trade
      b. Job opportunities
      c. Geographical opportunities
   2. Qualifications for employment
      a. Job competency
      b. Pride in workmanship
      c. Attitude and good work habits
      d. Dependability
      e. Personality
      f. Creativity
      g. Individual achievement
      h. Personal development
      i. Educational training
II. SAFETY PRACTICES

A. Safety Pledge
   1. Safety lesson (review)
      a. Safety rules
      b. Safety test-fire drill
      c. Turning off the power before attempting to make adjustments
      d. Safe-keeping of removed parts
      e. Principles of keeping a clean safe working area
      f. Hands safe distance from needle
      g. Reporting machine problems

B. Safety in the Use of Tools
   1. Placement of tools
   2. Storage of tools

III. SPECIAL MACHINES

A. Overcasting Machines
   1. Types of machines used in classrooms
      a. Rimoldi
      b. Singer
      c. Merrow
   2. Principle parts and technical terms
   3. Function of machines
      a. Overcasting open seams
      b. Joining and trimming seams
      c. Specialty work
   4. Tools and equipment
      a. Screwdriver
      b. Tweezer aid for threading
      c. Wrenches for loosening nuts
      d. Needles
      e. Wire for threading
      f. Scissors
      g. Brush for cleaning lint from machine
      h. Oil
   5. Cleaning and oiling
      a. Cleaning the lint from machine
      b. Techniques for adjusting oil well release and stopper
      c. Oiling the tensions
   6. Adjusting the tensions
   7. Regulating the stitch
   8. Threading the machine with three-cones of thread
      a. Using the wire and tweezers as an aid in threading
      b. Threading the machine using the thread chart as a guide
      c. Check for correct threading
III. SPECIAL MACHINES (Contd.)

9. Operating the overcasting machine
   a. Turning the switch to "on" position
   b. Using the foot pedal for raising the presser foot for positioning the work under the needle
   c. Using the treadle for running the machine
   d. Testing for correct stitch
   e. Techniques for starting and finishing seams

10. Hands-on practice
    a. Overcasting on straight edge of cloth
    b. Overcasting curves
    c. Overcasting squared off piece of cloth

11. Making a sample project

B. The Sew Serge Safety Stitch Machine
1. Types of machines used in classroom
   a. Rimoldi
   b. Wilcox and Gibbs
2. Principal parts and technical terms
3. Function of machines
   a. Used on knits and other difficult fabrics
   b. Joining and trimming seams
   c. Specialty work
4. Tools and equipment
   a. Screwdriver
   b. Tweezer aid for threading
   c. Wrenches
   d. Needles
   e. Wire for threading
   f. Scissors
   g. Brush for cleaning lint from machine
   h. Oil
5. Cleaning and oiling
   a. Cleaning the lint from machine
   b. Techniques for adjusting oil well and stopper
6. Adjusting the tensions
7. Regulating the stitch
8. Threading the machine with four cones of thread
   a. Using the wire and tweezer as aid for threading
   b. Threading the machine using the thread chart as a guide
   c. Check for correct threading
9. Operation of the sew serge safety stitch machine
   a. Turning the switch to "on" position
   b. Using the foot pedal to raise the presser foot for positioning work
   c. Stepping down on the treadle to start the machine running
   d. Testing for correct stitch
   e. Techniques for starting and finishing seam
10. Hands-on practice
   a. Sew serging on straight piece of cloth
   b. Sew serging on curved edges of cloth
   c. Sew serging on squared off piece of cloth

11. Making a sample project

C. The Blind Stitch Machine
   1. Types used in the classrooms
      a. Columbia Blind Stitch
      b. U.S. Blind Stitch

   2. Principle parts and technical terms

   3. Function
      a. Used for hems on garments
      b. Used for hems on draperies
      c. Used for hems on bedspreads

   4. Tools and equipment
      a. Screwdriver
      b. Needles
      c. Brush for cleaning lint from machine
      d. Oil
      e. Scissors

   5. Cleaning and oiling

   6. Adjusting the tension

   7. Regulating the stitch

   8. Threading the blind stitch machine using one cone of thread
      a. Swinging the front section of the machine away from arm to permit easy access for threading needle
      b. Using the chart as a guide, threading all guides and tension
      c. Swinging front section back to original position

9. Preparing the hem

10. Operating the machine
    a. Turning the switch to "on" position
    b. Using the knee control to position work under the needle

11. Hands-on practice
    a. Straight hem
    b. Slightly curved hem
    c. Bias hem

12. Making a sample project

D. The Singer Double-Needle Machine
   1. Function
      a. Sews a strong seam which gives a flat fell seam appearance
      b. Decorative stitching

   2. Principle parts and technical terms

   3. Tools and equipment
      a. Screwdriver
      b. Scissors
      c. Seam ripper
      d. Brush for cleaning lint from machine
      e. Oil
III. SPECIAL MACHINES (Contd.)

4. Cleaning and oiling the machine
5. Regulating the stitch
6. Adjusting the tensions
7. Threading the machine with two cones of thread using the chart as a guide.
   a. Needle on left, thread from right (groove side)
   b. Needle on right, thread from left side (groove side)
8. Winding the bobbin
   a. Inserting the bobbin in the bobbin case
   b. Inserting the bobbin case and bobbin on stud underneath machine
   c. Bringing up the thread
9. Operating the machine
   a. Turning the switch to "on" position
   b. Raising the presser foot with the knee lift and positioning the work under the needle
   c. Testing for correct stitch
   d. Preparing the work for flat fell seaming
10. Hands-on practice
    a. Straight seam
    b. Curved seam
    c. Top stitch
    d. Setting a pointed or squared off pocket
11. Making a sample project

E. The Reece Buttonhole Machine
1. Function
   a. To provide buttonholes for closings on garments
   b. Decorative work
2. Principle parts and technical terms
3. Tools and equipment
   a. Screwdriver
   b. Wrenches
   c. Scissors
   d. Buttonhole keys (sizes of buttonholes)
   e. Seam ripper
   f. Brush for cleaning lint from machine
   g. Oil
4. Cleaning and oiling
5. Changing the buttonhole size
6. Regulating the underside gauge to conform with size of key
7. Adjusting the tensions
8. Threading the machine with one cone of thread using chart as a guide
9. Preparing the hem
10. Operating the machine
    a. Turning the switch to "on" position
    b. Stepping down hard on treadle for automatic buttonhole
    c. Raising presser foot with the hand lever
    d. Stopping machine when thread breaks and restart machine
11. Hands-on practice
   a. Changing the size of the knife
   b. Regulating the underneath gauge to conform with size of the knife
12. Making a sample project

F. The Button Sewer
   1. Function
      a. Practice sewing a two or four hole button garment
      b. Decorative
      c. Bar tacking
   2. Principle parts and technical terms
   3. Tools and equipment
      a. Screwdriver
      b. Scissors
      c. Brush for cleaning lint from machine
      d. Oil
   4. Cleaning and oiling
   5. Adjusting the lever for:
      a. Two hole button
      b. Four hole button
      c. Size of bar tack
   6. Adjusting the clamp for button size
   7. Threading the machine with one cone of thread using chart as a guide
   8. Operating the machine
      a. Preparing the work
      b. Turning the switch to "on" position
      c. Raising the presser foot with the left foot pedal for inserting button in clamp and positioning the work under the needle
      d. Stepping down hard on the right foot pedal for automatic setting on button
   9. Hands-on practice
      a. Two hole buttons
      b. Four hole buttons
      c. Bar tacking
   10. Making a sample project

G. The Zig-zag Machine
   1. Function
      a. Overcasting seams
      b. Decorative stitching
      c. Appliqueing
      d. Sewing with elastic
   2. Principle parts and technical terms
   3. Tools and equipment
      a. Screwdriver
      b. Seam ripper
      c. Scissors
      d. Brush for cleaning lint from machine
      e. Oil
      f. Bobbins
      g. Bobbin case
      h. Needles
III. SPECIAL MACHINES (Contd.)

4. Cleaning and oiling
5. Threading the machine using chart as a guide
6. Winding the bobbin
7. Inserting the bobbin in the bobbin case
8. Inserting bobbin case and bobbin on stud in underpart of machine
9. Regulating the length of the stitch
10. Regulating the width of the stitch
11. Adjusting the tensions
12. Preparing the work
13. Operating the machine
   a. Raising the presser foot with the knee lift
   b. Positioning the work
   c. Using fingertip control
14. Hands-on practice
   a. Zig-zag stitching on straight piece of cloth
   b. Curves
   c. Bias
   d. Appliqueing
   e. Sewing with elastic
   f. Sewing with lace on edge of material
   g. Inserting lace on fabric
15. Making sample projects

H. The Singer Chain Stitch Embroidery Machine
1. Function
   a. Embroider names on uniforms or apparel
   b. Embroidery for decorative purposes
2. Tools and equipment
   a. Screwdriver
   b. Wire hook for threading
   c. Scissors
   d. Brush for cleaning lint from machine
   e. Oil
3. Principal parts and technical terms
4. Describing hand skills necessary for operating the embroidery machine
5. Threading the upper part of the machine with a chart as a guide with one cone of thread
6. Threading the underside of the machine with one cone of thread
7. Operating the machine
   a. Turning switch to "on" position
   b. Using the hand lever for raising the presser foot for positioning work under the needle
   c. Using the handle under the machine to regulate direction for design
8. Hands-on practice
   a. Designs to be sketched by student or instructor
   b. Distribution of practice design to students
9. Making sample projects
IV. ASSEMBLING A CHILD'S DRESS USING DIVERSIFIED MACHINES

A. Tools, Supplies and Equipment
1. Machines
2. Bobbins
3. Bobbin cases
4. Thread
5. Screwdriver
6. Threading wires
7. Wrenches
8. Tweezers
9. Scissors
10. Pencil
11. Job sheet

B. Embroidery Designs or Name on Project

C. Hands-on Practice
1. Child's dress
2. Preparing the child's dress for work
   a. Embroidering name or design on dress as desired
   b. Overcasting outer edges on facing (Herrow, Rimoldi, or Singer)
   c. Joining facings to dress front and back according to pattern using the straight stitch single machine (clipping, turning, top stitching)
   d. Setting the sleeves (single-needle machine)
   e. Joining seams (sew serge)
   f. Prepare sleeve hem (stitch with double-needle machine)
   g. Prepare bottom hem (stitch with blind stitch machine)
   h. Making buttonholes on right edge of front of dress
   i. Sewing buttons on left side of dress to conform with buttonholes
3. Pressing

V. PRODUCTION -- SECTION WORK

A. Work in Sections with Bundles
1. Sewing in sections
2. Bundling and ticketing each section

B. Machine or Cooperative Work
1. Herrow, Rimoldi or Singer machines for overcasting
2. Single-needle machine
3. Sew serge
4. Double needle
5. Blind stitch
6. Buttonhole
7. Button sewer
8. Pressing
C. Distribution of Bundles

D. Starting to Work on Target
1. Opening the bundle
2. Marking the ticket
3. Positioning the work
4. Starting to sew
5. Finishing the bundle, tying, ticketing

VI. QUINMESTER POST TESTS
BIBLIOGRAPHY
(Special Machines)

Basic References:


Supplementary References:


17. **The Merrow Overcasting Machine Style 60**. Hartford, Conn.: The Merrow Co. n.d.


APPENDIX

Quinmester Post-Test Samples
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. Four cones of thread are used for threading the safety stitch sew serge machine. T F
2. Three cones of thread are used to thread the safety stitch sew serge machine. T F
3. The Reece buttonhole machine needs a change of knives for the size of the buttonhole. T F
4. Buttonhole knives are the only change made when adjusting the size of the buttonhole. T F
5. It is not necessary to test the stitch after threading the machine. T F
6. The overcasting machine is used for overcasting seams. T F
7. The double-needle machine has two needles. T F
8. Blind stitching means you can't see the stitch on the right side of the material. T F
9. The knee control is used to lift the presser foot on the overcasting machine. T F
10. The double-needle machine sews a flat fell seam. T F
Completion Test Items

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

1. Overcasting seams stops them from ____________.
2. The ____________ ____________ ____________ needs four threads to work correctly.
3. You must have a ____________ and a ____________ to thread the safety stitch sew serger machine correctly.
4. The stitch must be ____________ to conform with the work.
5. Sometimes it is necessary to adjust the ____________ if the stitch is not correct.
6. There are ____________ tensions on the overcasting machine.
7. The Wilcox & Gibbs safety stitch sew serger machine is threaded with ____________ cones of thread.
8. Stepping down on the treadle ____________ the machine running.
9. Items are made on the ____________ ____________ machine.
10. ____________ the front section of the blind stitch machine away from the arm, makes it easier to thread the needle.
This test has been so designed that upon its completion it will be possible to determine just how well you can perform the fundamental operations of threading the complicated special machines and testing for correct stitch.

1. Prepare a hem for blind stitch.
2. Prepare a flat fell seam.
3. Change the size of the buttonhole on the Reece machine.
4. Prepare to sew a two hole button on a piece of cloth.
5. Prepare to sew a four hole button on a piece of cloth.
6. Thread the overcasting machines.
   a. Rimoldi
   b. Singer
   c. Merrow
7. Thread the safety stitch sew serge machines.
   a. Rimoldi
   b. Wilcox & Gibbs
8. Thread the double-needle machine.
9. Thread the blind stitch machine.
10. Thread the Reece buttonhole machine.
11. Thread the button sewer.
12. Thread the embroidery machine.
13. Thread the single-needle machines.
    a. Singer
    b. Brother
    c. Union special
14. Test all machines for correct stitch.
15. Make a project using as many of the special machines as possible.
Essay Test Items

Read each question carefully before attempting to answer it. Write the answer on a standard answer sheet which you can secure from your instructor. Be accurate and neat in your work. Do not copy the questions; simply number each question in the left hand margin.

1. In what way does the stitch on the overcasting machine differ from the sew serge machine?
2. Describe the reason for correct threading as an important factor to sewing.
3. We stress efficiency and speed. Why?
4. Why is it necessary to clean and oil the machine often?
5. What is the purpose for your making a safety pledge?
QUINMESTER POST-TEST V

Name_________________________ Date________________ Score____

SPELLING TEST

1. special 
2. machine 
3. specialty 
4. terms 
5. definitions 
6. threading 
7. cone 
8. hemmer' 
9. blind stitch: 
10. double 
11. needle 
12. chain 
13. embroidery 
14. zig-zag 
15. buttonhole 
16. button sewer 
17. sew serge 
18. four 
19. five 
20. three 
21. tensions 
22. responsibilities 
23. safety pledge 
24. dependability 
25. achievement 
26. practices 
27. adjustments 
28. pliers 
29. scissors 
30. storage 
31. merrow 
32. overcasting 
33. technical 
34. principal parts 
35. cleaning 
36. oiling 
37. regulating 
38. wire 
39. tweezer 
40. guide 
41. operating 
42. project 
43. types 
44. joining 
45. equipment 
46. wrenches 
47. brush 
48. using 
49. aid 
50. switch
ANSWER KEY TO QUINMESTER POST-TESTS

Post-Test I

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

Post-Test II

1. Fraying
2. safety stitch sew serge
3. tweezer and wire
4. regulated
5. tensions
6. three
7. five
8. starts
9. blind stitch
10. swinging

Post-Test III

All answers satisfactorily acceptable to the instructor.

Post-Test IV

1. The sew serge machine has a safety stitch as well as overcasting.
2. If the machine is threaded incorrectly, it will not sew.
3. for quality sewing
4. to keep the machine in good working condition
5. to make certain all safety regulations will be observed