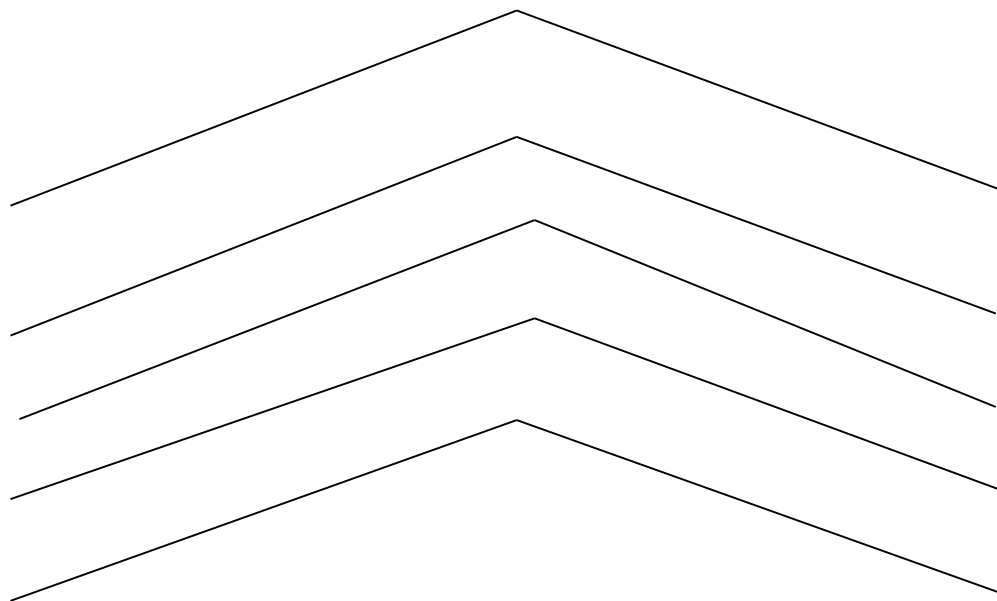


**BANGLADESH TECHNICAL EDUCATION BOARD**



**4- YEAR**

**DIPLOMA IN TEXTILE TECHNOLOGY**

**SYLLABUS**

**6<sup>TH</sup> SEMESTER**

# 4-YEAR DIPLOMA IN TEXTILE ENGINEERING PROGRAM

## TEXTILE TECHNOLOGY

### COURSE STRUCTURE

#### Sixth semester

SL NO	SUBJECT CODE	NAME OF THE SUBJECT	T P C			Marks				
						Theory		practical		Total
						Cont. Assess	Final exam.	Cont. Assess.	Final exam.	
1.	1961	Wet processing-III	3	3	4	30	120	25	25	200
2.	1962	Clothing-II	3	3	4	30	120	25	25	200
3.	1963	Textile testing & quality control-III	3	3	4	30	120	25	25	200
4.	1964	Textile calculation-I	2	0	2	20	80	-	-	100
5.	1965	Fabric structure & analysis-II	3	3	4	30	120	25	25	200
6.	5841	Business organization & Communication	2	0	2	20	80	-	-	100
7.	2012	Industrial management	3	0	3	30	120	-	-	150
			<b>19</b>	<b>12</b>	<b>23</b>	<b>190</b>	<b>760</b>	<b>100</b>	<b>100</b>	<b>1150</b>

**AIMS**

To enable the students with an opportunity to acquire knowledge, skill and attitude in the area of Wet processing with special emphasis on

- Printing
- Finishing

**SHORT DESCRIPTION**

Basic concept of printing and its importance; Style of printing and methods of printing; dying & printing machinery; Fabric printing processes. Finishing process.

**DETAIL DESCRIPTION****THEORY:****1.0 Understand printing & its importance.**

- 1.1 Define printing.
- 1.2 Distinguish between dyeing and printing.
- 1.3 Mention the flow-chart of printing.
- 1.4 Describe the preparation of cloth for printing.
- 1.5 Classify the thickener.
- 1.6 State the functions of thickener.
- 1.7 Mention the important properties of thickener.

**2.0 Understand the style of printing and methods of printing.**

- 2.1 Distinguish between Style of printing and Methods of printing.
- 2.2 Describe the Styles of printing.
- 2.3 Describe the Methods of printing.

**3.0 Understand the fabric printing processes.**

- 3.1 Describe the printing of cotton fabric with reactive dyes.
- 3.2 Describe the printing of cotton fabric with vat dyes.
- 3.3 Describe the printing of cotton fabric with direct dyes.
- 3.4 Describe the printing of polyester goods with disperse dyes.
- 3.5 Describe the printing of TC fabric with pigment.

**4.0 Understand the wool and silk fabric printing process.**

- 4.1 Describe the printing of wool fabric with reactive dyes.
- 4.2 Describe the printing of silk fabric with reactive dyes.
- 4.3 Describe the printing of wool fabric with acid dyes.
- 4.4 Describe the printing of silk fabric with acid dyes.

**5.0 Understand finishing & calendering processes.**

- 5.1 Define finishing process.
- 5.2 Mention the objects of finishing process.
- 5.3 Classify the finishing process.
- 5.4 Define calendering.
- 5.5 State the objects of calendering.
- 5.6 Classify the calendering.
- 5.7 State the different calendering process.

**6.0 Understand the Mercerizing.**

- 6.1 State mercerizing.

- 6.2 Mention the objects of mercerizing.
- 6.3 Describe the mercerizing process.
- 6.4 Describe the factors to be considered for mercerizing.

**7.0 Understand the stentering.**

- 7.1 Objectives of stentering process.
- 7.2 Classify the stentering machine.
- 7.3 Mention the function of stentering.
- 7.4 State the stentering process.

**8.0 Understand the optical whitening agent/brightening agent.**

- 8.1 State optical whitening agent.
- 8.2 List the commercial name of optical whitening agent.
- 8.3 Describe the application of optical whitening agent on cotton,
- 8.4 Describe the application of optical whitening agent on wool and silk,

**9.0 Understand the washing.**

- 9.1 State washing.
- 9.2 Mention the objects of washing.
- 9.3 Classify the washing machine.
- 9.4 Describe the washing processes.

**10.0 Understand the dyeing & printing machines**

- 10.1 Describe the basic requirements of dyeing machines
- 10.2 Mention the classification of dyeing machines.
- 10.3 Describe the operation of fibre dyeing machines
- 10.4 Describe the operation of package dyeing machines.
- 10.5 Describe the features of Jigger, Winch and Jet dyeing machine.
- 10.6 Distinguish between Jigger dyeing machine and Jet dyeing machine.
- 10.7 Describe the different screen printing machines.

**PRACTICAL:**

- 1 Printing of cotton fabric with reactive dyes.
- 2 Printing of cotton fabric with vat dyes.
- 3 Printing of cotton fabric with direct dyes.
- 4 Printing of polyester goods with disperse dyes.
- 5 Printing of wool fabric with acid dyes.
- 6 Printing of silk fabric with acid dyes.
- 7 Application of optical whitening agent on cotton
- 8 Mercerizing process on cotton yarn/fabric

**BOOK REFERENCE:**

টেক্সটাইল কেমিস্ট্রি-২ অ্যান্ড অ্যাডভান্সড ডাইং- আবু সিনা মোঃ রোকনুল কাদের

টেক্সটাইল কেমিস্ট্রি-৩, ইঞ্জিনিয়ার মোঃ মজিবুর রহমান।

**AIMS**

- To develop understanding and skill on
  - Operating different sewing machine.
  - Sewing of garments by using different types of sewing machine.
- To develop basic knowledge of different work aid of sewing machine.
- To develop basic knowledge of care level code.

**SHORT DESCRIPTION:**

Sewing machine; Feed mechanism of sewing machine; Needle; sewing thread; Interlining; furring; Finishing & care level code.

**1.0 Understand sewing machine.**

- 1.1 State sewing machine.
- 1.2 List the types of sewing machine used in garments industry.
- 1.3 State the components of a general sewing machine.
- 1.4 Discuss the manually operated sewing machine.
- 1.5 Distinguish between manually operated sewing machine and power driven sewing machine.
- 1.6 Mention the features of lock stitch machine.
- 1.7 State the characteristics of chain stitch machine.
- 1.8 Discuss the characteristics of over lock machine.
- 1.9 State the specification of zigzag & flat lock machine.
- 1.10 Mention the features of button-hole machine.

**2.0 Understand the feed mechanism of sewing machine.**

- 2.1 State the importance of feed mechanism.
- 2.2 List the types of feed mechanism.
- 2.3 State the purpose and uses of different feed mechanism.
- 2.4 Describe the different types of feed mechanism.

**3.0 Understand the needle of sewing machine.**

- 3.1 Discuss about sewing needle.
- 3.2 State the functions of sewing needle.
- 3.3 Identify the different parts of sewing needle.
- 3.4 Draw and discuss the needle point.
- 3.5 Identify the causes of needle damage.

**4.0 Understand the sewing thread.**

- 4.1 State the term sewing thread.
- 4.2 Classify the sewing thread.
- 4.3 Discuss about sewing thread and fabric specification.
- 4.4 Discuss the different types of sewing thread and seam strength.
- 4.5 Describe the types of thread packages.
- 4.6 Mention the relation between sewing thread and needle size.
- 4.7 Describe different types of sewing faults with their causes & remedies.
- 4.8 Discuss the different packer problems.

**5.0 Understand the different work aid of sewing machine.**

- 5.1 State the importance of work aid.
- 5.2 List different items of work aid.

- 5.3 Draw & identify different item of work aid.
- 5.4 Mention the uses of work aids.

**6.0 Understand the interlining.**

- 6.1 Define interlining.
- 6.2 State the importance of interlining.
- 6.3 Classify interlining.
- 6.4 Define sewn interlining and fusible interlining.
- 6.5 State the requirement of fusible interlining.
- 6.6 State the properties of fusible interlining.
- 6.7 Describe the different types of fusible interlining.

**8.0 Understand the furring & resin coating.**

- 8.1 Define furring.
- 8.2 State the importance of furring.
- 8.3 Describe reverse furring, sandwich furring and double furring.
- 8.4 Mention the factors of quality control of furring.
- 8.5 Compare the different types of furring.
- 8.6 Describe the conditions of fusing.
- 8.7 Define resin coating.
- 8.8 State the necessities of resin coating.
- 8.9 Describe the conditions of fusing.

**9.0 Understand the finishing.**

- 9.1 Define finishing.
- 9.2 State the necessities of thread cutting.
- 9.3 Mention the factors of pressing.
- 9.4 List the different equipment of pressing.
- 9.5 Discuss the methods of different pressing techniques.

**10.0 Understand the folding & packing.**

- 10.1 Define folding & packing.
- 10.2 Classify folding
- 10.3 Discuss the methods of folding & packing.

**11.0 Understand the care level code.**

- 11.1 State the term care level code.
- 11.2 List the symbol of international care level code.
- 11.3 Discuss the meaning of different care level code.
- 11.4 Mention the uses of care level code.

**Practical:**

- 1.0 Practice the operation of general sewing machine.
- 2.0 Practice the operation of
  - A) Lock stitch sewing machine
  - B) Chain stitch sewing machine.
  - C) Over lock sewing machine.
  - D) Blind stitch machine
- 3.0 Draw & identify the different types of feed mechanism.
- 4.0 Draw & identify the different parts of needle.
- 5.0 Draw & identify the different points of sewing needle.

- 6.0 Sketch and identify the different types of foot of sewing machine.
- 7.0 Practice the folding & packing of different garments.
- 8.0 Practice the production of different parts of garments with fusing.
- 9.0 Practice the production of different parts of garments with fusing:
  - A) Pillow cover.
  - B) Ladies shirt.
  - C) Petticoat.
  - D) Skirt.
- 10. Practice the production of following items using trimmings.
  - a) shirt.
  - b) pant.
  - c) short pant.
  - d) coat.

**REFERENCE BOOKS:**

- 1. Garments and clothing technology- Abul Quassin.

**AIMS**

To enable the students with an opportunity to acquire knowledge and skill about

- Testing & quality control
- Techniques and system of testing & quality control
- Operating systems of different modern testing instruments
- Interpretation and analysis of testing & quality control data
- Uses and maintenance of testing instrument on Fabric testing

**SHORT DESCRIPTION**

Basic concept of fabric testing; Dimensional test for fabrics; Fabric thickness; Threads per inch and thread count in woven fabric; Crimp; Tensile properties of fabric; Air Permeability of fabrics; Water permeability of fabric; Crease of fabric; stiffness handle & drape of fabric; abrasion; Shrinkage of fabric; Fastness of fabric; Quality control, Statistical, Quality control, Control charts, Process control in spinning, Weaving, Finishing & Clothing, HVI, AFIS & ISO.

**DETAIL DESCRIPTION****THEORY:****FABRIC TESTING****1.0 Understand the Fabric Testing.**

- 1.1 Discuss the importance of fabric testing.
- 1.2 List the quality particulars of fabric.
- 1.3 Explain the importance of sampling of fabric for testing.
- 1.4 State the number of tests for determining fabric quality.

**2.0 Understand the Dimensional test for fabrics.**

- 2.1 Discuss about dimensional parameters of fabrics.
- 2.2 Describe the method of determining the length of fabric by
  - a) Using a Measuring table
  - b) Using a Measuring scale ie. hand method.
  - c) Using a Measuring machine-i) Drum method, ii) Clack method  
iii) Folding method.
- 2.3 Describe the method of determining the width of fabric.
- 2.4 Describe the method of determining the mass per unit area of woven fabric.

**3.0 Understand Fabric thickness.**

- 3.1 State the main principle of fabric thickness measurement.
- 3.2 Mention the factors considered during fabric thickness measurement.
- 3.3 Mention the name of fabric thickness measurement instrument.
- 3.4 Describe the method of finding the fabric thickness by digital thickness gauge.

**4.0 Understand threads per inch and thread count in woven fabric.**

- 4.1 Define set specification.
- 4.2 Describe different methods to determine threads per inch in woven fabric.

**5.0 Understand Crimp.**

- 5.1 Define crimp.
- 5.2 State the effect of crimp on fabric properties.
- 5.3 Discuss the points to be considered during crimp measurement.
- 5.4 Describe the method of crimp measurement by different crimp tester



- with their working procedure & precautions.
- 5.5 Discuss about cover factor.

**6.0 Understand Tensile properties of fabric.**

- 6.1 State the importance of fabric strength measurement.
- 6.2 Mention the techniques of the fabric strength measurement.
- 6.3 Describe different techniques of fabric strength measurement such as cut strip test, grab test, tearing test, bursting test.

**7.0 Understand Air Permeability of fabrics.**

- 7.1 Define and Classify permeability.
- 7.2 State the importance of air permeability & fabric properties.
- 7.3 Define air permeability.
- 7.4 Describe the method of measuring the air permeability of cloth by Shirley air permeability tester with a) machine description. b) working procedure.

**8.0 Understand water permeability of fabric.**

- 8.1 State the importance of water permeability.
- 8.2 Define absorbency, shower proof, water proof, water repellent.
- 8.3 Explain the basic concept of wetting & water repellency.
- 8.4 Discuss different methods of measuring water resistance of a fabric viz. a) wetting time test, b) Spray test, c) Drop penetration test & d) Hydrostatic head test.

**9.0 Understand crease of fabric.**

- 9.1 Define crease, crease resistance, crease recovery.
- 9.2 Mention the effects of crease
- 9.3 Describe the method of measuring crease recovery by.
- a) Total crease recovery tester
- b) Shirley crease recovery tester

**10.0 Understand stiffness handle & drape of fabric.**

- 10.1 Define fabric stiffness, handle, drape, bending length, flexural rigidity.
- 10.2 State the factors influencing fabric stiffness, handle & drape.
- 10.3 Describe the method of measuring drape by Drape meter.
- 10.4 Mention the methods of stiffness measurement with the name of instruments used.
- 10.5 Describe the method of stiffness measurement by Shirley stiffness tester.

**11.0 Understand abrasion.**

- 11.1 Define serviceability, wear and mention the purpose of serviceably testing.
- 11.2 Define abrasion resistance & classify different type of abrasion.
- 11.3 State the causes of abrasion and state the factors considered before measurement of abrasion resistance.
- 11.4 Mention the methods of assessment of abrasion damage.
- 11.5 Describe the methods of measuring abrasion resistance

**12.0 Understand shrinkage of fabric.**

- 12.1 Define fabric shrinkage.
- 12.2 Mention the type of shrinkage.
- 12.3 Describe the methods of shrinkage measurement.

**13.0 Understand Fastness of fabric.**

- 13.1 Explain fastness.

- 13.2 Mention different type of fastness property of fabric.
- 13.3 Describe sampling method for different fastness test.
- 13.4 Describe the methods of measuring the following fastness properties-
  - a) Colour fastness to washing.
  - b) Colour fastness to Perspiration
  - c) Colour fastness to light.

#### **14.0 Understand Quality control, Statistical quality control and Control chart.**

- 14.1 Define quality control, statistical quality control, control chart with its interpretation.
- 14.2 Mention different limits, rules and procedure to construct a control chart.
- 14.3 Describe about different types of control chart
- 14.4 Construct control chart from given data.

#### **15.0 Understand process control in spinning, weaving, finishing and clothing**

- 15.1 Discuss process control
- 15.2 Classify process control and state the steps of process control
- 15.3 Define and distinguish process control and product control.
- 15.4 Mention and describe the process control measures at different stages and also the steps taken in spinning weaving, finishing and clothing

#### **16.0. Understand HVI**

- 16.1. Define HVI
- 16.2 State the tests that can be done by HVI machine in different module.
- 16.3. Mention the merits of HVI machine
- 16.4. Discuss about the operational procedure of HVI and interpretation of HVI results.

#### **17.0 Understand AFIS**

- 17.1 Describe AFIS
- 17.2 Mention the tests that can be done by AFIS in different module
- 17.3 Discuss about the operational procedure of AFIS and analysis of AFIS result.
- 17.4. Define calibration of cotton.
- 17.5 Classify calibration of cotton.
- 17.6 Describe the importance of calibration of cotton.

#### **18.0 Understand ISO**

- 18.1 Define ISO with its objectives and Principles
- 18.2 State the importance of ISO certification
- 18.3 Describe the steps for getting ISO quality certificate.
- 18.4 Describe the steps of awarding ISO certificate
- 18.5 Discuss about the functions and quality of quality control personnel

**PRACTICAL:**

Perform the following tests in laboratory with suitable instrument describing the objects of the experiment, sampling procedure, machine detail, working principle, test procedure, interpretation of results. Precautions to be taken with elaborate sketch of the machine or system.

1. Determine the length and width of a fabric sample by means of a meter scale.
2. Determine the mass per unit area of a fabric.
3. Determine the thickness of a fabric sample by thickness gauze.
4. Determine the threads per unit length by
  - a) Counting glass & needle.
  - b) Shirley tapper line grating.
5. Determine the crimp of a sample by crimp meter.
6. Determine the strength of a fabric sample by:-
  - a) Ravelled strip test.
  - b) Cut strip test
  - c) Grab test.
  - d) Tounge test
  - e) Bursting test.
7. Determine the air permeability of a fabric.
8. Determine the water resistance of a fabric.
9. Determine the crease recovery of a fabric.
10. Determine the abrasion resistance of a fabric.
11. Determine the fastness properties of a fabric.
12. Determine the durability of a carpet.
13. Determine the thickness of a carpet.
14. Calibrate HVI with calibrating cotton.
15. Perform test with HVI and evaluate the test results.
16. Calibrate AFIS with calibrating cotton.
17. Perform test with AFIS and evaluate the test results.
18. Perform test with Uster tester and evaluate the test results.
19. Construct control chart and evaluate the chart for different count of yarn.
20. Construct control chart and evaluate the chart for twist regularity and strength of different count and type of yarn.

**Book references:**

1. Textile testing -J.E. Booth
2. Textile testing Fibre, yarn & fabric- Dr. Arindam Basu.
3. Textile testing- P Angappan & R. Gopalakrishnan
4. টেস্টিং অব টেক্সটাইল- আ. ক. ম. ফরিদুল আজাদ
5. টেক্সটাইল টেস্টিং- ইঞ্জিনিয়ার মোঃ মজিবুর রহমান।

**AIMS:**

- To develop basic knowledge of calculation about cotton spinning such as-
  - a) Blow room
  - b) Carding
  - c) Draw frame
  - d) Simplex
  - e) Ring frame.
- To develop basic knowledge of calculation about different yarn numbering system & moisture relative of textiles.

**SHORT DESCRIPTION:**

Blow room calculation; Carding calculation; Drawing calculation; Simplex calculation; Ring frame calculation & calculation of yarn numbering.

**DETAIL DESCRIPTION:****SPINNING****1.0 Understand the calculation of blow room.**

- 1.1 Gearing calculation of different blow room machines.
- 1.2 Calculation the draft and lap length of scutcher.
- 1.3 Calculation the cleaning efficiency of blow room.
- 1.4 Calculation the production of blow room.
- 1.5 Calculation the lap hank.
- 1.6 Solve the problems of blow room section.

**2.0 Understand the calculation of cotton carding.**

- 2.1 Calculation the speeds of different rollers of carding machine.
- 2.2 Calculation the draft & draft constant.
- 2.3 Calculation the silver hank & production.
- 2.4 Solve the problem of carding machine.

**3.0 Understand the calculation of drawing machine.**

- 3.1 Calculation the speeds of rollers of drawing machine.
- 3.2 Calculation draft & draft constant.
- 3.3 Calculation the production and efficiency.
- 3.4 Solve the problems of drawing frame.

**4.0 Understand the combing calculation.**

- 4.1 Calculation the speeds of rollers.
- 4.2 Calculation draft & draft calculation.
- 4.3 Calculation the silver count & production.
- 4.4 Solve the problems of comber.

**5.0 Understand the calculation of simplex**

- 5.1 Calculation the speed of different rollers & spindle speed of simplex machine.
- 5.2 Calculation the draft and draft constant.

5.3 Calculation the twist, twist constant, roving count and production.

5.4 Solve the problem of simplex.

**6.0 Understand the calculation of ring frame.**

6.1 Calculation the speeds of different rollers & spindle of ring frame by a gearing diagram.

6.2 Calculation the draft & draft constant.

6.3 Calculation the twist, twist constant, count & production.

6.4 Mention the twist factor for different count.

6.5 Solve the problem of ring frame.

**7.0 Understand the different yarn numbering systems.**

7.1 Calculation the yarn numbering in direct system.

7.2 Calculation the yarn numbering in indirect system.

7.3 Convert the yarn number from one system to another system.

7.4 Solve the problems of yarn manufacturing systems.

**8.0 Understand moisture content & regain of Textile materials**

8.1 Define moisture regain & moisture content percentages.

8.2 Relation between moisture regain & moisture content.

8.3 Calculate the moisture regain & moisture content of different Textile fibres.

**AIMS**

To provide the students with an opportunity to acquire knowledge, skill and attitude in the area of fabric structure and cloth analysis with special emphasis on

- Fabric construction
- Fabric drafting and lifting plan
- Analysis of cloth

**SHORT DESCRIPTION**

Basic concept of Satin and Sateen; Extra warp design; Extra weft design; Double cloth; Waded double cloth; Backed cloth; Crepe weave; Hucaback weave; Honey comb weave; Cord and bed ford cord; Velvet weave design; Terry weave and Cloth analysis.

**DETAIL DESCRIPTION****THEORY:****1.0 Understand the Satin and Sateen.**

- 1.1 Define satin and sateen.
- 1.2 Compare between satin and sateen design.
- 1.3 Discuss the classification of satin.
- 1.4 Determine the move numbers of satin
- 1.5 Draw a design of satin weave with drafting and lifting plan.
- 1.6 Draw a design of sateen weave with drafting and lifting plan.
- 1.7 Discuss the uses of satin and sateen weaves.

**2.0 Understand the extra warp design.**

- 2.1 Define extra warp design.
- 2.2 Describe the features of extra warp design.
- 2.3 Draw the extra warp designs.
- 2.4 Mention the uses of extra warp designs.

**3.0 Understand the extra weft design.**

- 3.1 Define extra weft design.
- 3.2 Describe the features of extra weft design.
- 3.3 Draw extra weft designs.
- 3.4 Compare between extra warp and extra weft design.
- 3.5 Mention the uses of extra weft design.

**4.0 Understand the double cloth.**

- 4.1 Define double cloth.
- 4.2 Classify the double cloths.
- 4.3 Draw self- stitched double cloth.
- 4.4 Draw center stitched double cloth.
- 4.5 Draw double cloth stitched by thread interchange.
- 4.6 Draw double cloth stitched by cloth interchange.
- 4.7 Mention the uses of double cloth.

**5.0 Understand the waded double cloth.**

- 5.1 Define waded double cloth.
- 5.2 State the purposes of waded double cloth.
- 5.3 Discuss the feature of waded double cloth.

- 5.4 Draw a design of warp and weft wadded double cloth.
- 5.5 Mention the uses of waded double cloth.

**6.0 Understand backed cloth.**

- 6.1 Define the term backed cloth.
- 6.2 Classify the backed cloth.
- 6.3 Discuss the warp backed cloth.
- 6.4 Draw a warp backed cloth design.
- 6.5 State weft backed cloth.
- 6.6 Draw the weft backed cloth design.
- 6.3 State the relationship between warp backed cloth and weft backed cloth.
- 6.8 Mention the uses of backed cloth.

**7.0 Understand the crepe weave.**

- 7.1 Define crepe weave.
- 7.2 Discuss the feature of crepe weave.
- 7.3 Classify the crepe weave.
- 7.4 Draw the crepe weave design with drafting and lifting plan.
- 7.5 Mention the uses of crepe weave.

**8.0 Understand Hucaback weave.**

- 8.1 Define Hucaback weave.
- 8.2 Draw the Hucaback design.
- 8.3 Mention the uses of Hucaback fabric.

**9.0 Understand the Honey comb weave.**

- 9.1 Define honey comb and brighten honey comb weave.
- 9.2 Classify the honey comb weave.
- 9.3 Discuss the feature of honey comb weave.
- 9.3 Draw the honey comb and brighten honey comb design with drafting and lifting.
- 9.5 Distinguish between honey comb and brighten honey comb weave.
- 9.6 Mention the uses of honey comb and brighten honey comb weave.

**10.0 Understand the cord and bed ford cord.**

- 10.1 Define cord and bed ford cord fabric.
- 10.2 Classify the bed ford cord.
- 10.3 Discuss the feature of bed ford cord.
- 10.4 Differentiate between cord and bed ford cord.
- 10.5 Draw the cord and bed ford cord with drafting and lifting plan.
- 10.6 Mention the uses of bed ford cord.

**11.0 Understand Velvet weave design.**

- 11.1 Define velvet weave.
- 11.2 Classify the velvet design.
- 11.3 Discuss the feature of velvet design.
- 11.4 Draw the velvet design with drafting and lifting plan.
- 11.5 Mention the uses of velvet weave.

**12.0 Understand the Terry weave.**

- 12.1 Discuss the feature of terry weave.
- 12.2 Classify the rules of terry weave.
- 12.3 Draw terry weave.
- 12.4 Mention the uses of terry weave.

### **13.0 Understand the cloth analysis.**

- 13.1 Explain the purpose of cloth analysis.
- 13.2 Mention the factors of cloth analysis.
- 13.3 Discuss the face and back side of the cloth.
- 13.4 Describe the repeat of the fabric.
- 13.5 Describe the design of the fabric.
- 13.6 Describe the procedure to find out the warp and weft from the fabric.
- 13.7 Describe the yarns count of the fabric.

### **PRACTICAL:**

- 1. Construct the satin and Sateen design with drafting & lifting plan.
- 2. Construct the extra warp and extra weft in a design.
- 3. Construct double cloth.
- 4. Construct self stitched double cloth.
- 5. Construct center stitched double cloth.
- 6. Construct the warp and weft backed cloth.
- 7. Construct crepe weave design with drafting & lifting plan.
- 8. Construct honey comb and Brighten honey comb design with drafting & lifting plan.
- 9. Analyze the supplied sample cloth.
- 10. Determine the counts of Supplied sample cloth, yarn.
- 11. Identify the face side and back side of the sample cloth.
- 12. Create design by analyzing the sample cloth.



## AIMS

- To be able to understand the basic concepts and principles of business organization.
- To be able to understand the banking system.
- To be able to understand the trade system and stock exchange activities in Bangladesh.
- To be able to understand the basic concepts of communication and its types, methods.
- To be able to perform in writing, application for job, complain letter & tender notice.

## SHORT DESCRIPTION

Principles and objects of business organization; formation of business organization; banking system and its operation; negotiable instrument; stock exchange; home trade and foreign trade. Basic concepts of communication model & feedback; types of communication; methods of communication; formal & informal communication; essentials of communication; report writing; office management; communication through correspondence; official and semi- official letters.

## DETAIL DESCRIPTION

### 1 Understand business organization.

- 1.1 Define business.
- 1.2 Mention the objects of business.
- 1.3 Define business organization.
- 1.4 State the function of business organization.

### 2 Understand the formation of business organization.

- 2.1 Define sole proprietorship, partnership, Joint stock company. And co-operative.
- 2.2 Describe the formation of sole proprietorship, partnership, joint stock company & co operative.
- 2.3 Mention the advantages and disadvantages of proprietorship, partnership and joint stock company.
- 2.4 State the principles of co operative & various types of co operative.
- 2.5 Discuss the role of co-operative society in Bangladesh.

### 3 Understand the banking system and negotiable instrument.

- 3.1 Define bank.
- 3.2 State the service rendered by bank.
- 3.3 Describe the classification of bank in Bangladesh.
- 3.4 State the functions of Bangladesh bank in controlling money market.
- 3.5 State the functions of commercial bank in Bangladesh
- 3.6 Mention different types of account operated in a bank.
- 3.7 Mention how different types of bank accounts are opened and operated.
- 3.8 Define negotiable instrument.
- 3.9 Discuss various types of negotiable instrument.
- 3.10 Describe different types of cheque.
- 3.11 Define letter of credit.

### 4 Understand the home & foreign trade

- 4.1 Define home trade & foreign trade.
- 4.2 Describe types of home trade.

- 4.3 Differentiate between whole sale trade and retail trade.
- 4.4 Define foreign trade.
- 4.5 Mention the advantages and disadvantages of foreign trade.
- 4.6 Mention the classification of foreign trade.
- 4.7 Discuss the import procedure & exporting procedure.
- 4.8 Discuss the importance of foreign trade in the economy of Bangladesh.

**5 Understand the basic concepts of communication**

- 5.1 Define communication & business communication.
- 5.2 Describe the scope of business communication.
- 5.3 State the objectives of business communication.
- 5.4 Discuss the essential elements of communication process.

**6 Understand the communication model and feedback.**

- 6.1 Define communication model.
- 6.2 State the business functions of communication model.
- 6.3 Define feedback.
- 6.4 State the basic principles of effective feedback.
- 6.5 Explain the essential feedback to complete communication process.

**7 Understand the types of communication.**

- 7.1 Explain the different types of communication.
- 7.2 Distinguish between upward and downward communication.
- 7.3 Define two-way communication.
- 7.4 Describe the advantages and disadvantages of two-way communication.
- 7.5 Define formal & informal communication.
- 7.6 Describe the advantages and disadvantages of formal & informal communication.
- 7.7 Distinguish between formal and informal communication.

**8 Understand the methods of communication.**

- 8.1 Define communication method.
- 8.2 Discuss the various methods of communication.
- 8.3 Describe the advantages and disadvantages of oral communication.
- 8.4 Describe the advantages and disadvantages of written communication.
- 8.5 Distinguish between oral and written communication.

**9 Understand the essentials of communication.**

- 9.1 Discuss the essential feature of good communication.
- 9.2 Describe the barriers of communication.
- 9.3 Discuss the means for overcoming barriers to good communication.

**10 Understand the report writing.**

- 10.1 Define report, business report & technical report.
- 10.2 State the essential qualities of a good report.
- 10.3 Describe the factors to be considered while drafting a report.
- 10.4 Explain the components of a technical report.
- 10.5 Distinguish between a technical report and general report.
- 10.6 Prepare a technical report.

**11 Understand the office management.**

- 11.1 Define office and office work.
- 11.2 State the characteristics of office work.

- 11.3 Define filing and indexing.
- 11.4 Discuss the methods of filing.
- 11.5 Discuss the methods of indexing.
- 11.6 Distinguish between filing and indexing.

**12 Understand the official and semi-official letters.**

- 12.1 State the types of correspondence.
- 12.2 State the different parts of a commercial letter.
- 12.3 Define official letter and semi-official letter.
- 12.4 Distinguish between official letter and semi-official letters.
- 12.5 Prepare the following letters: interview letter, appointment letter, joining letter and application for recruitment. Complain letters, tender notice.

## AIMS

### **To provide opportunity to develop skill knowledge and understanding.**

- To be able to develop the working condition in the field of industrial or other organization.
- To be able to understand develop the labour management relation in the industrial sector.
- Use of management tools and techniques in the process of decision-making.
- Handling union problems.
- Making case-studies on decision-making.

## SHORT DESCRIPTION

Basic concepts of management; principles of management; scientific mgt; planning; organization; motivation; span of supervision; decision making; leader ship; budget and budgetary control; inventory control; economic-lot size; break-even-analysis personnel management and human relation; staffing and man power development; training of staff; job evaluation and merit rating; industrial dispute; concept of leadership; trade union; labour laws and industrial laws

## DETAIL DESCRIPTION

### **THEORY:**

#### **1.0 Understand the basic concepts & principles of management.**

- 1.1 Define management and industrial management.
- 1.2 State the objectives of modern management.
- 1.3 Describe the scope and functions of management.
- 1.4 State the principles of management.
- 1.5 Discuss the terms: administration, organization, and management.
- 1.6 State the activity level of industrial management from top personnel to workmen.
- 1.7 Describe the reaction among administration, organization & management.
- 1.8 Explain the social responsibilities of management.

#### **2.0 Understand the concept of scientific management.**

- 2.1 Define scientific management.
- 2.2 Discuss the basic principles of scientific management.
- 2.3 Explain the different aspects of scientific management.
- 2.4 Discuss the advantages and disadvantages of scientific management.
- 2.5 Describe the difference between scientific management and traditional management.
- 2.6 Describe the following four periods of management thought
  - (I) Pre-scientific management.
  - (II) Scientific management.
  - (III) Human relations
  - (IV) Refinement extension and synthesis of management theories and practices.

### **3.0 Understand the concept of planning**

- 3.1 Define planning.
- 3.2 State the types of planning.
- 3.3 Discuss the steps of planning.
- 3.4 State the importance of planning
- 3.5 Describe the factors considered for planning.

### **4.0 Understand the concepts of organization and organization structure.**

- 4.1 Define management organization.
- 4.2 State the elements of management organization.
- 4.3 Discuss the types of organization structure.
- 4.4 Describe different forms of organization structure.
- 4.5 Define organizational chart.
- 4.6 Describe the different types of organizational chart.

### **5.0 Understand the concept of motivation.**

- 5.1 Define motivation.
- 5.2 Discuss the importance of motivation.
- 5.3 Describe financial and non-financial factors of motivation.
- 5.4 State the motivation process or cycle.
- 5.5 Discuss the relation between motivation and morale.

### **6.0 Understand the basic concept of span of supervision.**

- 6.1 Define span of supervision and optimum span of supervision.
- 6.2 Discuss the considering factors of optimum span of supervision.
- 6.3 Discuss advantages and disadvantages of optimum span of supervision.
- 6.4 Define delegation of authority.
- 6.5 Explain the principles of delegation of authority.
- 6.6 Explain the terms: authority. Responsibility and duties.

### **7.0 Appreciate decision-making and techniques of decision-making.**

- 7.1 Define decision-making.
- 7.2 State the necessity and importance of decision-making.
- 7.3 Discuss the types/classification of decision-making.
- 7.4 Explain the techniques/steps in decision making
- 7.5 Enumerate the aids to decision-making.
- 7.6 Advantages of good decision.

### **8.0 Understand the concept of leadership.**

- 8.1 Define leadership.
- 8.2 Discuss the importance and necessity of leadership.
- 8.3 Discuss the functions of leadership.
- 8.4 Identify of types of leadership.
- 8.5 Describe the qualities of a leader.
- 8.6 Distinguish between autocratic leader and democratic leader.

### **9.0 Understand the concept of personnel management and human relation.**

- 9.1 Define personnel management.
- 9.2 Describe the scope of personnel management.
- 9.3 Discuss the importance of personnel management.
- 9.4 Discuss of functions of personnel management.

- 9.5 Discuss the disadvantages of personnel management in Bangladesh.
- 9.6 Describe the way solving problems of personnel management in Bangladesh.

**10.0 Understand the staffing and manpower development.**

- 10.1 Define staffing.
- 10.2 Discuss the importance and necessity of staffing.
- 10.3 Define recruitment and selection of employees.
- 10.4 Describe various sources of recruitment of employees.
- 10.5 Describe the various methods of selection of employees.
- 10.6 Discuss the advantages and disadvantages of internal sources of recruitment.
- 10.7 Discuss the disadvantages of external sources of recruitment.
- 10.8 Discuss manpower planning.
- 10.9 Describe advantages and limitations of manpower planning.

**11.0 Understand the concept of industrial dispute.**

- 11.1 Define industrial dispute.
- 11.2 Discuss the elements of industrial dispute.
- 11.3 Describe the causes of industrial dispute.
- 11.4 Discuss the modes of dispute settlement in Bangladesh.
- 11.5 Explain the terms.
  - Strike.
  - Lock-out
  - Picketing
  - Gherao
  - Go slow.

**12.0 Understand the different aspects of trade union.**

- 12.1 State the objectives of trade union.
- 12.2 Discuss the functions of trade union.
- 12.3 State major trade unions in Bangladesh.
- 12.4 Explain the rules of application for registration of trade union in Bangladesh.
- 12.5 Explain the causes of weakness of trade unions in Bangladesh.

**13.0 Understand the various labor and industrial laws/acts.**

- 13.1 Explain the importance of labor and industrial acts/laws.
- 13.2 Explain the following acts and laws.
  - Factories act
  - Minimum wages act
  - Industrial disputes act
  - Workmen compensation act
  - Trade union act