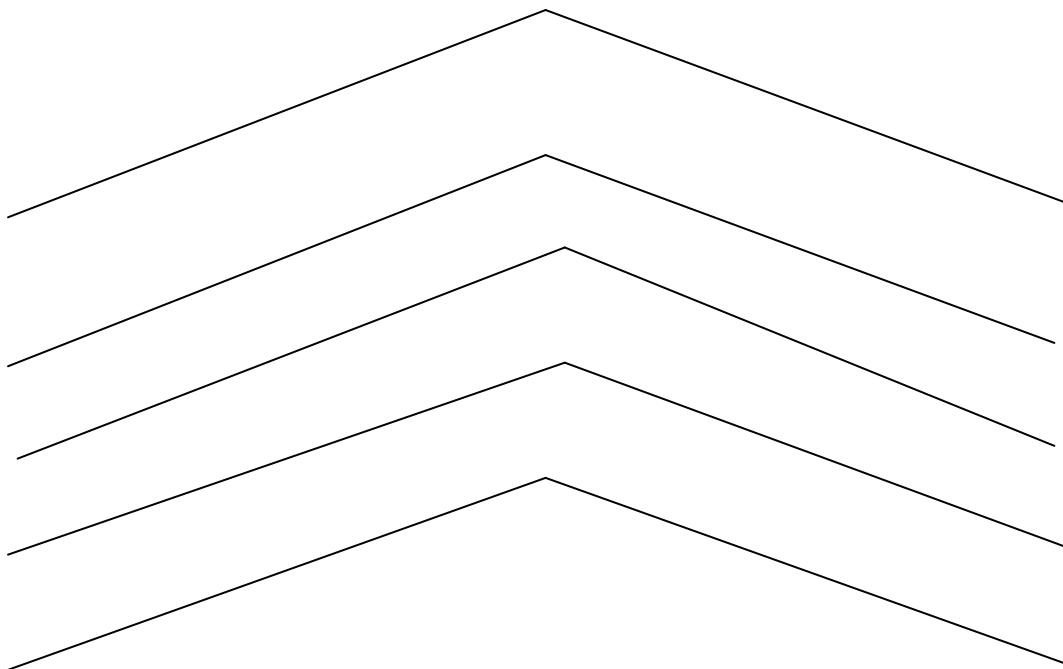


BANGLADESH TECHNICAL EDUCATION BOARD



4- YEAR

DIPLOMA-IN-TEXTILE ENGINEERING PROGRAM

**YARN MANUFACTURING TECHNOLOGY
FABRIC MANUFACTURING TECHNOLOGY
WET PROCESSING TECHNOLOGY
GARMENTS & CLOTHING TECHNOLOGY**

SYLLABUS

1ST & 2ND SEMESTER

BANGLADESH TECHNICAL EDUCATION BOARD

4- YEAR
DIPLOMA-IN- TEXTILE ENGINEERING PROGRAM

YARN MANUFACTURING TECHNOLOGY
FABRIC MANUFACTURING TECHNOLOGY
WET PROCESSING TECHNOLOGY
GARMENTS & CLOTHING TECHNOLOGY

SYLLABUS
FIRST AND SECOND SEMESTER

DIPLOMA-IN- TEXTILE ENGINEERING PROGRAM
YARN MANUFACTURING TECHNOLOGY
FABRIC MANUFACTURING TECHNOLOGY
WET PROCESSING TECHNOLOGY
CLOTHING TECHNOLOGY

FIRST SEMESTER

SL No	Subject Code	Name of the Subjects	Periods & Credits			Marks		
			T	P	C	Theory	Practical	Total
1.	TT 112	Textile Raw materials -I	2	0	2	100	-	100
2.	TT 123	General Textile Processes-I	2	3	3	100	50	150
3.	Drg 111	Engineering Drawing	0	3	1	-	50	50
4.	WP 111	Workshop Practice	0	3	1	-	50	50
5.	MS 114	Mathematics-I	3	3	4	150	50	200
6.	MS 124	Engineering Science-I (physics-I)	3	3	4	150	50	200
7.	MS 133	Engineering Science-II (Chemistry-I)	2	3	3	100	50	150
8.	SS 112	Bangla-I	2	0	2	100	-	100
9.	SS 122	English-I	2	0	2	100	-	100
10.	SS 132	Social Science-I (Civics)	2	0	2	100	-	100
11	PEd 111	Physical Education	0	1	1	-	50	50
Total			18	19	25	900	350	1250

SECOND SEMESTER

SL No	Subject Code	Name of the Subjects	Periods & Credits			Marks		
			T	P	C	Theory	Practical	Total
1.	TT 212	Textile Raw materials- II	2	0	2	100	-	100
2.	TT 224	General Textile Processes-II	2	6	4	100	100	200
3.	ET 213	Basic Electricity	2	3	3	100	50	150
4.	MS 214	Mathematics-II	3	3	4	150	50	200
5.	MS 223	Engineering Science-III (physics-II)	2	3	3	100	50	150
6.	MS 233	Engineering Science-IV (Chemistry-II)	2	3	3	100	50	150
7.	SS 212	Bangla-II	2	0	2	100	-	100
8.	SS 222	English-II	2	0	2	100	-	100
9.	SS 232	Social Science-II (Economics)	2	0	2	100	-	100
Total			19	18	25	950	300	1250

CONTENTS

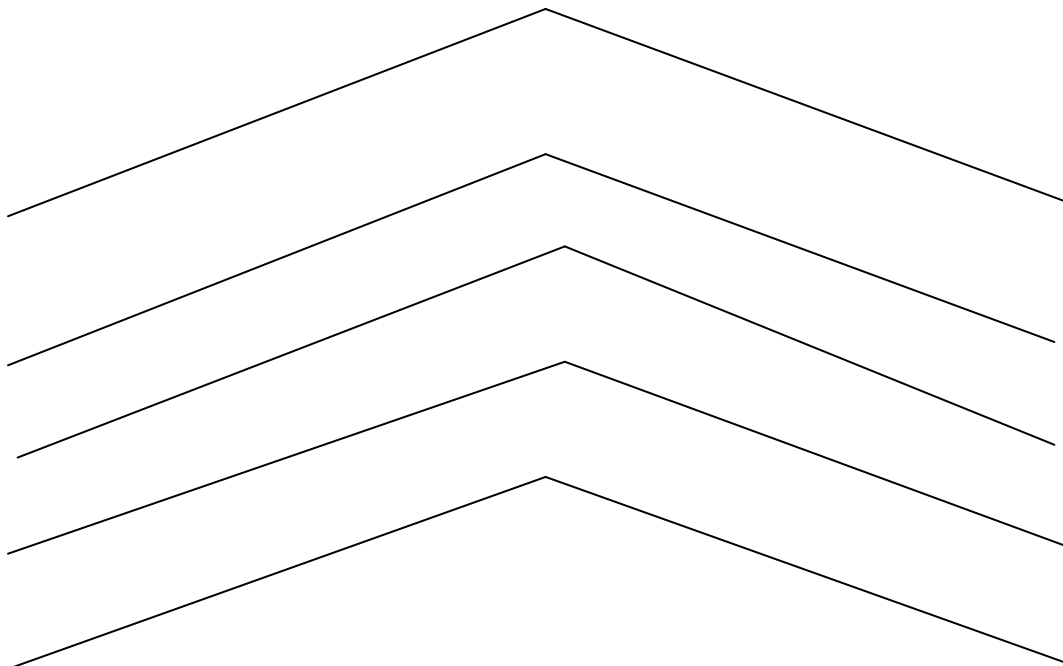
FIRST SEMESTER

				Page
1.	TT	112	Textile Raw materials -I	3
2.	TT	123	General Textile Processes-I	7
3.	Drg	111	Engineering Drawing	13
4.	WP	111	Workshop Practice	18
5.	MS	114	Mathematics-I	22
6.	MS	124	Engineering Science-I (physics-I)	31
7.	MS	133	Engineering Science-II (Chemistry-I)	41
8.	SS	112	Bangla-I	50
9.	SS	122	English-I	53
10.	SS	132	Social Science-I (Civics)	56
11.	PEd	111	Physical Education	61

SECOND SEMESTER

1.	TT	212	Textile Raw materials- II	65
2.	TT	224	General Textile Processes-II	69
3.	ET	213	Basic Electricity	73
4.	MS	214	Mathematics-II	85
5.	MS	223	Engineering Science-III (physics-II)	93
6.	MS	233	Engineering Science-IV (Chemistry-II)	103
7.	SS	212	Bangla-II	110
8.	SS	222	English-II	112
9.	SS	232	Social Science-II (Economics)	115

BANGLADESH TECHNICAL EDUCATION BOARD



4- YEAR

DIPLOMA-IN-TEXTILE ENGINEERING PROGRAM

**YARN MANUFACTURING TECHNOLOGY
FABRIC MANUFACTURING TECHNOLOGY
WET PROCESSING TECHNOLOGY
GARMENTS & CLOTHING TECHNOLOGY**

SYLLABUS

5TH & 6TH SEMESTER

BANGLADESH TECHNICAL EDUCATION BOARD

4- YEAR

DIPLOMA-IN- TEXTILE ENGINEERING PROGRAM

**YARN MANUFACTURING TECHNOLOGY
FABRIC MANUFACTURING TECHNOLOGY
WET PROCESSING TECHNOLOGY
GARMENTS & CLOTHING TECHNOLOGY**

SYLLABUS

FIFTH AND SIXTH SEMESTER

CONTENTS

FIFTH SEMESTER

1.	TT	513	Yarn Manufacturing- III
2.	TT	523	Fabric Manufacturing-III
3.	TT	533	Wet Processing-III
4.	TT	543	Clothing-III
5.	TT	553	Textile Testing & Quality Control-II
6.	TT	563	Fabric Structure & Analysis-II
7.	TT	572	General Maintenance and Utility Services
8.	CMT	511	Computer Application-II
9.	Mgm	512	Book keeping & Accounting

SIXTH SEMESTER

1.	TT	613	Yarn Manufacturing- IV
2.	TT	623	Fabric Manufacturing-IV
3.	TT	633	Wet Processing-IV
4.	TT	643	Clothing-IV
5.	TT	653	Textile Testing and Quality Control-III
6.	TT	662	Textile Calculation
7.	YMT/FMT/ WPT/GMT 613		Ad. Short Staple Spinning/Ad. Weaving/Ad. dyeing/Woven Garments and Finishing-I
8.	YMT/FMT/ WPT/GMT 621		Maintenance of Yarn Manufacturing/Fabric Manufacturing/Wet Processing/Garments Manufacturing Machinery-I
9.	Mgm	632	Industrial Management-1
10.	CMT	611	Computer Application-III

2DIPLOMA-IN-TEXTILE ENGINEERING PROGRAM
YARN MANUFACTURING TECHNOLOGY
FABRIC MANUFACTURING TECHNOLOGY
WET PROCESSING TECHNOLOGY
CLOTHING TECHNOLOGY

FIFTH SEMESTER

SL No	Subject Code	Name of the Subjects	Periods & Credits			Marks		
			T	P	C	Theory	Practical	Total
1.	TT 513	Yarn Manufacturing- III	2	3	3	100	50	150
2.	TT 523	Fabric Manufacturing-III	2	3	3	100	50	150
3.	TT 533	Wet Processing-III	2	3	3	100	50	150
4.	TT 543	Clothing-III	2	3	3	100	50	150
5.	TT 553	Textile Testing & Quality Control-II	2	3	3	100	50	150
6.	TT 563	Fabric Structure & Analysis-II	2	3	3	100	50	150
7.	TT 572	General Maintenance and Utility Services	1	3	2	50	50	100
8.	CMT 511	Computer Application-II	0	3	1	-	50	50
9.	Mgm 512	Book keeping & Accounting	2	0	2	100	-	100
Total			15	24	23	750	400	1150

SIXTH SEMESTER

SL No	Subject Code	Name of the Subjects	Periods & Credits			Marks		
			T	P	C	Theory	Practical	Total
1.	TT 613	Yarn Manufacturing- IV	2	3	3	100	50	150
2.	TT 623	Fabric Manufacturing-IV	2	3	3	100	50	150
3.	TT 633	Wet Processing-IV	2	3	3	100	50	150
4.	TT 643	Clothing-IV	2	3	3	100	50	150
5.	TT 653	Textile Testing and Quality Control-III	2	3	3	100	50	150
6.	TT 662	Textile Calculation	2	0	2	100	-	100
7.	YMT/FMT/WPT /GMT 613	Ad. Short Staple Spinning/Ad. Weaving/Ad. dyeing/Woven Garments and Finishing-I	2	3	3	100	50	150
8.	YMT/FMT/WPT/GMT 621	Maintenance of Yarn Manufacturing/Fabric Manufacturing/Wet Processing/Garments Manufacturing Machinery-I	0	3	1	-	50	50
9.	Mgm 632	Industrial Management-I	2	0	2	100	-	100
10.	CMT 611	Computer Application-III	0	3	1	-	50	50
Total			16	24	24	800	400	1200

AIMS

- To be able to understand the principles and practices of book keeping and accounting.
- To be able to understand the procedures of general accounting, financial accounting and their application.

SHORT DESCRIPTION

Concept of book keeping and accounting; Transactions; Entry systems; Accounts; Journal; Ledger; Cash book; Trial balance; Final accounts; Cost account & financial accounting; Depreciation; Public works accounts.

DETAIL DESCRIPTION**Theory:****1.0 Understand the concept of book keeping and accounting.**

- 1.1 Define book keeping and accountancy.
- 1.2 State the objectives of book keeping.
- 1.3 State the advantages of book keeping.
- 1.4 Differentiate between book keeping and accounting.
- 1.5 State the necessity and scope of book keeping and accounting.

2.0 Understand the transactions.

- 2.1 Define transactions and business transaction.
- 2.2 Explain the importance of transactions.
- 2.3 Describe the characteristic features of transactions.
- 2.4 Discuss the classification of transaction.

2.5 Identify the transaction from give statements stating reasons.

3.0 Understand the entry system.

- 3.1 State the aspects of transactions.
- 3.2 Define single entry system
- 3.3 State the objectives of single entry system.
- 3.4 Discuss the disadvantages of single entry system.
- 3.5 Define double entry system.
- 3.6 Discuss the principles double entry system.
- 3.7 Justify whether double entry system is an improvement over the single entry system.
- 3.8 Distinguish between Single entry and double entry system of book keeping.

4.0 Understand the classification of accounts.

- 4.1 Define accounts.
- 4.2 State the objectives of accounts.
- 4.3 Illustrate different type of accounts with example.
- 4.4 Define "Golden rules of Book keeping".
- 4.5 State the rules for "Debit " and "Credit " in each class of accounts.
- 4.6 Determine Debtor (Dr) and Creditor (Cr.) from given transactions applying golden rules.
- 4.7 Define accounting cycle.
- 4.8 State the different steps of accounting cycle.

5.0 Understand the Journal.

- 5.1 Define Journal.
- 5.2 State the object of journal.

- 5.3 State the functions of journal.
- 5.4 Mention the various names of journal.
- 5.5 Journalize from given transactions.

6.0 Understand the ledger.

- 6.1 Define ledger.
- 6.2 Interpret the form of ledger.
- 6.3 State the functions of ledger.
- 6.4 Distinguish between Journal and Ledger.
- 6.5 Prepare ledger from given transactions.
- 6.6 Explain ledger is called the king of all books of accounts.

7.0 Understand the cashbook.

- 7.1 Define cash book (single, double and triple column).
- 7.2 Explain cashbook as both Journal and Ledger.
- 7.3 Prepare double column cashbook from given transactions showing balances.
- 7.4 Prepare triple column cash book from given transaction and find out the balances.
- 7.5 Define petty cash book.
- 7.6 Prepare analytical and imp rest system of cash book.
- 7.7 Define discount.
- 7.8 Explain the different types of discount.

8.0 Understand the trial balance.

- 8.1 Define trial balance.
- 8.2 State the object of a trial balance.
- 8.3 State the methods of preparation of a trial balance.
- 8.4 Explain the limitations of preparation of a trial balance.
- 8.5 Prepare trial balance from given balance.

9.0 Understand the final accounts.

- 9.1 State the components of final account.
- 9.2 Distinguish between trial balance and balance sheet.
- 9.3 Identify the revenue expenditure and capital expenditure.
- 9.4 Select the items to be posted in the trading account, profit & loss account and the balance sheet.
- 9.5 State the adjustment to be made from the given information below or above the trial balance.
- 9.6 Prepare trading account, profit & loss account and balance sheet from the given trial balance & other information.

10.0 Understand the cost and financial accounting.

- 10.1 Define financial accounting.
- 10.2 State the objectives of financial accounting.
- 10.3 Define cost accounting.
- 10.4 Discuss the relationship between financial Accounting and cost accounting.
- 10.5 State the elements of direct cost and indirect cost.
- 10.6 Prepare cost sheet showing prime cost, factory cost, cost of production, total cost and selling price.
- 10.7 Explain the following terms:

- a. Fixed cost
- b. Variable cost
- c. Factory cost
- d. Overhead cost
- e. Process cost
- f. Direct cost
- g. Operating cost
- h. Standard cost**

11.0 Understand the depreciation

- 11.1 Define depreciation.
- 11.2 State the objects of depreciation.
- 11.3 Discuss the necessity of charging depreciation.
- 11.4 Describe the different methods of determining depreciation.
- 11.5 Explain the relative merits and demerits of different method of depreciation.

12.0 Understand the public works accounts.

- 12.1 State the important aspects of public works accounts.
- 12.2 Describe the main features of public works accounts.
- 12.3 Explain "Revenue and Grant".
- 12.4 Define Value Added Tax (VAT)
- 12.5 State the merits and demerits of VAT.
- 12.6 Define Bill and Voucher.

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.
- The use of network planning: PERT. CPM.
- Marketing and value- analysis.
- 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; Morale and morale building; Industrial dispute; Concept of leadership; Trade union; Labour laws and Industrial laws/ Act; Net work planning PERT & CPM; Concept of marketing; Value analysis.

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 Distinguish between line organization and line & staff organization.
- 4.6 Distinguish between line organization and functional organization.

- 4.7 Describe the feature advantages and disadvantages of each organization.
- 4.8 Define organizational chart.
- 4.9 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 motivation theory of Maslows and Harzbergs.
- 5.6 Differentiate between theory-X and theory-Y.
- 5.7 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 concepts of budget and budgetary control.

- 9.1 Define budget and budgetary control
- 9.2 Describe the different types of budget.
- 9.3 Discuss the objectives of budget.
- 9.4 Discuss the advantages and disadvantages of budgetary control.
- 9.5 State the pre-requisites for successful budgetary control.

10.0 Understand the concept of Inventory Control.

- 10.1 Explain the meaning of “Inventory” and “Inventory control”.
- 10.2 State the purpose, necessity and importance of inventory control.
- 10.3 Discuss different aspects of inventory control.
- 10.4 Explain the procedures of inventory control.
- 10.5 Describe the following terms.
 - Bin-card or Bin Tag
 - Purchase requisition
 - Stores Requisition/Indent
 - Material Transfer Note
 - FIFO
 - LIFO

11.0 Apply the concept of Economic Lot size.

- 11.1 Define economic lot size.
- 11.2 Explain the effects of oversupply and undersupply.
- 11.3 Determine the economic lot size.
- 11.4 Calculate the economic lot size.

T T 5 7 2

**GENERAL MAINTENANCE
AND UTILITY SERVICES**

T	P	C
1	3	2

AIMS

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

- ◆ Basic concept of maintenance
- ◆ System of maintenance
- ◆ Lubricants and lubrication
- ◆ Power transmission
- ◆ Tools
- ◆ Procedure of maintenance
- ◆ Bearing , Bush and Shaft.
- ◆ Nomenclature of machine parts
- ◆ Repairing and overhauling
- ◆ Pump; Boiler; Generator; Air-conditioning
- ◆ Humidification and Lighting
- ◆ Safety maintenance
- ◆ Maintenance Personnel
- ◆ Components of scheduling.

SHORT DESCRIPTION

Basic concept of maintenance; System of maintenance; Lubricants and lubrication; Power transmission; Tools; Procedure of maintenance; Bearing and Bush; Shaft. Nomenclature of machine parts; Repairing and overhauling; Pump; Boiler; Generator; Air-conditioning; Humidification; Lighting; Safety maintenance; Maintenance Personnel; Components of scheduling.

DETAIL DESCRIPTION

Theory :

1.0 Understand the Basic Concept of Maintenance.

- 1.1 Define maintenance.
- 1.2 Mention the Purpose of maintenance.
- 1.3 Describe the importance of maintenance.
- 1.4 Discuss the types of maintenance.

2.0 Understand the System of Maintenance.

- 2.1 Discuss the importance of system maintenance.
- 2.2 Mention the pattern / style of maintenance.
- 2.3 Discuss the step of maintenance.
- 2.4 Describe the records required for effective maintenance.

3.0 Understand the Procedure of Maintenance.

- 3.1 Mention the systematic procedure of maintenance.

- 3.2 Discuss the importance of systematic maintenance.
- 3.3 Explain cleaning procedure.
- 3.4 Define fitting and setting.
- 3.5 Differentiate between fitting and setting.
- 3.6 Describe fitting and setting procedure.

4.0 Understand the Repairing and Overhauling.

- 4.1 Explain the repairing.
- 4.2 State the necessity of repairing.
- 4.3 Discuss disadvantages of repairing.
- 4.4 Explain the overhauling.
- 4.5 Differentiate between repairing and overhauling.

5.0 Understand the Power Transmission.

- 5.1 Mention the methods of power transmission.
- 5.2 List the name of parts related to power transmission.
- 5.3 Discuss the different types of pulley used for power transmission.
- 5.4 Mention the different types of belt used for power transmission.
- 5.5 Mention different types gear and their uses.

6.0 Understand the Tools and Equipments of Maintenance.

- 6.1 Define tools and equipments.
- 6.2 State the role of tools and equipments in maintenance.
- 6.3 Mention the list of general tools used in maintenance.
- 6.4 Mention the classification of tools.

- 6.5 State the operational procedure of maintenance tools and equipments.

7.0 Understand the Bearing, Bush and Shaft etc.

- 7.1 Mention the functions of bearing.
- 7.2 Mention the types of bearing depending their structure.
- 7.3 Mention the function of bush.
- 7.4 Differentiate between bearings and bush.
- 7.5 Describe their utility area.
- 7.6 Differentiate between shaft and rod.
- 7.7 List the different type of shaft.
- 7.8 Define brackets and collar.
- 7.9 State the importance of bracket and collar.

8.0 Understand the Lubrication and Lubricant.

- 8.1 Define lubrication and lubricant.
- 8.2 Mention the importance of lubrication.
- 8.3 Discuss the types of lubricants.
- 8.4 Discuss the purpose lubrication.
- 8.5 Mention the characteristics of lubricants.
- 8.6 List the different lubricants.
- 8.7 Describe the factors considered for lubricants selection.
- 8.8 Describe the lubrication procedure.

9.0 Understand the Nomenclature of Machine Parts.

- 9.1 Define nomenclature.
- 9.2 Discuss the importance of nomenclature.
- 9.3 Describe the method / basis of nomenclature.

10.0 Understand the Pump.

- 10.1 Define pump.
- 10.2 Discuss the necessity of pump.
- 10.3 Mention the main parts of pump.
- 10.4 Describe the working principle of pump.

11.0 Understand the Boiler.

- 11.1 Define boiler.
- 11.2 Describe the types of boiler.
- 11.3 Describe the working principle of boiler.
- 11.4 Explain boiler Blow-down.
- 11.5 Define boiler capacity.
- 11.6 Discuss boiler scaling.
- 11.7 Mention the utility of boiler.
- 11.8 Explain boiler efficiency.
- 11.9 State the operational procedure of boiler operation.

12.0 Understand the Generator.

- 12.1 Define generator.
- 12.2 Discuss the types of generator.

- 12.3 Explain generator capacity.
- 12.4 Describe the working principle of generator.
- 12.5 Mention the causes of generator trips.

13.0 Understand the Air-conditioning.

- 13.1 Define air-conditioning.
- 13.2 Mention the types of air-conditioning system.
- 13.3 Mention the different components of air-conditioning plant.
- 13.4 Describe the working principle of central air-conditioning system.
- 13.5 Explain refrigeration units.

14.0 Understand the Humidification.

- 14.1 Define humidification.
- 14.2 Mention the importance of humidification.
- 14.3 Mention the difference between humidification and de-humidification.
- 14.4 Describe the working principle of humidification.
- 14.5 Explain the humidifying efficiency.

15.0 Understand the Lighting.

- 15.1 Explain the importance of lighting.
- 15.2 Discuss the types of lighting system.
- 15.3 Describe the factors considered for good lighting.
- 15.4 Explain lighting measurement.

16.0 Understand the Safety in maintenance.

- 16.1 Explain safety measures in maintenance.
- 16.2 Mention the importance of safety measures.
- 16.3 State the nature of safety.
- 16.4 Describe the safety regulations.
- 16.5 Discuss different safety devices.

17.0 Understand the maintenance Personnel.

- 17.1 State the basic qualities of maintenance personnel.
- 17.2 Mention the duties and responsibility of maintenance personnel

18.0 Understand the components of scheduling.

- 18.1 State the work plan.
- 18.2 Mention the weekly order sheet.
- 18.3 State the rescheduling.
- 18.4 Describe the maintenance ledger.
- 18.5 Mention the machine card.
- 18.6 State the job complete report.
- 18.7 Mention the breakdown report.
- 18.8 State the spares and lubricants consumption record.
- 18.9 State the lubrication control charts.
- 18.10 State the mechanical down time report.

Practical:

1. Identify general tools of maintenance.
2. Select lubricants for specific lubrication.
3. Lubricate bearing with grease.
4. Clean a particular machine.
5. Dismantle machine parts.
6. Assemble machine parts.
7. Identify the main parts of boiler.
8. Operate the boiler.
9. Show the main parts of pump.
10. Operate the pump.
11. Sketch and show the main parts of generator.
12. Practice operation of generator.
13. Sketch and show the main component of air-condition system.

Reference Books :

1. Maintenance management in spinning ----- SITRA
2. Textile mill technical data ----- R. Jagannathan.
3. $\text{†iw d«Rv†ikb †Kvì †÷v†iR G¨vÛ Gqvi KwÛkwbs --- evKvwk†ev|}$
4. $\text{†ewmK lqvK© kc cÖ¨vKwUm - 2 --- evKvwk†ev|}$
5. Products Guide -- Conoco.

T T 563	FABRIC STRUCTURE AND CLOTH ANALYSIS-11	T	P	C
		2	2	3

AIMS

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

- fabrics design
- fabrics construction
- fabrics drafting & lifting plan
- analysis of cloth

SHORT DESCRIPTION

Basic Concepts of textile design and artistic design; Drafting and lifting. Weaving structure; Satin and sateen weave; Ornamentation of fabrics design; Figuring with extra threads; Double cloth Backed cloth; Leno weave; Velvet; Terry; and Analysis of cloth.

DETAIL DESCRIPTION

Theory:

1.0 Understand the Satin and Sateen

- 1.1 Explain the meaning of satin & sateen.
- 1.2 State the relationship between satin and sateen.

1.3 Discuss the classification of satin.

1.4 Mention the rates of satin.

1.5 Draw a design of satin weave (warp weft satin) with drafting and lifting plan.

1.6 Discuss the uses of satin weave.

2.0 Understand the Extra Warp Design

2.1 Explain the term of extra warp design.

2.2 Describe the feature of extra warp design.

2.3 Draw the extra warp design.

2.4 Mention the uses of extra warp.

3.0 Understand the Extra Weft Design

3.1 Explain the term of extra weft design.

3.2 Describe the feature of extra weft design.

3.3 Draw the extra weft design.

3.4 Compare between the extra warp and extra weft design.

3.5 Determines the extra weft from the fabric.

18.6 Mention the uses of extra weft design.

4.0 Understand Double Cloth

4.1 Define the term of double cloth.

4.2 Classify the double cloth.

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 Draw alternate single ply and double ply construction.
- 4.8 Compare the different double cloth.
- 4.9 Mention the uses of double cloth.

5.0 Understand the Wadded Double cloth.

- 20.1 Define wadded double cloth.
- 20.2 State the purpose of wadded double cloth.
- 20.3 Discuss the feature of wadded double cloth.
- 20.4 Draw a design of warp and weft wadded double cloth.
- 20.5 State the quality of wadded double cloth.
- 20.6 Mention the uses of wadded double cloth.

6.0 Understand the Backed Cloth

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

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.

22.5 Mention the uses of crepe weave.

8.0 Understand Huckaback Weave

8.1 Define huckaback weave.

8.2 Discuss the feature of huckaback weave.

8.3 Draw the huckaback design.

23.4 Mention the uses of huckaback design.

9.0 Understand the Mock leno Weave

9.1 Define mock leno weave.

9.2 Discuss the feature of mock leno weave.

9.3 Draw the design of mock leno weave.

24.4 Mention the uses of mock leno weave.

10.0 Understand the honeycomb weave

10.1 Define honeycomb and brighten honeycomb weave.

10.2 Classify the honeycomb weave.

10.3 Discuss the feature of honeycomb weave.

10.4 Draw the honeycomb and brighten honeycomb design with drafting and lifting plan.

10.5 Distinguish between honeycomb & brighten honeycomb weave.

25.6 Mention the uses of honeycomb and brighten honeycomb weave.

11.0 Understand the Cord & bed ford Cord

- 11.1 Explain the meaning of cord & bed ford cord.
- 11.2 State the relation ship between cord & bed ford cord.
- 11.3 Discuss the feature of bed ford cord.
- 11.4 Classify the bed ford cord.
- 11.5 Draw the cord and bed ford cord design with drafting & lifting plan.
- 11.6 Mention the uses of bed ford cord.

12.0 Understand Sponge Weave

- 12.1 Define the term sponge weave.
- 12.2 State the rules of longest float sponge repeat.
- 12.3 Draw the sponge weave design with drafting lifting plan.
- 27.4 Mention the uses of sponge weave.

13.0 Understand the Velvet Weave Design

- 13.1 Define the term of velvet weave.
- 13.2 Discuss the feature of velvet design.
- 13.3 Classify the velvet design.
- 13.4 Draw the velvet according to wire Principle.
- 13.5 Draw the velvet according to face to face principle.
- 28.6 Mention the uses of velvet weave.

14.0 Understand the Terry Weave

- 14.1 Explain the meaning of terry weave.
- 14.2 Discuss the feature of terry weave.

- 14.3 Classify the rules of terry weave.
- 14.4 State the rules of terry weave.
- 14.5 Draw 3-picks terry weave.
- 29.6 Mention the uses of terry weave.

15.0 Understand the Standard Commercial fabrics

- 15.1 Explain the standard commercial fabrics.
- 15.2 Discuss the fabric specification.
- 15.3 Describe the ideal commercial fabrics with specification.
- 15.4 Mention the name of commercial fabrics.

16.0 Understand the Cloth Analysis

- 16.1 Explain the term of cloth analysis.
- 31.2 Discuss the feature of cloth analysis.
- 31.3 Discuss the necessity of cloth analysis.
- 31.4 Mention the factors of cloth analysis.
- 16.5 Determines the face and backside of the cloth.
- 16.6 Determines the rules of warp & weft from the fabric.
- 16.7 Determines the repeats from the fabric.
- 16.8 Determines the design from the fabric.
- 31.9 Calculate the yarns count from the fabric.

PRACTICAL

1. Construct the satin and sateen design with drafting and lifting plan.
2. Construct the extra warp and extra weft in a design.
3. Analyzed the Supply Sample cloth.
4. Create design by analyzed the same supplied cloth .
5. Determined the counts of the supplied sample cloths yarns.
6. Identify the face and back side of the sample cloth.
7. Identify the warp way and weft way from the supplied sample cloth.

Aims

1. To develop basic knowledge of calculations of yarn manufacture.
2. To acquaint with the knowledge of calculation and production of fabric manufacture.
3. To gather knowledge of dyed and finished fabric production cost calculation.
4. To enable the student garments production cost calculation

Short description.

Basic concept of calculation of yarn manufacture, Fabric manufacture, wet processing & garments manufacture, costing of yarn, fabric, finished fabric & end products.

DETAIL DESCRIPTION.**YARN MANUFACTURE****1.0 Understand the calculation of blow room.**

- 1.1 Calculation the draft and lap length .
- 1.2 Calculate the cleaning efficiency and production
- 1.1 Solve the problems of blow room.

2. 0 Understand the different calculation of carding machine.

- 2.1 Calculate the draft & draft constant.
- 2.2 Calculate the lap and sliver count
- 2.3 Calculate production constant and production
- 1.1 Solve the problems of carding machine.

3.0 Understand the drawing calculations and problems.

- 3.1 Calculate the draft & draft constant
- 3.2 Calculate the production rate.
- 3.3 Solve the problems of drawing frame.

4.0 Understand the Combing calculations.

- 4.1 Calculate the speed, draft & draft constant of comber.
- 4.2 Calculate the production & Sliver count of comber
- 4.3 Solve the problems of comber.

5.0 Understand the different calculation of simplex.

- 5.1 Calculate the draft and draft constant of simplex.
- 5.2 Calculate the twist, twist constant ,roving count & production of simplex.
- 5.3 Solve the problems of simplex.

6.0 Understand the calculation of ring frame.

- 6.1 Calculate draft ,draft constant , twist & twist constant of ring frame.
- 6.2 Mention the twist factor of different count of yarn.
- 6.3 Calculate production of ring frame.
- 6.3 Solve the problems of ring frame.

7.0 Understand the calculation of emulsion, softener and spreader.

- 7.1 Calculate the draft and draft constant of spreader.
- 7.2 Calculate the emulsion percentage for different batch of jute spinning.
- 7.3 Solve the problems of emulsion and spreader.

8.0 Understand the breaker card and finisher card calculation

- 8.1 Calculate the draft and draft constant of jute card.
- 8.2 Calculate the jute sliver count.
- 8.3 Calculate the production and cleaning efficiency of carding machine.
- 8.4 Solve the problem of card machine.

9.0 Understand the calculation of drawing and spinning frame .

- 9.1 Calculate the draft and draft constant.
- 9.2 Calculate the twist and twist constant of spinning frame.
- 9.3 Calculate the production & sliver count.
- 9.4 Solve the problems.

10.0 Understand the different calculation of warping winding & sizing.

- 10.1 Calculate the production of winding, warping & sizing
- 10.2 Calculate the production of spool and cop winding.
- 10.3 Calculate the number of ends for specified fabrics.
- 10.4 Solve the problems.
- 10.5 Calculate the size pick-up percentage.
- 10.6 Calculate the different amount of size ingredient.

11 .0 Understand the heald count and reed count.

- 11.1 Calculate the reed count and heald count
- 11.2 Calculate the drop wire & heald wire for different types of fabric.

12.0 Understand the loom calculation and production.

- 12.1 Select the heald and reed for different types of fabric production.
- 12.2 Calculate loom constant and picks per inch. .
- 12.3 Calculate production.
- 12.4 Calculate loom efficiency.
- 12.5 Solve the problems.

13.0 Understand the cloth calculation.

- 13.1 Mention the warp & weft requirement for different fabric.
- 13.2 Calculate the weight of cloth in ozs/ sq.yd & gms / sq. m
- 13.3 Solve the Problems.

14.0 Understand the different yarn Numbering system.

- 14.1 Calculate the yarn number in direct system.
- 14.2 Calculate the yarn number in indirect system.
- 14.3 Convert the yarn number from one system to another.
- 14.4 Solve the problems.

15.0 Understand the costing.

- 15.1 Define cost.
- 15.2 Classify costing.
- 15.3 Analyzed the elements of costing in yarn manufacture, fabric manufacture. Wet processing & garments manufacture.
- 15.4 Calculate the cost of yarn. Fabric, finished fabric & and products.

16.0 Understand the cloth requirement for the garments.

- 16.1 State the term fabric consumption.
- 16.2 Describe the method to find the fabric consumption.
- 16.3 Find the requirement of fabric for shirt & trouser.
- 16.4 Calculation of fashion frequencies from the dimensions of a garment parts.
- 16.5 Solve the problems.

17.0 Understand the sewing thread consumption.

- 17.1 Understand the sewing thread consumption.
- 17.2 Mention the factors of thread consumption of the garments.
- 17.3 Describe the methods to find the thread consumption.
- 17.4 Prepare a costing sheet of sewing thread for producing shirt & trouser.

**YM T 621 MAINTENANCE OF YARN MANUFACTURING
MACHINERY – I**

AIMS:

**T P C
0 3 1**

1. To enable the students to operate the individual machines of spinning.
2. To enable the students to make the maintenance schedule of spinning Machinery.
3. To enable the students to set and adjust the spinning machinery as per requirement.
4. To enable the students to dismantle and resetting the spinning machinery.
5. To enable the students to change and set all the parts of spinning machinery as per requirement.
6. To enable the students to replace the broken or worn-out parts.
7. To make the students familiar with oiling, greasing, cleaning of spinning machinery.

SHORT DESCRIPTION :

Setting; Adjusting; Lubricating; Cleaning; Making maintenance schedule; Mounting; Grinding; Raft setting; Roller adjustment; Roller treatment; Stop motion setting of cotton and jute spinning machinery (Blow – room to Draw frame).

DETAIL DESCRIPTION:

PRACTICAL:

A. Perform the setting, adjustment, lubricating cleaning and , making the schedule of maintenance of the following cotton spinning machinery:

1. Hopper feeder.
2. Bale opener.
3. Bale plucker.
4. Metal separator / Heavy particle separator.
5. Step cleaner.
6. Porcupine opener.
7. Twine opener.
8. Fine opener.
9. Contamination separator.
10. Scutcher / Chute feed system.
11. Carding machine.
12. Drawing frame.

B. Perform the following assignments:

1. Mount the wire of taker-in, cylinder, doffer and flat of a carding machine.
2. Grind the wire of taker-in, cylinder, doffer, flat of a carding machine
3. Set the required draft in a draw frame.
4. Change and set the gauze of a draw frame.
5. Set and adjust the stop motion of a draw frame

6. Perform the roller treatment of a draw frame.

C. Perform the setting, adjusting, lubricating cleaning and making the schedule of maintenance of the following jute spinning machinery:

1. Batch mixer.
2. Spreader machine.
3. Softener machine.
4. Breaker card.
5. Finisher card.

D. Perform the following assignments:

1. Set the faller-pin of spreader machine
2. Stave the pin of breaker card and finisher card.
3. Adjust the roll-forming arrangement of breaker card and finisher card.

FMT 621

**MAINTENANCE OF
FABRIC MANUFACTURING MACHINERY - I T P C
0 3 1**

AIMS

1. To enable the students to operate the individual machines of weaving.
2. To enable the students to make the maintenance schedule of weaving machinery.
3. To enable the students to set and adjust the weaving machinery as per requirement.
4. To enable the students to dismantle and re-assemble the weaving machinery
5. To enable the students the change and set all the parts of weaving machinery as per requirement.
6. To enable the students to repair and replace the broken or worn out parts.
7. To make the students familiar with oiling, greasing, cleaning to weaving machinery.

SHORT DESCRIPTION

Setting; Adjusting,; Lubricating; Cleaning; Making; Maintenance; Schedule; etc. of fabric manufacturing machinery.

DETAIL DESCRIPTION

PRACTICAL:

Practice the following assignments in cone/cheese/ pirn winding machines, Sectional/direct warping machines, sizing machine, conventional weaving machine, Repair/ Air-jet/ water-jet/ Projectile weaving and fabric inspection machine

1. Draw the driving diagram.
2. Become familiar with all the parts of fabric manufacturing machines
3. Identify setting and change places and observe the effect on their changing.
4. Dismantle the important components parts in steps and reassemble the parts as per requirement to run the machine efficiently.
5. Undo the possibility broken/ worn parts and replace them with new/repared parts.
6. Grease/ Oil the moving of rotating parts.
7. Clean the machine during operation and also in stopped condition as per requirement.
8. Check/ Observe the setting places during operation of the machine and do the correct setting whenever and when necessary.

WPT 621

**MAINTENANCE
WET PROCESSING MACHINERY**

TPC

021

AIMS

1. To enable the students to operate the individual machines of wet processing.
2. To enable the students to make the maintenance schedule of wet processing machines.
3. To enable the students to set and adjust the wet processing machinery as per requirement
4. To enable the students to dismantle and re-assemble the wet processing machinery
5. To enable the students the change and set all the parts of wet processing machinery as per requirement
6. To enable the students to repair and replace the broken or worn out parts.
7. To make the students familiar with oiling, greasing, cleaning to wet processing machinery

SHORT DESCRIPTION

Setting; adjusting; lubricating; cleaning; making; maintenance; schedule, etc. of wet processing machinery.

DETAIL DESCRIPTION

PRACTICAL:

Draw the driving diagram, become familiar with all the parts, Identify setting and change places and observe the effects on their changing , dismantle, reassemble, Undo possible broken/worn parts, greasing, oil, cleaning and check the setting of the following wet processing machinery

1. Singeing machine
2. Jigger machine
3. Keir boiler
4. J-box
5. Winch dyeing machine
6. Package dyeing machines
7. Jet dyeing machine
8. Hydro-extractor

AIMS

1. To enable the students to operate the individual machines of garments.
2. To enable the students to make the maintenance schedule of garments machinery.
3. To enable the students to dismantle and re-setting the sewing machine.
4. To enable the students to repair and replace the broken or worn-out parts.
5. To make the students familiar with oiling, greasing, cleaning of garments machinery.

SHORT DESCRIPTION

Practical knowledge of different cutting machine(Round knife, Straight knife, Band knife and drill machine); Cleaning and maintenance knowledge of different sewing machine(Lock stitch; Chain stitch; Over lock; Zig-zag stitching, Flat lock , Button holing & Button attaching sewing machine etc.)

DETAIL DESCRIPTION

PRACTICAL:

- A. Perform the cleaning, oiling, lubricating, adjustment of the following garments cutting machinery.
 - 1. Round knife-cutting machine.
 - 2. Straight knife-cutting machine.
 - 3. Band knife-cutting machine.
 - 4. Drill machine.

- B. Perform the setting, cleaning, oiling and greasing, making the maintenance schedule of the following garments sewing machinery.
 - 1. Lock stitch machine.
 - 2. Chain stitch machine.
 - 3. Over-lock machine.
 - 4. Flat lock machine.
 - 5. Blind stitch machine.
 - 6. Zig-zag stitching machine.
 - 7. Button holing machine.
 - 8. Button attaching machine.

- C. Perform the following assignment.
 - 1. Dismantle and assemble the hand-operated sewing machine.
 - 2. Dismantle and assemble the power-operated sewing machine.