MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION, MUMBAI

TEACHING AND EXAMINATION SCHEME

COURSE NAME : DIPLOMA IN TEXTILE MANUFACTURES

COURSE CODE : TX

DURATION OF COURSE : 6 SEMESTER **WITH EFFECT FROM 2012-13**

SEMESTER : SIXTH **DURATION : 16 WEEKS**

PATTERN : FULL TIME-SEMESTER **SCHEME : G**

SR. NO.	SUBJECT TITLE	Abbreviation	SUB CODE	TEACHING SCHEME			EXAMINATION SCHEME									SW (17600)
							PAPER HRS.	TH (1)		PR (4)		OR (8)		TW (9)		
				TH	TU	PR		Max	Min	Max	Min	Max	Min	Max	Min	
1	Management $	MAN	17601	3	--	--	1&½	50#*	20	--	--	--	--	--	--	**50**
2	Spinning Process Control	SPC	17690	4	--	2	3	100	40	--	--	--	--	25@	10	
3	Weaving Process Control	WPC	17691	4	--	2	3	100	40	50@	20	--	--	25@	10	
4	Textile Mill Planning	TMP	17692	3	2	--	3	100	40	--	--	--	--	25@	10	
5	Yarn Manufacturing - V	YMA	17693	2	1	--	2	50	20	--	--	--	--	25@	10	
6	Technical Textiles	TTE	17650	2	1	--	2	50	20	--	--	--	--	25@	10	
7	Behavioral Science $	BSC	17075	1	--	2	--	--	--	--	--	25#	10	25@	10	
8	Project & Seminar	PAS	17815	--	--	4	--	--	--	--	--	50#	20	50@	20	
			TOTAL	**19**	**04**	**10**	**--**	**450**	**--**	**50**	**--**	**75**	**--**	**200**	**--**	**50**

Student Contact Hours Per Week:**33 Hrs.**

THEORY AND PRACTICAL PERIODS OF 60 MINUTES EACH.

Total Marks: 825

@-Internal Assessment, #-External Assessment, #*-Online Examination, No Theory Examination, $- Common to All Conventional Diploma, β - Common to TC

Abbreviations: TH-Theory, TU- Tutorial, PR-Practical, OR-Oral, TW- Termwork, SW- Sessional Work.

- Conduct two class tests each of 25 marks for each theory subject. Sum of the total test marks of all subject are to be converted out of 100 marks as sessional work (SW).
- Progressive evaluation is to be done by subject teacher as per the prevailing curriculum implementation and assessment norms.
- Code number for TH, PR, OR and TW are to be given as suffix 1, 4, 8, 9 respectively to the subject code.

Course Name : All Branches of Diploma in Engineering / Technology

Course Code : EJ/EN/ET/EX/EV/IC/IE/IS/MU/DE/ME/PG/PT/AE/CE/CS/CR/CO/CM/IF/ CW/EE/EP/EU/CH/CT/PS/CD/ED/EI/CV/FE/IU/MH/MI/TX/TC/FG

Semester : Sixth for EJ/EN/ET/EX/EV/IC/IE/IS/MU/DE/ME/PG/PT/AE/CE/CS/CR/ CO/CM/IF/CW/EE/EP/EU/CH/CT/PS/TX/TC/FG and Seventh for MH/MI/CD/ED/EI/ CV/FE/IU

Subject Title : Management

Subject Code : 17601

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
03	--	--	1&½	50#*	--	--	--	50100

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work (SW).**

Rationale:

Management concepts are universal and it is a multidisciplinary subject. They are equally applicable to different types industries like Manufacturing, Service and Trade as well as different kind of business activities like industry, army, school, hospital, retail shops etc. Also, at the end of diploma course polytechnic students are expected to enter in to the Industrial Environment. This environment is altogether different and new to the students. A proper introduction and understanding of management fundamentals is therefore essential for all these students.

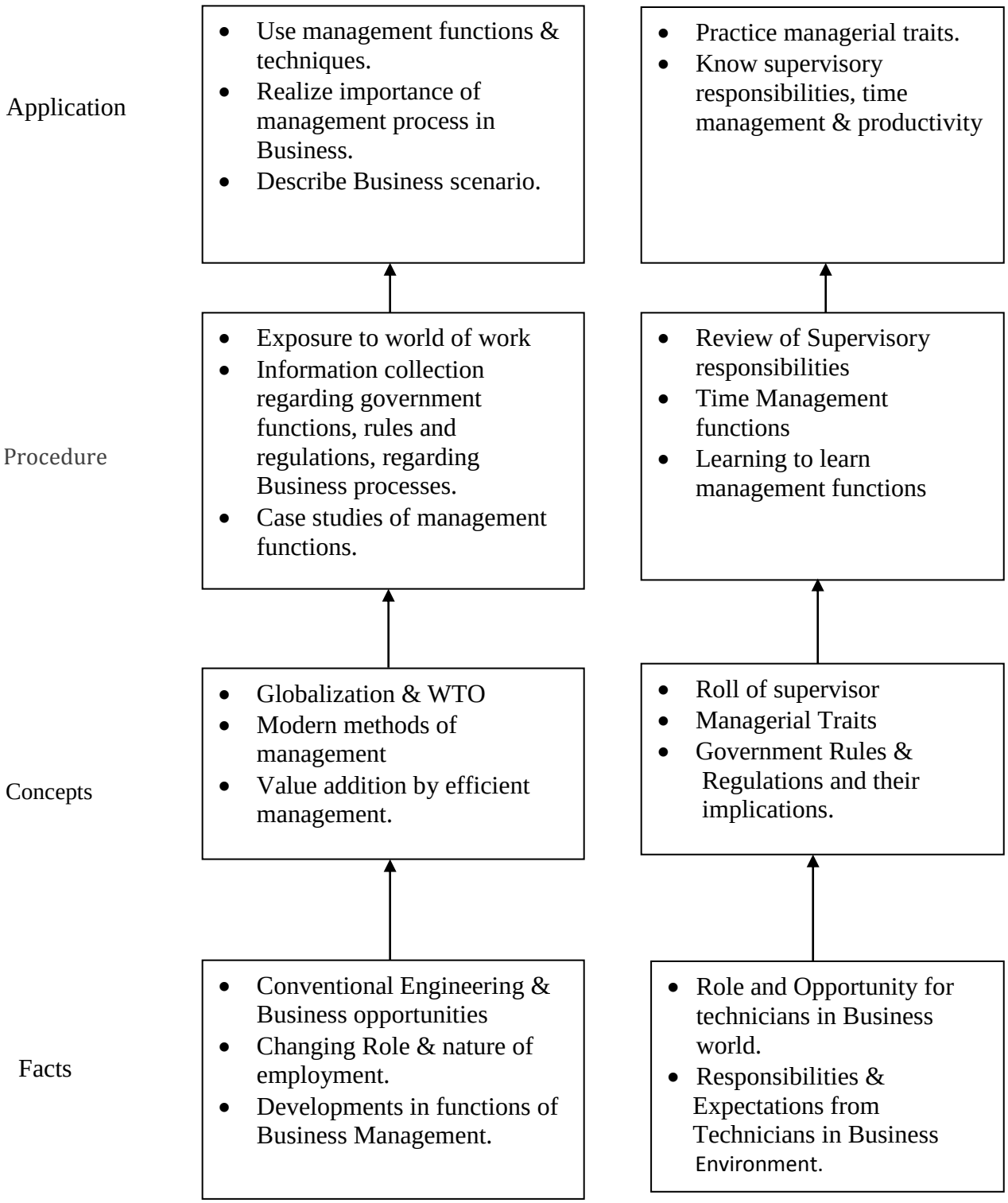
Contents of the this subject will enable the students to address various issues related to human resource, finance, materials, legislations etc. by use of basic principles of management. This will ensure that students will play their role effectively to enhance the quality of business output in total.

Objective:

The students will able to:

1. Get familiarized with environment related to business processes.
2. Know the management aspects of the organisations.
3. Understand Role & Responsibilities of a Diploma engineer.
4. Understand importance of quality improvement techniques.
5. Appreciate need and importance of safety in industries.
6. Understand process of Industrial finance and its management.
7. Know the latest trends in industrial management.

Learning Structure:



Contents: Theory

Topic and contents	Hours	Marks
Topic 1: Overview of Business **Specific Objectives** ➢ State various business types and sectors ➢ Describe importance of globalisation 1.1. Types of Business • Service • Manufacturing • Trade 1.2. Industrial sectors Introduction to • Engineering industry • Process industry • Textile industry • Chemical industry • Agro industry • IT industry • Banking, Insurance, Retail, Hospitality, Health Care 1.3 Globalization • Introduction • Advantages & disadvantages with respect to India	02	04
Topic 2: Management Process **Specific Objectives** ➢ State various management principles ➢ Describe different management functions 2.1 What is Management? • Evolution • Various definitions of management • Concept of management • Levels of management • Administration & management • Scientific management by F.W.Taylor 2.2 Principles of Management (14 principles of Henry Fayol) 2.3 Functions of Management • Planning • Organizing • Directing • Controlling • Decision Making	08	08
Topic 3: Organisational Management **Specific Objectives** ➢ Compare different forms of organisation , ownership for a specific business ➢ Describe types of departmentation 3.1 Organization: • Definition	08	08

• Steps in organization 3.2 Types of organization • Line • Line & staff • Functional • Project 3.3 Departmentation • By product • By process • By function 3.4 Principles of Organisation • Authority & Responsibility • Span of Control • Effective Delegation • Balance, stability and flexibility • Communication 3.5 Forms of ownership • Proprietorship • Partnership • Joint stock • Co-operative Society • Govt. Sector		
Topic 4: Industrial Safety and Legislative Acts **Specific Objectives** ➢ Describe types of accidents & safety measures ➢ State provisions of industrial acts. 4.1 Safety Management • Causes of accidents • Types of Industrial Accidents • Preventive measures • Safety procedures 4.2 Industrial Legislation - Necessity of Acts Important Definitions & Main Provisions of following acts: • Indian Factory Act • Workman Compensation Act • Minimum Wages Act	08	08
Topic 5: Financial Management (No Numerical) **Specific Objectives** ➢ Explain functions of financial management ➢ State the sources of finance & types of budgets. ➢ Describe concepts of direct & indirect taxes. 5.1 Financial Management- Objectives & Functions 5.2 Capital Generation & Management • Types of Capitals - Fixed & Working • Sources of raising Capital - Features of Short term, Medium Term & Long Term Sources	08	08

5.3 Budgets and accounts • Types of Budgets • Fixed & Variable Budget - Concept • Production Budget - Sample format • Labour Budget - Sample format • Profit & Loss Account & Balance Sheet - Meaning, sample format, meaning of different terms involved. 5.4 Meaning & Examples of – • Excise Tax • Service Tax • Income Tax • Value Added Tax • Custom Duty		
Topic 6: Materials Management (No Numerical) **Specific Objectives** ➢ Describe concept of inventory, ABC analysis & EOQ. ➢ Describe purchase functions & procedures ➢ State features of ERP & MRP 6.1 Inventory Concept, its classification, functions of inventory 6.2 ABC Analysis - Necessity & Steps 6.3 Economic Order Quantity Concept, graphical representation, determination of EOQ 6.4 Standard steps in Purchasing 6.5 Modern Techniques of Material Management • Material Resource Planning (MRP) - Functions of MRP, Input to MRP, Benefits of MRP • Enterprise Resource Planning (ERP) - Concept, list of modules, advantages & disadvantages of ERP	08	08
Topic 7: Quality Management **Specific Objectives** ➢ State Principles of Quality Management ➢ Describe Modern Technique & Systems of Quality Management 7.1 Meaning of Quality Quality Management System - Activities, Benefits Quality Control - Objectives, Functions, Advantages Quality Circle - Concept, Characteristics & Objectives Quality Assurance - Concept, Quality Assurance System 7.2 Meaning of Total Quality and TQM Components of TQM - Concept, Elements of TQM, Benefits 7.3 Modern Technique & Systems of Quality Management like Kaizen,5'S',6 Sigma 7.4 ISO 9001:2000 - Benefits, Main clauses	06	08
Total	**48**	**50**

Learning Resources:
Books:

Sr. No	Author	Name of Book	Publisher
01	Dr. O.P. Khanna	Industrial Engineering & Management	Dhanpat Rai & Sons New Delhi
02	Banga & Sharma	Industrial Engineering & Management	Khanna Publication
03	Dr. S.C. Saksena	Business Administration & Management	Sahitya Bhavan Agra
04	W.H. Newman E. Kirby Warren Andrew R. McGill	The process of Management	Prentice- Hall

E Source:

nptel.iitm.ac.in
http://iete-elan.ac.in/subjects/amIndustrialMgmt.htm
http://iete-elan.ac.in/subjects/amIndustrialMgmt.htm

Course Name : Diploma in Textile Manufactures

Course Code : TX

Semester : Sixth

Subject Title : Spinning Process Control

Subject Code : 17690

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
04	--	02	03	100	--	--	25@	125

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work (SW).**

Rationale:

In spinning process the fibre is gradually converted into the final product, i.e. yarn. The process of conversion starts with the purchasing of raw material and is followed by mixing, opening and cleaning, carding, drawing and doubling, combing, roving and yarn forming. The yarn, which is to be sold in the domestic and/or international markets, should be of high quality. Additionally, to get more profits, the organisation should produce yarn at lowest cost and should be able to sell the yarn at higher price.

This requires proper selection of raw material, and all the processes to be controlled strictly for higher production, best quality and lowest costs of production. The maintenance of the machines also is an important factor for this. Therefore, the students should have through knowledge of 'process control in spinning and maintenance'.

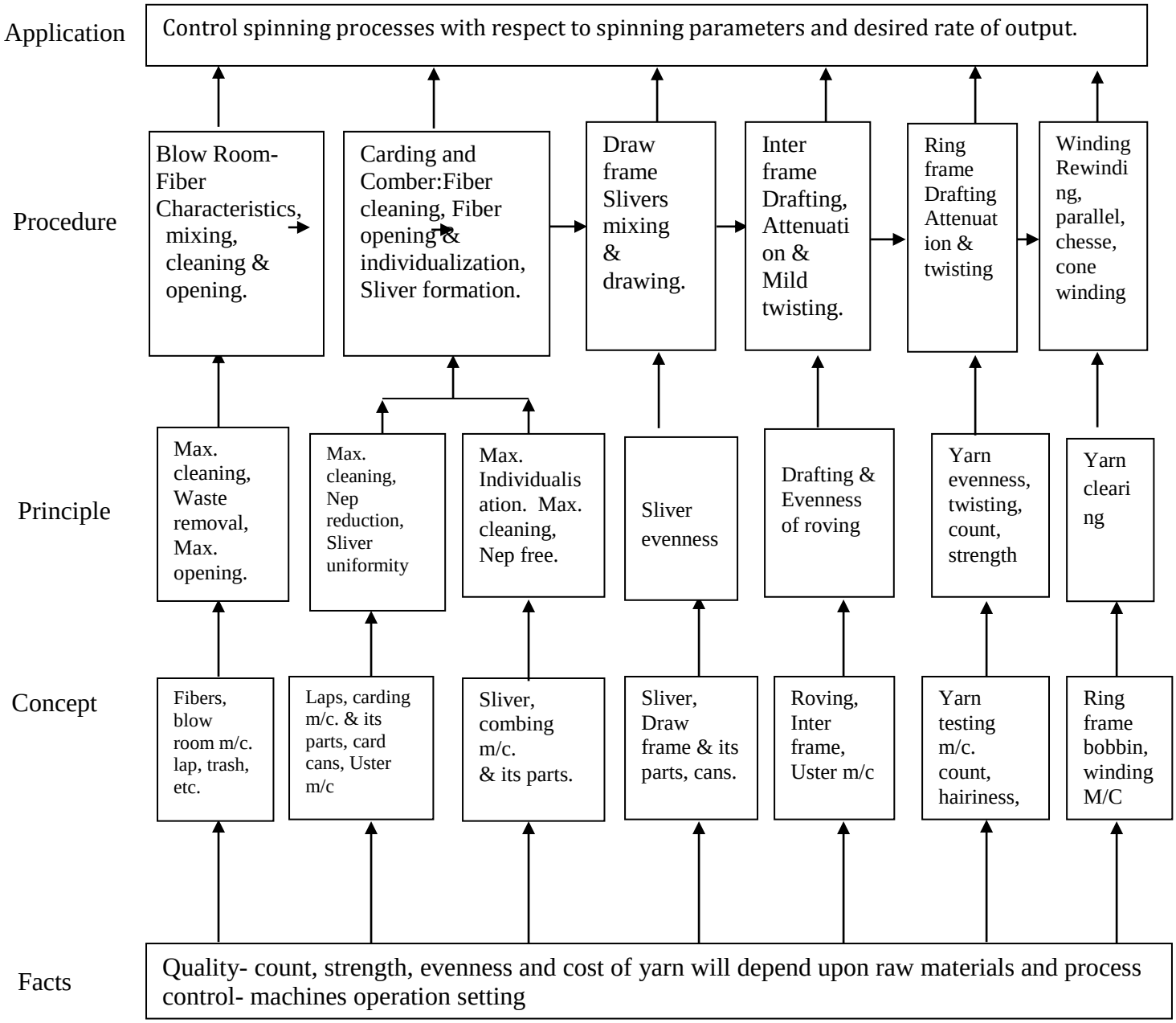
This subject imparts the students the knowledge of selection of raw material and the controlling the processes by using correct process parameters and settings etc. for the targeted achievements. It also deals with the methods to reduce the waste of material in processes and to increase life of accessories by correct ways of maintenance of all types of machines used in different processes.

Objective:

The student will able to:

1. Understand the scope of process control in Spinning.
2. Understand the importance of yarn realization.
3. Describe the method of process control in various departments of Spinning.
4. Describe the method of process control in winding department.

Learning Structure:



Contents: Theory

Topic and Contents	Hours	Marks
Topic 1. Objects & Scope for process control in spinning. **Specific Objectives** ➢ Student will understand the importance of process control ➢ They can use statistics in controlling the process. ➢ Also understand it by comparing direct & indirect control. ➢ Similarly method of setting the norms of productivity will be understood well. **Content** 1.1 Approach to process control, methodology of direct control.. 1.2 Establishing the standards or norms. 1.3 Collection and Interpretation of Data for process control. 1.4 Key Variables for process control. 1.5 Taking corrective action 1.6 Machinery audit 1.7 Setting norms and schedules of checks	04	12
Topic 2. Yarn Realisation **Specific objective:** The student will able to ➢ Describe methods of the adjustment of stock in process. ➢ Calculate yarn realisation. **Content** 2.1 Importance, estimation and control of yarn realisation. 2.2 Adjustment to allowance for hank required. 2.3 Adjustment to stock in process. 2.4 Account for reusable soft waste. 2.5 Norms for yarn realisation.	06	08
Topic 3. Control of mixing quality & cost.. **Specific objective:** The student will able to ➢ State the fiber properties. ➢ State the norms for different counts. **Content** 3.1 Importance and methods of control of mixing quality & cost. 3.2 Principle of linear programming technique. 3.3 FQI & CQI & its importance. 3.4 Norms of mixing quality for different counts.	06	10
Topic 4. Evaluation of performance of B.R. and Control of Waste **Specific objective:** The student will able to ➢ Calculate clearing efficiency. ➢ Identify the lap regularity & quality. ➢ State the different waste. **Content** 4.1 Detailed study of cleaning efficiency. 4.2 Importance & control of lap regularity & quality. 4.3 Norms for waste & cleaning efficiency etc. 4.4 Effect of relative humidity and temperature on machine performance and process waste	06	10
Topic 5. Evaluation of performance of card **Specific objective:** The student will able to ➢ Identify the defects in carding ➢ Define neps and methods of measurement.	08	12

➢ Define transfer efficiency. **Content** 5.1 Control of waste. 5.2 Cleaning efficiency. 5.3 Nep generation:- causes & remedies. 5.4 Nep measurement by template & Nep tester (AFIS). 5.5 Concept of transfer efficiency. 5.6 Effect of relative humidity and temperature on machine performance and process waste		
Topic 6. Process Control in Comber **Specific objective:** The student will able to ➢ Identify the effect of different setting on noil ➢ Identify the comber waste and sliver irregularity **Content** 6.1.Comparison of methods of Lap preparation for comber. 6.2.Evaluation of the performance of comber. 6.3.Control of comber waste and sliver irregularity. 6.4.Fractionating efficiency of comber. 6.5.Effect of relative humidity and temperature on machine performance and process waste	06	08
Topic 7. Process Control in Draw Frame **Specific objective:** The student will able to ➢ State principle of ideal roller drafting ➢ Identify the regularity of draw frame sliver. **Content** 7.1.Principles of roller drafting. 7.2.Control of regularity on Draw Frame. 7.3.Effect of relative humidity and temperature on machine performance and process waste	03	04
Topic 8. Process Control in Speed Frame **Specific objective:** The student will able to ➢ Identify the stretch in roving ➢ Identify the process defects. **Content** 8.1 Control of regularity on Speed Frame. 8.2 Defects in roving packages and their remedies. 8.3 Control of stretch at Speed Frame. 8.4 Effect of relative humidity and temperature on machine performance and process waste	04	06
Topic 9. Process Control in Ring Frame **Specific objective:** The student will able to ➢ Identify the factors affecting on strength. ➢ Identify the causes of end breakages. **Content** 9.1. Control of yarn count and strength. 9.2. Factors affecting yarn strength. 9.3. Control of yarn evenness and imperfections, Periodic irregularity:- causes due to mechanical defects. 9.4. Yarn faults and package defects. 9.5. End breaks in ring spinning: - causes, remedies and their control. 9.6. Control of count: -Routine control of count within and between count	10	14

variation, causes and remedies. 9.7. Control of yarn strength: Routine control of strength, within and between strength variation, causes and remedies. 9.8. Control of waste - (Pneumaphilbonda,hard& soft waste) 9.9.Effect of relative humidity and temperature on machine performance and process waste		
Topic 10. Process control in winding **Specific objective:** The student will able to ➢ Identify the package defects. ➢ Describe splicing method. ➢ State different types of classimate -II yarn faults. **Content** 10.1 Scope & approach to process control in winding 10.2 Optimizing quality of winding- splice and its quality control, package quality with respect to all package faults. 10.3 Removal of faults and its optimization 10.4 Classimate II- classification of faults 10.5 Study of electronic yarn clearing. 10.6 Effect of relative humidity and temperature on machine performance and process waste	08	12
Topic 11. Measurement of Productivity **Specific objective:** The student will able to ➢ Describe the method of Measuring the productivity. ➢ Identify the how to improve the productivity. **Content** 11.1 Definition of Indices of Productivity. 11.2 Measurement of Productivity. 11.3 Means to improve Productivity in Spinning.	03	04
Total	**64**	**100**

Practical:
Skills to be developed

Intellectual Skills:

1. Select speeds and settings for different machines in spinning with respect to different mixings.
2. Select yarn parameters for different machines in spinning with respect to different mixings.

Motor Skill:

1. Operate the various machines in spinning.
2. Carry out the settings of various machines in spinning.

List of Practical:

1. Test the properties of given raw material.
2. Process the material on carding machine after selecting the machine parameters.

3. Process the material on Drawing machine after selecting the machine parameters.
4. Process the material on sliver lap and ribbon lap machine after selecting the machine parameters.
5. Process the material on Comber machine after selecting the machine parameters.
6. Process the material on Speed frame machine after selecting the machine parameters.
7. Process the material on Ring Frame machine after selecting the machine parameters.
8. Test the count of Yarn.
9. Test the strength of Yarn.
10. Test the evenness of Yarn.
11. Calculate the production of machines used for processing.
12. Construction and working of modern winding machine.

Learning Resources:
Books:

Sr. No.	Author	Title	Publication
1.	W. Klein	Technology of Short Staple Spinning Vol. I to 4	The Textile Institute Manchester.
2.	T. K. Pattabhiram	Essential Facts in Cotton Spinning.	Somaiya Publication Pvt. Ltd. Mumbai.
3.	A. R. Garde (Editor)	Spinning Tablet Series (9 numbers)	The Textile association, India.
4.	A. E. De Barr, H. Catling	The Principles and Theory Of Ring Spinning. Vol. 5	The Textile Institute Manchester.
5.	Ed. By K. Ganesh, A. R. Garde	Cotton Spinning.	The Textile association, India.
6.	R. Chattopadhyay	Technology of Carding.	NCUTE, IIT Delhi
7.	R. Chattopadhyay, R. Rengasamy	Spinning- Drawing, Combing and Roving.	NCUTE, IIT Delhi
8.	K. R. Salhotra, R. Alagirusamy, R. Chattopadhyay	Ring Spinning, Doubling and Twisting	NCUTE, IIT Delhi
9.	R. Chattopadhyay	Advances in Technology of Yarn Production.	NCUTE, IIT Delhi
10.	H V S Murthy	Introduction to Textile Fibres	The Textile association, India.
11.	C.N.Modi	Process Control in weaving	ATIRA

Course Name : Diploma in Textile Manufactures

Course Code : TX

Semester : Sixth

Subject Title : Weaving Process Control

Subject Code : 17691

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
04	--	02	03	100	50#	--	25@	175

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work (SW).**

Rationale:

In weaving process the yarn is gradually converted into the final product, i.e. fabric. The process of conversion starts with the bringing the raw material i.e. yarn and it is followed by winding. warping, sizing. Drawing in and fabric forming (weaving).

In today's world of high competition, the fabric should be of high quality. Additionally to get more profits, the organization should produce the fabrics at a lowest cost and should be able to sell the fabrics at higher price.

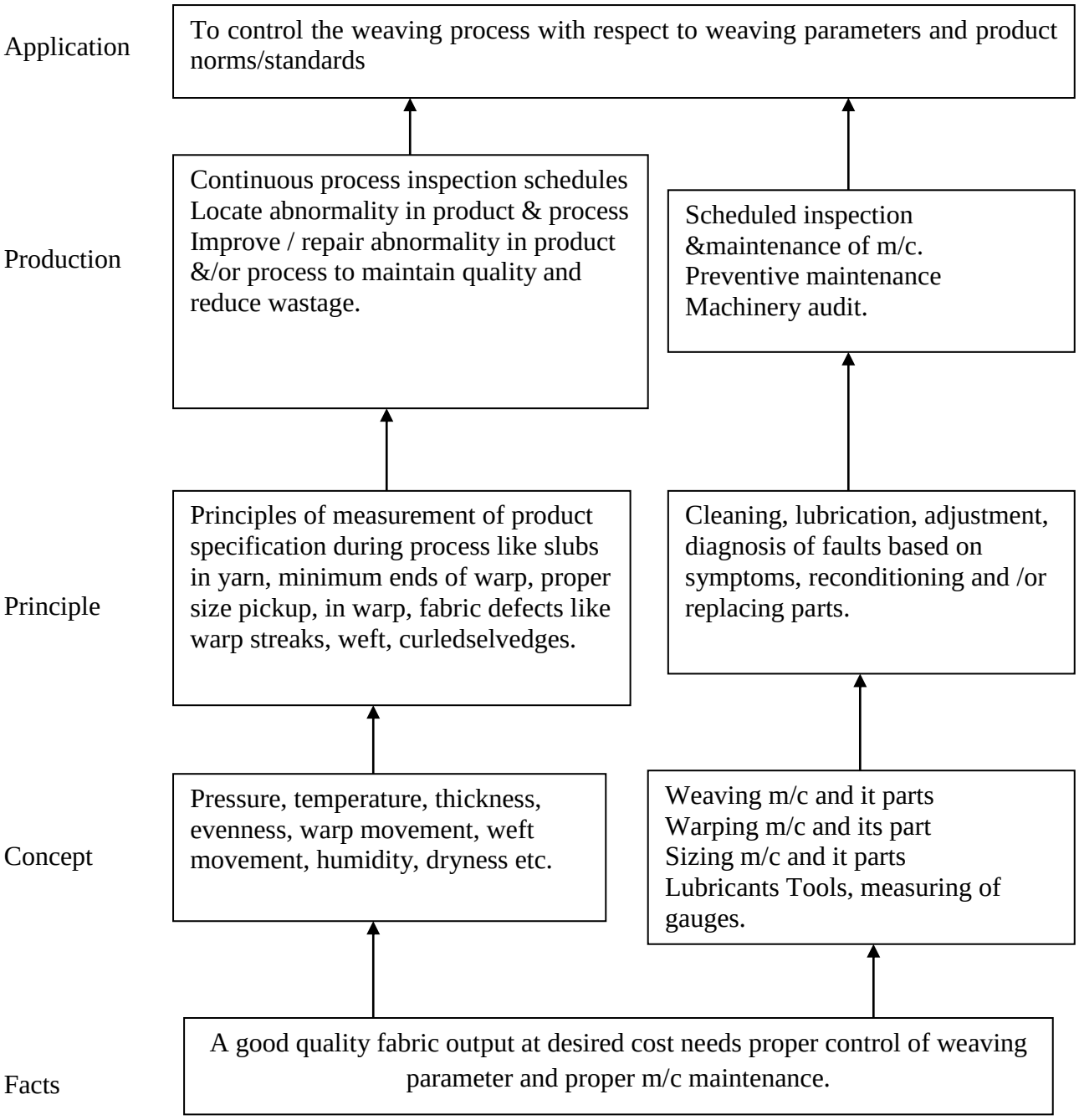
This requires proper selection of raw material, and all the processes to be controlled optimally for higher production best quality and lowest costs of production. In this mission, the maintenance of the machines also plays an important role. With these views, this subject has been introduced.

This subject imparts the student knowledge of selection of raw material and the control of the processes by using correct process parameters and settings etc. for the targeted achievements. It also deals with the methods to reduce the waste of material in processes and to increase life of equipment by planned maintenance.

Objectives

1. Students will be able to:
2. Understand process control in weaving
3. Identify parameters of process control.
4. Use control techniques for quality improvement.

Learning Structure:



Contents: Theory

Topic and Contents	Hours	Marks
Topic 1:System of process control for weaving **Specific Objectives** ➢ Student will understand the importance of process control ➢ They can use statistics in controlling the process. ➢ Also understand it by comparing direct & indirect control. ➢ Similarly method of setting the norms of productivity will be understood well. Contents: 1.1 Approach to process control, methodology of direct control.. 1.2 Establishing the standards or norms. 1.3 Collection and Interpretation of Data for process control. 1.4 Key Variables for process control. 1.5 Taking corrective action 1.6 Machinery audit 1.7 Setting norms and schedules of checks	04	12
Topic 2:Process control in warping **Specific Objectives** ➢ Student will find the factors affecting productivity at warping. ➢ Learn defects in warping. ➢ Understand process specifically. Contents: 2.1 Scope and approach of process control 2.2 Performance in warping 2.3 Minimizing end breaks in warping 2.4 Controlling quality of warper's beams & their sizes. 2.5 Calculation of production and controlling productivity (causes) 2.6 Temperature and relative humidity.	08	12
Topic 3:Process control in sizing **Specific Objectives** ➢ Students are acquainted with sizing ingredients, mixtures & it pick-up % ➢ Understand set preparation ➢ Learn to save steam & losses of waste % Contents: 3.1 Scope and approach of process control 3.2 Choice of size recipe and size pick-up preparation of size paste, cooking & care to be taken. 3.3 Control of size pick up: Determination of size recipe, pick –up and control of sizing conditions for pickup. 3.4 Control of yarn stretch at all Zones of sizing machine (Creel, wet zone, drying zone, splitting, winding zone) and measurement of stretch. 3.5 Control of size beam quality their sizes density, broken ends, missing ends, crossed ends, sticky ends, defective selvedges. 3.6 Additional elements to improve weavability: Dry steaming of warp sheet. Foam pads. After waxing. 3.7 Control of productivity Calculations for Control of size loses 3.8 Temperature and relative humidity.	14	16
Topic 4:Process control in pirn winding **Specific Objectives**	08	12

➢ The student learns the requirements of pirn winding. ➢ Learn good practices ➢ Understand drawing-in process & its special requirements. Contents: Scope and approach of process control, minimizing end breaks, minimizing mechanical stoppages, controlling pirn build, control of productivity and efficiency. **Process control of Drawing in & Warp Tying** 4.1 Scope and approach of process control. Selection, care, use reuse of all types of healds and reeds, care in dressing and knotting, care in drawing in procedure. Drop pins types & uses. 4.2 Temperature and relative humidity.		
Topic 5:Process control in loom shed with respect to productivity. **Specific Objectives** ➢ Learning of productivity & its control at looms is facilitated. ➢ Performance assessment is evaluated ➢ Efficiency of costly machine is optimized. Contents: 5.1 Scope and approach of process control. 5.2 Control of loom speed for group and individual drive, factors affecting it & its control (loom condition) 5.3 Control of loom efficiency, Factor affecting loom efficiency. 5.4 Control of loom stops due to warp breaks. 5.5 Control of loom stops due to weft breaks and shuttles changes. 5.6 Control of loom stops due to mechanical failure, loom tuning miscellaneous stop. 5.7 Methods to assess loom performance and control of efficiency through snap technique calculation of minimum rounds of snaps 5.8 Optimum loom allocation: 1) for maximum operative efficiency 2) for minimum cost of production 3) for maximum gross profits. 5.9 Temperature and relative humidity.	12	20
Topic 6:Process control in loom shed with respect to fabric quality **Specific Objectives** ➢ Nature of fabric defects is well digested by proper analysis. ➢ Method of Investigation is understood. ➢ Waste is controlled to reduce ➢ Cost of production. Contents: 6.1 Scope of control & approach of process control 6.2 Control of fabric defects. Grey fabric inspection systems. 6.3 Quality standards for export fabric, different grading systems. 6.4 Scope and approach of process control 6.5 process and incidental waste control in winding, warping, sizing, pirn winding, and weaving. 6.5 Consumption, Care and selection shuttle 6.6 Temperature and relative humidity.	10	16
Topic 7:Weaving of Polyester blends (PC-PV) & other special yarns **Specific Objectives** ➢ Special p/c blended yarn & weaving requirements are understood ➢ Extremely good quality of voile fabric with highest voile fabric with highest twist can be learned well. Contents: 7.1 Weaving of polyester blend (PB yarn)	08	12

7.2 Weaving of full voiles 7.3 Preparation of package for Dyeing		
Total	**64**	**100**

Practical:
Skills to be developed

Intellectual Skills:

Design process control parameter for the given processes in a weaving unit
Analyze control requirements of winding warping and sizing

Motor Skills:

Use SQC control techniques charts in different sections of weaving unit.

List of practical x

A) Practical(any one)

1) Preparation of Beam & weaving of cotton/Blend/Man-made yarn (3 Hrs)
2) Weaving samples on dobby loom (3 Hrs)
3) Weaving samples on jacquard loom. (3 Hrs)

B) Practical (Compulsory)

1. Style change operations on project f ile Weaving Machines
2. Style change operations on Rapier Weaving Machines
3. Style change operations on Airjet Weaving Machines
4. Loom running practice to produce faultless fabric

C) Mill Visits

1) A visit to the Mill to study the modern sizing machine and warping machine with reference to control of beam quality.
2) Find grey fabric inspection method and collection of few defective samples its analysis for process improvements.

Learning Resources:
Books:

Sr. No.	References	Title	Publisher
1	A.Ormerad	Modern preparation and weaving machinery	Woodhouse publishing Ltd., Cambridge Eng.
2	M.G. Kimothi P.D. Patilwal	Process Control in Weaving	ATIRA Ahmedabad
3	Sen Gupta	Weaving Calculations	DB Taraporewala& sons Mumbai.
4	Warping sizing & loom shed	Maintenance manuals	Machinery manufacture (Cimmco, Ruti)
5	prof. D.B. Ajgoankar M.K. Talukdar	Weaving machinery Mechanics & Management	Mahajan Publishers Pvt. Ltd. Mumbai.
6	NCUTE	NCUTE P lot Programme on Weaving	NCUTE Delhi
7	Institute of Maintenance Management	Practice Oriented correspondence course in Maintenance Management Vol -1 to 18	Institute of Maintenance Management Education Delhi.

Course Name : Diploma in Textile Manufactures

Course Code : TX

Semester : Sixth

Subject Title : Textile Mill Planning

Subject Code : 17692

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
03	--	02	03	100	--	--	25@	125

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work (SW).**

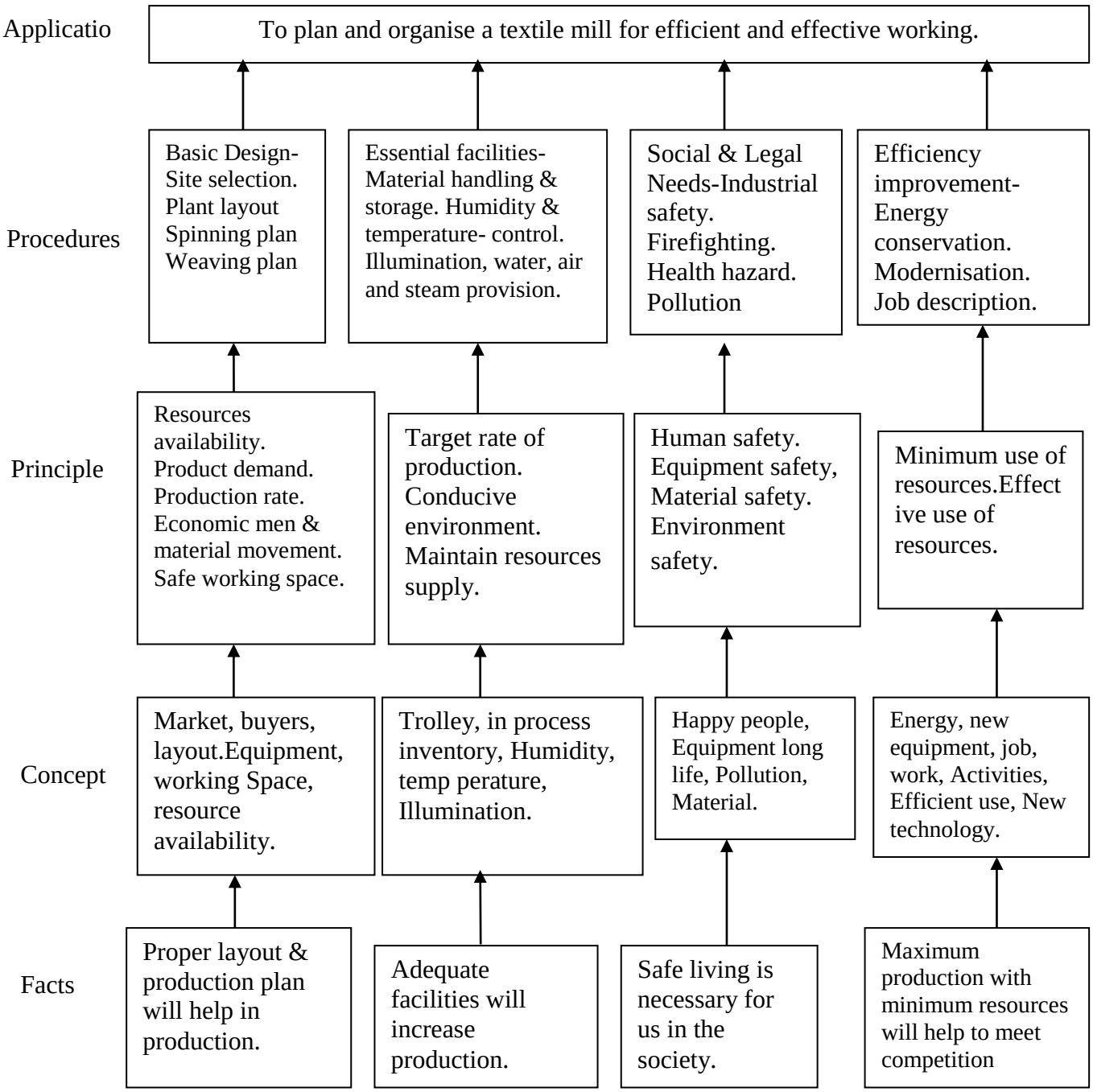
Rationale:

Effective Planning and organising is the key to the success for any textile mill. First of all supervisor should know the various areas where planning and organising is needed. These different areas are – side selection. Plant layout, material handling facilities, spinning and weaving plans, requirement of man power, power and illumination, temperature and humidity requirements in different sections of textile mills industrial safety etc. and then what kind of planning and organising activities are needed? This subject aims towards providing the students the knowledge and skills in textile mill planning and organising i.e. this subject aims to provide the answers to the questions of what is to be planned and organised and how that should be planned and realised. Besides the basic planning, an attempt is also made for introducing the elements of continues improvement in textile mill by energy conservation, and modernisation renovation and replacement of machines based on techno economic studies. This subject aims at providing the comprehensive approach towards the textile mill planning and organising for strategic to operational level, and thereby aims to develop the students not only for the supervisor level but also for the effective manager level responsibilities.

Objectives:
Student will be able to:

1. Select proper site for a Textile Mill.
2. Select proper yarn & fabric manufacturing machinery and equipments required for specific need.
3. Complete the different Government and Quasi Government formalities and procedure for starting the textile industry.
4. Plan and draw a layout of a textile mill considering different Government and Quasi Government provisions and specific needs and also considering the technical specifications of machinery.

Learning Structure:



Contents Theory:

Topic and Contents	Hours	Marks
Topic 1. Site Selection: **Specific objectives;** ➢ State factors to be considered for site selection. **Contents:** Factors to be considered while selecting the site for a textile mill/unit. Comparison of rural and urban site.	03	04
Topic2. Building construction and plant layout: **Specific objectives;** ➢ State different types of building constructions ➢ State requirements of textile mill building. ➢ State the different types of plant layouts. ➢ Differentiate between plant and process layouts. **Contents:** Types of Building construction required for textile unit. Plant layout principles of layout. Product and process layout their comparison. Symptoms of bad layout, Devices /tools used for improving layouts. Steps involved in planning a layout. Layout of various machines in spinning and weaving departments to show the arrangements of machines and other facilities provided.(detailed calculations of space requirement are not desirable).	04	08
Topic3. Material Handling **Specific objectives;** ➢ State the importance of material handling ➢ State the names of material handling equipments used in textile units. ➢ State the principles of material handling. **Contents:** Objects of material handling, importance, and principles of materials handling, types of material handling equipments used in textile unit. Factors to consider while selecting equipments, How materials are handled in spinning and weaving units?	04	08
Topic4. Spinning plan: **Specific objectives;** ➢ Understand the importance of process parameters on productivity. ➢ Calculate the production of each machine in spinning unit. **Contents:** Selection of processing parameters such as speed, draft, efficiency, waste, maintenance etc. for the production of different counts and different types of carded, combed and blend yarns. Calculations of number of machines required in different departments for given volume of the production of yarn. Layout of calculated machines for spinning.	10	20

Topic5. Weaving plan: **Specific Objectives :** ➢ Select machines for the production of given fabric with required quantity ➢ Select processing parameters for selected machines ➢ Calculate no. of machines required for specific fabric production ➢ Prepare a lay-out Plan for selected machines. **Contents:** Quality Particulars of the commonly used fabrics (epi, ppi, warp & weft count, width, crimp) Factors to be considered while selecting machinery in the weaving department. Selection of processing parameters such as speed, efficiency, waste levels, maintenance etc. for the production of different types of fabrics. Calculations of no. of machines required in different departments for given volume of the production of fabric. Preparation of lay-out of calculated machines for weaving.	10	20
Topic6. Labour requirement **Specific objectives;** ➢ State the different catagories of workers. ➢ State the job duties performed by each category of worker. **Contents:** Job description of various categories of workers significance of workload, standard work load &labour complement in various departments of spinning & weaving units.	05	12
Topic7. Energy Conservation **Specific objectives** ➢ Understand the importance of energy conservation. **Contents:** Energy conservation;- concept and importance. Power requirement of various machines: - norms and actual values, energy audit. Measures taken for energy conservation in textile mill.	03	10
Topic8. Humidification and Temperature Control: **Specific objectives;** ➢ Understand the importance of humidity**.** ➢ State the R.H.% required in each department of textile unit. **Contents:** Importance of proper temperature and humidity in each section of spinning & weaving process. Methods of humidification and equipment in textile mills.	03	10
Topic9. Safety, Pollution and Health Hazards : **Specific Objectives :** ➢ Select the causes for the air, water and noise pollution. ➢ Suggest measures to reduce air, water and noise pollution in a textile unit. ➢ State causes for industrial accidents and health hazards in a textile unit. ➢ Suggest control measures to reduce industrial accidents and health hazards in a textile unit. Contents: 9.1 Brief study of air, water and noise pollution, control measures to reduce	06	08

them. 9.2 Industrial accidents, their causes and control measures. 9.3 Health hazards in a textile unit.		
Total	**48**	**100**

Practical:
Skills to be developed

1) Intellectual Skills:

1. Analyze and select proper site for a Textile Mill.
2. Analyze and select proper yarn & fabric manufacturing machinery and equipments required for specific need.
3. Plan layout of a textile mill considering different Government and Quasi Government provisions and specific needs and also considering the technical specifications of machinery.

2) Motor Skills:

1. Prepare a spin plan or weave plan as per the required quantity of product to be produced.
2. Draw a lay out plan of a textile mill considering different Government and Quasi Government provisions and specific needs and also considering the technical specifications of machinery.
3. Complete the different Government and Quasi Government formalities and procedure for starting the textile industry.

List of Assignments:

1. Prepare a spin plan for spinning unit considering appropriate production capacity for a carded, combed or blended yarn and calculated the machines required the same.
2. Prepare a weave plan for any particular sort for specific production capacity and also calculate the number of machines required for weaving preparatory.
3. Give the actual labour complement of any department in spinning unit you have visited and compare it with standard complement.
4. Give the actual labour complement of any one department in weaving unit you have visited and compare it with standard complement.
5. Prepare a layout of any one department in spinning unit showing only the arrangement of machines and other facilities to be provided (detailed calculations considering the dimensions of machines are not necessary).
6. Prepare a layout of any one department in weaving unit showing only the arrangement of machines and other facilities to be provided (detailed calculations considering the dimensions of machines are not necessary).
7. Prepare a check-list of routine maintenance for specific machines in Blow-Room, Carding, Draw Frame, Combing Department.
8. Prepare a check-list of routine maintenance for specific machines in Speed Frame, Ring Frame, Winding Department.
9. Prepare a check-list of routine maintenance for specific machines in Warping, Sizing, Pirn Winding Department.
10. Prepare a check-list of routine maintenance for specific machines in Weaving Department, for non-automatic, automatic and shuttleless looms.
11. Visit to appropriate offices to collect information on any two topics given below.
    a) Title search of land to be procured for textile Mill.
    b) Study of different zones and availability of land for textile mill.
    c) Study of different procedures of registration of sales deed of land for textile mill.
    d) Study of procedure to convert agricultural land to non-agricultural purpose.

e) Study of procedure to obtain consent to start textile mill.
f) Study of procedure for obtaining building permission, drainage connection and water connection.
g) Study of procedure for obtaining power connection.
h) Study of provisions regarding industrial and Boiler safety.

Learning Resources:
Books:

Sr. No.	Author	Title
1	Dhudeja	Textile mill management
2	T.R. Banga and S.C. Sharma	Industrial organization and Engineering economics
3	O.P. Khanna	Industrial management
4	--	Indian Factories Act – Welfare and Safety provision specially with reference to layout
5	--	Pollution Control Act – Consent for establishment of Textile Industry
6	--	Boilers Act – Specially with reference to Layout
7	--	Industrial Licensing Rules
8	--	Local Municipal / Municipal Corporation Rules regarding establishment of Textile Industry – Building Permission, Drainage and Water Connection etc. specially with reference to layout
9	--	Registration of Deeds - Sales, Agreement, Contracts etc.
10	--	State Electricity Board Rules for power supply specially with reference to layout
11	--	Technical Manuals of different textile machinery and equipment manufacturers
12	--	Rules for obtaining permission of non-agricultural use of land
13	Grosicki	Watson's Textile Design and Colour

Course Name : Diploma in Textile Manufactures

Course Code : TX

Semester : Sixth

Subject Title : Yarn Manufacturing - V

Subject Code : 17693

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
02	01	00	02	50	--	--	25@	75

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work (SW).**

Rationale:

During v semester students studied the un-conventional and Air-Jet spinning system. The cotton yarn produced on cotton system and un-conventional spinning system there are some limitations on yarn properties with respect to yarn quality and production capacity.

As compared to cotton fiber the quality is good and the cost of synthetic raw material is very less. After synthetic material blending with cotton and processing on cotton spinning system the quality can be improved and the cost of can reduced. This will be studied in Topic-I PROCESSING OF BLEND.

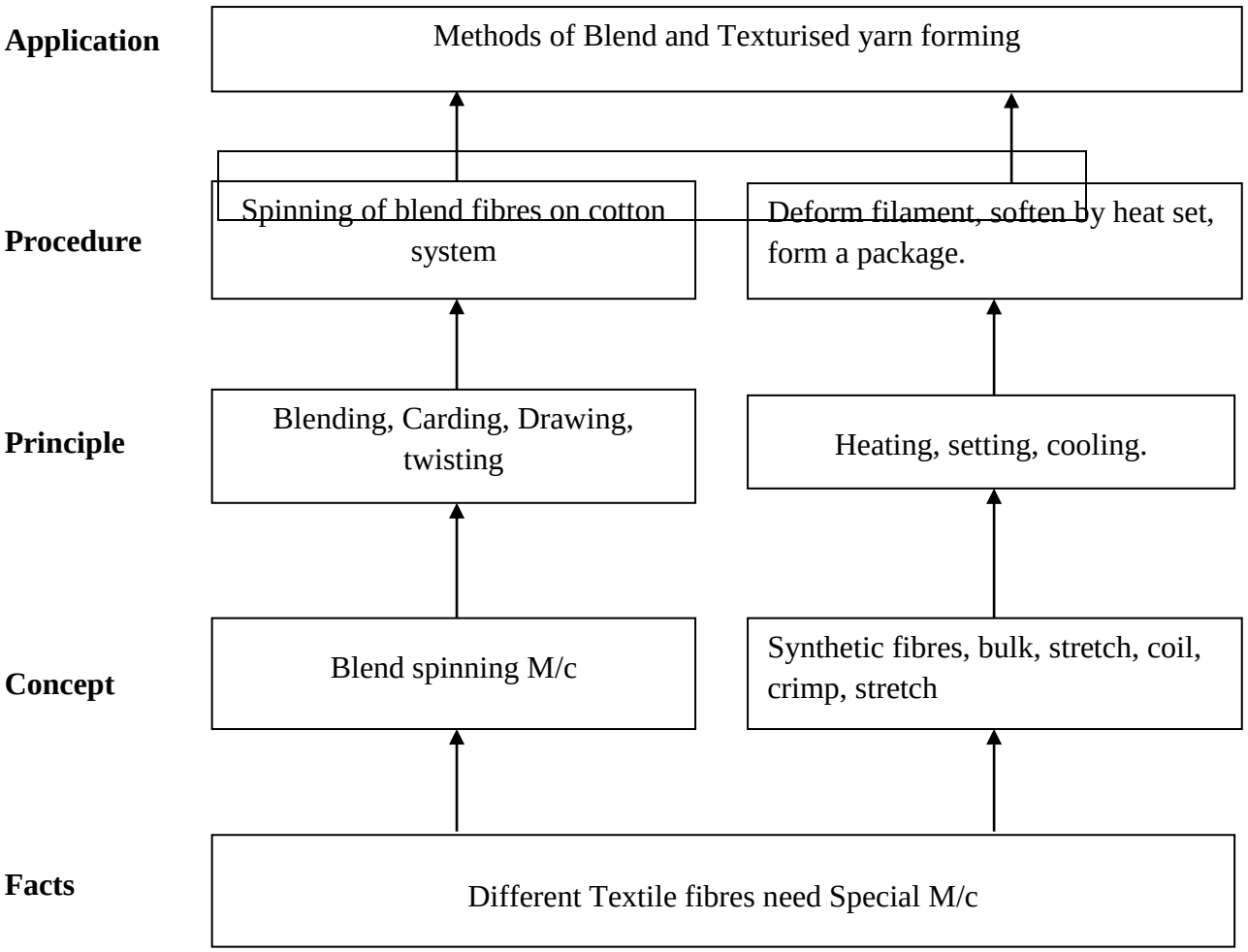
To change the structure and characteristics of a synthetic filament the texturising process is necessary, that can be used in weaving which will improve the quality of fabric and reduce the cost, this will be studied in Topic-II STUDY OF TEXTURISING PROCESS.

There is a clear indication of shift from sellers' market to consumers' market. This will further have an impact to reduce the cost of production and distribution as well as to inculcate high standards of quality in the product. Now, it is becoming imperative to use advanced machines / equipments. These machines should be capable of giving a very high production and high quality products by using synthetic man-made fiber in the areas of spinning and weaving.

General Objectives:

1. Study the processing of blend spinning.
2. Study the changes required to process blend material on cotton spinning machine.
3. Study the properties and end-uses of blend yarn.
4. Understand the advantages of textured yarns.
5. Understand the texturing process.

Learning Structure:



Theory:

Topic and Contents	Hours	Marks
Topics 1: Processing of blends **Specific Objectives:** ➢ Describe the processes for blend spinning. ➢ State the characteristics of blended yarns. **Contents:** • Objectives of blending, indices of blending (only definitions of degree of mixing and index of blend irregularity) • Tinting, selection of blend constituents, blending at blow room and draw frame, difference between them. • Processing of P/C & P/V blends on cotton spinning machines and changes to be made at blow room, carding, drawing, fly frame, ring frame. Common blended yarn faults. • Spinning of long staple fibres. • Properties of ring spun blended yarns. • Study of yarn faults. • Effect of relative humidity and Temperature on blend spinning at different departments.	16	26
Topic 2: Study of Texturing process. **Specific Objectives:** ➢ Describe the texturing processes. ➢ State the different types of textured yarns. ➢ State the different methods of texturing. **Contents:** • Introduction. • Objects of texturing • Difference between spun yarns and filament yarns. • Advantages of textured yarns, Classification of textured yarns- stretch, modified stretch and bulk yarns. Classification of texturing methods. End uses of textured yarns • False twist texturing, factors influencing properties of false twist textured yarn, Texturing variables factors,i.e.material variables,machine variables,and process variables. • Study of Draw texturing process, comparison between pin spindle and friction disc • Study of Air jet texturing process. Effect of processing parameters on properties of yarns. • Brief description of other texturing methods as; Gear crimping, Stuffer box, Edge crimping, Knit- de- knit crimping. • Study of texturised yarn defects and causes.	16	24
Total	**32**	**50**

List of Assignments:

1. Processing of blend fibre on cotton spinning system.
2. Properties of major man-made fibres.
3. Blend Yarn faults

4. Draw Texturing machine.
5. Factors influencing on textured Yarn
6. Texturing Methods

Learning Resources:
References:

Sr. No.	Author	Title	Publication
1.	W. Klein	Man made fibres and their Processing.	The Textile Institute Manchester.
2.	R. Chattopadhyay, R. Rengasamy	Spinning- Drawing, Combing and Roving.	NCUTE, IIT Delhi
3.	K. R. Salhotra	Spinning of manmade and Blends on Cotton System	The Textile association, India.
4.	B. C. Goswami and Dale Martin.	Textile Yarns	John Willey and Sons, India
5.	Dr. M. S. Rao Mr. A.B.Talele	A guide to crimping / Texturising Technology	Man-Made Textile Research Association

Course Name : Diploma in Textile Manufactures

Course Code : TX

Semester : Sixth

Subject Title : Technical Textiles

Subject Code : 17650

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
02	01	--	02	50	--	--	25@	75

NOTE:

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work (SW).**

Rationale:

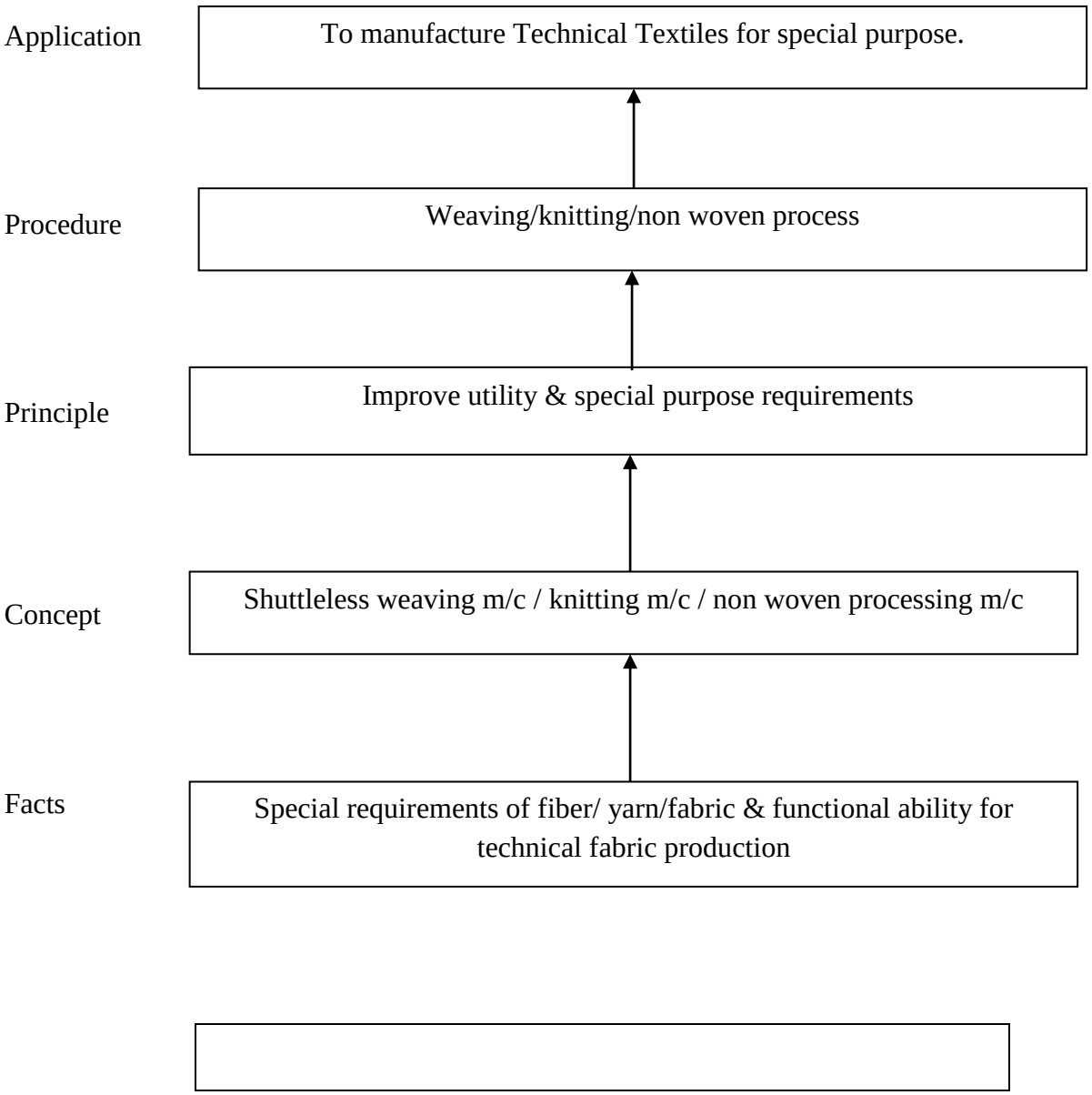
The textiles are to be produced for different end uses. These end uses decide properties of textile materials. Major applications of textiles are related to clothing need of mankind. Hence in these applications, aesthetic properties of textiles are important. Apart from apparels, textiles are also used for other end uses from very long time .Since majority of these applications are related with Industry. Hence, these textiles were called as Industrial Textiles.

In recent past, enormous developments have taken place in the field of Science and Technology, which have opened new areas of applications for textiles. As all these applications require specific end use oriented products. Hence functional properties of textiles have become important .Stringent controls are therefore necessary right from raw material selection to production of final product. Hence term Technical Textiles have been applied for them. In the final semester students are introduced to this special and challenging field of Textile Applications.

General Objectives:

1. Understand concept of Technical Textiles.
2. Know the scope of applications for Technical Textiles.
3. Know raw material requirements for Technical Textiles.
4. Understand requirements of specific Technical Textiles.

Learning Structure:



Contents: Theory

Topic and Contents	Hours	Marks
Topics 1: Introduction to Technical Textiles **Specific Objectives:** ➢ Understand concept of Technical Textiles. ➢ Know areas of applications of Technical Textiles. **Contents:** • Definition and scope of Technical Textiles. • History, present status and future of Technical Textiles. • Classification of Technical Textiles. • Areas of application of Technical Textiles.	06	12
Topic 2 : Coating and Laminated Textiles **Specific Objectives:** ➢ Understand chemistry of coated textiles. ➢ Know raw material requirement for coated fabrics. ➢ Understand coating and laminating techniques. ➢ Know uses of Coated Fabrics **Contents:** • Introduction, chemistry of coated fabrics. • Fibers and fabrics used in coating ,polymers and additives used in coating • Material for coating, substrate for coating. • Coating technique, Fusible interlinings. • Physical properties of coated fabrics, • Laminating, applications of Coated and Laminated fabrics.	08	10
Topics 3: Filtration Applications. **Specific Objectives:** ➢ Understand principles of Filtration. ➢ Understand dust filtration, solid-liquid filtration. ➢ Know fabric construction and finishing types used for Filtration applications. **Contents:** • Introduction, principles of filtration, filtration spectrum • Dust filtration, fabric construction. • Solid-liquid separation, yarn types, fabric construction, • Finishing types.	04	08
Topic 4 : Medical Textiles **Specific Objectives:** ➢ Know classification Medical Textiles. ➢ Know characteristics of materials used for Medical Textiles. ➢ Understand uses of Medical Textiles. **Contents:** • Introduction, classification of Medical Textiles. • Characteristics of materials used for medical uses. • Non-implantable materials, extracorporeal materials, corporeal materials. • Health care / hygiene products.	06	08
Topic 5: Textiles in Defense. **Specific Objectives:**	08	12

➢ Know criteria for modern military textile materials. ➢ Understand areas of applications of Defense Textiles. **Contents:** • Introduction, criteria for modern military materials. • Applications of textile in defense areas such as environmental protection , thermal insulation ,water vapour permeable/water proof materials ,ballistic protection , biological and chemical warfare protection , high altitude fabrics, camouflage concealment & deception, flame retardant, heat protective military textiles .		
Total	**32**	**50**

List of Assignments:

1. Definition and classification of Technical Textiles .Various applications of Technical Textiles.
2. **Coating and laminating textiles**: Introduction, materials and substrates for coating. Coating techniques. Applications of coated and laminated fabrics.
3. **Filtration Applications**: Introduction, principles of filtration, dust filtration in Textile Industry.
4. **Medical Textiles**: Introduction, characteristics of materials used for medical purposes. Applications of Technical Textiles for Medical purposes (any four)
5. **Textiles in Defense**: Introduction, criteria for modern military textile materials, applications of Textiles in defense area (any four)

Learning Resources:
References:

Sr. no.	Author	Title	Publication
1.	Sabit Adanur.	Wellington Seas', Handbook of Industrial Textiles	The Textile Institute, Manchester, England.
2.	A.R.Harrocks S.C.Anand	Handbook of Technical Textiles	Wood head Publications Ltd. England.
3.	Edited by J.W.S.Hearle	High Performance Fibre.	Wood head Publications Ltd. Cambridge England.
4.	Pushpa Bajaj A.K.Sengupta	Industrial Applications of Textiles: Textiles for filtration and coated fabrics. Textile Progress Vol.14,No.1	Textile The Institute, Manchester, England.
5.	Anand Subhash	Medical Textiles 96	Wood head Publications Ltd. Cambridge, England.
6	P.W.Harrison	Protective Clothing. Textile Progress Vol.22,No.2/3/4	Textile The Institute, Manchester, England.
7	J.O.Ukponmwan.	The Thermal Insulation Properties of Fabrics. Textile Progress Vol.29 Vol.1/2	Textile The Institute, Manchester, England.
8	S.K.Mukhopadhyay .J. F. Partidge.	Automotive Textiles. Textile Progress Vol.24 Vol.4	Textile The Institute, Manchester, England.

Course Name : All Branches of Diploma in Engineering & Technology

Course Code : EJ/EN/ET/EX/EV/IC/IE/IS/MU/DE/ME/PG/PT/AE/CE/CS/CR/ CO/CM/IF/ EE/EP/CH/PS/CD/ED/EI/CV/FE/FG/IU/MH/MI/TX/TC/DC/AU

Semester : Fifth for EJ/EN/ET/EX/EV/IC/IE/IS/MU/DE/ME/PG/PT/AE/CE/CS/CR/ CO/CM/IF/EE/EP/CH/PS/AU and Sixth for CD/MH/IU/CV/FE/FG/MI/ ED/EI/DC/TC/TX

Subject Title : Behavioural Science

Subject Code : 17075

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
01	--	02	--	--	--	25 #	25 @	50

Rationale:

With increased globalization and rapid changing business expectations, employers are looking for wide cluster of skills to cater to the changing demand. Personality traits and soft skills are playing a key role in a student's career in this changing scenario. Corporate houses look for soft skills that supplement hard skills.

Addition of behavioural science in curriculum is intended to enhance the efficiency of a person so that he can contribute to overall growth of organisation. It aims at developing insight into leadership, team building, motivation, interpersonal relationship, problem solving, decision making and aspects of personality in a technician's profile. Addition of the topic of organizational culture will further mould him/ her in the organisational role.

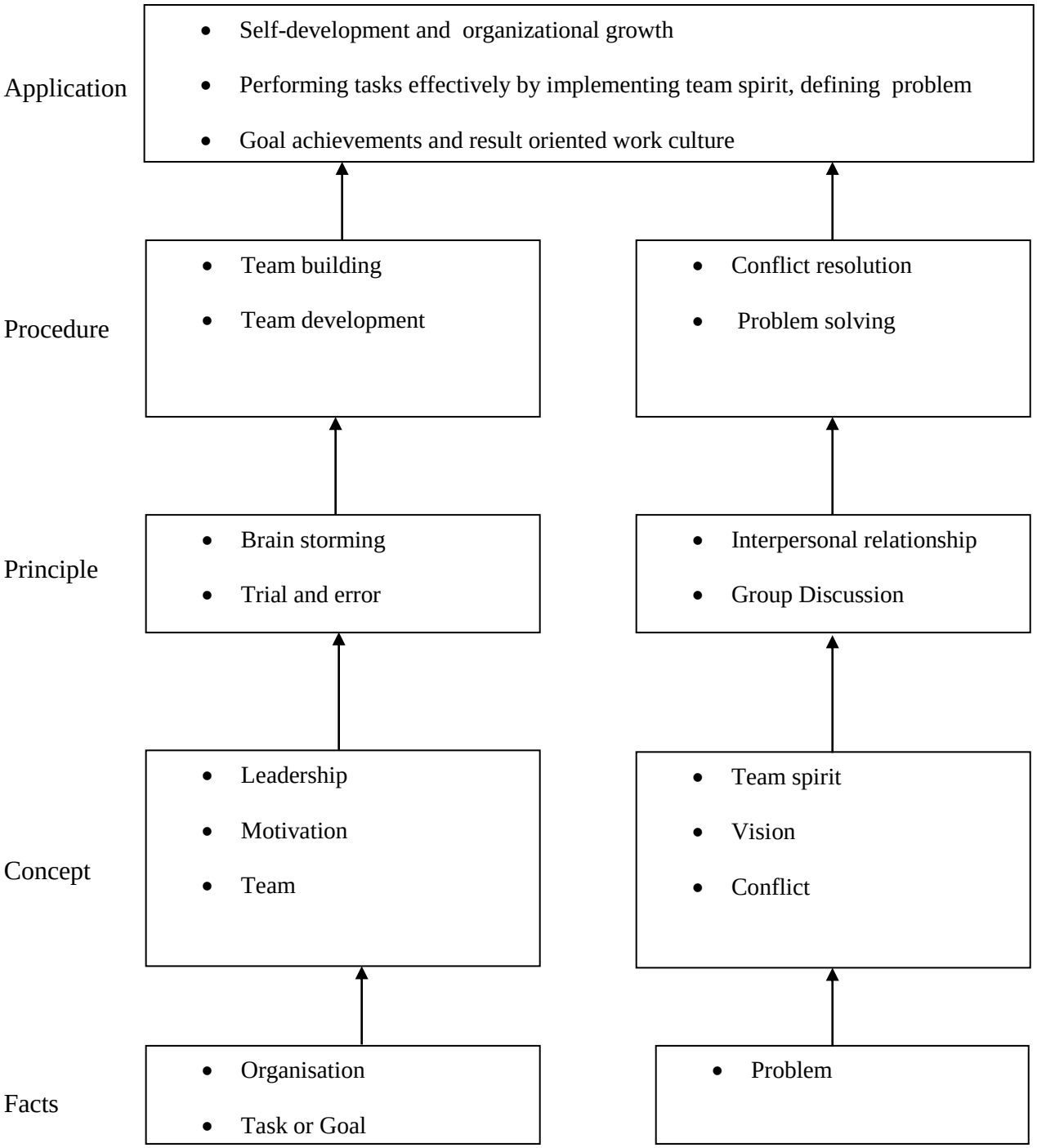
This subject of 'Behavioural Science' provides a broad base in which a technician can develop a successful career in the world of work.

General Objectives:

After studying this subject, the students will be able to:

1. Develop him/her as Team leader.
2. Use self-motivation and motivate others.
3. Build a team and develop team spirit among the team members.
4. Improve the interpersonal relationship skills.
5. Learn Problem solving and decision making skills.
6. Discuss a particular topic in a group and face the interview.

Learning Structure:



Theory:

Topic and Contents	Hours
Topic 1: Leadership 1.1 Management Education-History, Development, Importance, Areas of specialization, need and importance of behavioural science 1.2 Meaning and Types of Leaders, Qualities of leader, Examples 1.3 Leadership- Definition, importance, leadership in various organizations 1.4 Leadership styles-task -people matrix. Persuasive, Authoritative, Democratic, Delegative Leadership styles. Maturity of followers, situational leadership	02
Topic 2: Motivation 2.1 Meaning 2.2 Importance of Motivation 2.3 Types of Motivation- Intrinsic, Extrinsic, Examples 2.4 Maslow's motivation theory- pyramid of needs, individual and industrial applications 2.5 Tips for Motivation	02
Topic 3: Emotional Intelligence 3.1 Major concepts - emotion, families of emotion, components of emotional expressions 3.2 Emotional intelligence, cognitive intelligence 3.3 Basic emotional competencies	02
Topic 4: Team Building 4.1 Team- Need, Definition, Difference between group and team 4.2 Characteristics of a good team 4.3 Steps in team formation- forming, norming, storming, performing, adjourning 4.4 Roles of team members 4.5 Characteristics of a good team member 4.6 Types of teams-Work, mgmt, cross functional, quality circle, self-managed team	03
Topic 5: Conflict Resolution 5.1 Definition, types (interpersonal, intrapersonal, groups), indicators of conflicts 5.2 Sources of conflict - ego, poorly defined authority and responsibility, power, interests, greed, difference in value system, complex work situations 5.3 Skills for conflict resolution 5.4 Steps in conflict management -Mapping of conflict, negotiation- steps in negotiation, 5.5 Styles of conflict management- collaborating, competing, cooperating, avoiding, compromising	03
Topic 6: Decision Making 6.1 Importance of decision making 6.2 Definition Characteristics of good decision 6.3 Characteristics of good decision	02

6.4 Types of decisions- programmed, non programmed, strategic, tactical, impulsive 6.5 Group decision making 6.6 Steps of decision making	
Topic 7: Interview Techniques 7.1 Job search opportunities 7.2 Development of résumé´ and cover letter- essentials of a good résumé´, contents of Résumé´, layout of résumé´, cover letter 7.3 Group discussion- objectives, do's and don'ts for effective participation, evaluation parameters, suggested topics 7.4 Psychometric tests- Aptitude test, guidelines for preparations for aptitude test, Personality test 7.5 Personal interview-guidelines for preparing for job interviews, common questions	02
Total	**16**

Practical:
Skills to be developed:

Intellectual Skills:

- Develop ability to find his strengths
- Select proper source of information.
- Follow the technique of time and stress management.
- Set the goal.

Motor Skills:

- Follow the presentation of body language.
- Work on internet and search for information.
- Prepare slides / transparencies for presentation.

List of Assignments:

01	Case study: Employee motivation and leadership.
02	To build a tower from a given material as a team activity
03	To prepare Jigsaw puzzles (common shapes) from the given jigsaw pieces as a team.
04	Case study on conflict Resolution
05	Assess your style of conflict resolution
06	Decision making activity: of Selection of the best suitable company.
07	Participate in a guided group discussion
08	Assessment of self-aptitude in numerical computation, estimation, data interpretation, mechanical, spatial and abstract reasoning
09	Assessment of self-aptitude in Verbal ability and data checking.
10	Development of résumé´ and covering letter

Note: Subject teacher shall guide the students in completing the assignments based on above practicals.

Learning Resources:
Books:

Sr. No.	Author	Name of Book	Publication
1	Subject Experts-MSBTE	Handbook and assignment book on Development of Life Skills-II	MSBTE
2	Dr. Kumkum Mukherjee	Principles of management and organizational behaviour	Tata McGraw Hill Education Pvt Ltd.
3	Dr.T.Kalyana Chakravarti Dr.T.Latha Chakravarti	Soft Skills for Managers	Biztantra
4	Barun K Mitra	Personality Development and soft skills	Oxford University Press
5	Priyadarshini Patnaik	Group discussion and interview skills	Foundation Books

Course Name : Diploma in Textile Manufactures

Course Code : TX

Semester : Sixth

Subject Title : Project and Seminar

Subject Code : 17815

Teaching&ExaminationScheme:

TeachingScheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
--	--	04	--	--	--	50#	50@	100

General Description:

Seminar/Project is the most action oriented teaching methods which demand a great measure of independence from the students- covering actual working situation; covering the interests of all participants; self organization and responsibility and developing practical results. Every student will meet for an hour or so every week in the seminar period for a full term of an academic semester. By project /seminar the students will learn to understand complex and working situations of textile and related industry and to realize and interpret them.

Learning Objectives:

Intention is that the students gain the following skills through the process of seminar / project

1. Skills of Group Interaction.
2. Skills of Integrative Discussion.
3. Skills of critical evaluation.
4. Skills of exploring literature.

Nature or the project:

Project should be based on any one of the following areas and related to any one specific textile processes (spinning, weaving, chemical processing, knitting & garment manufacturing).

1. Manufacturing
2. Innovations
3. Effect of change in parameters on quality and performance.

Expected outcomes of the Project / Seminar:

1. Shy or reserved students get confidence for oral communication.
2. Students experience diverse views on a topic.
3. Discussion helps to clarify students' own views.
4. Students gain a clearer understanding of the topic.
5. Students are highly motivated to research and prepare for discussion / presentations.
6. Group sharing provides a more in depth understanding of the material.

7. Asking questions and forming opinions for seminar leads students to a discovery of who they are.
8. Smaller group discussion allows exploration of topic that might not occur in classroom.
9. Students are put at ease because seminars put each participant on even ground

Planning:

Preparation phase:

Setting dates, selection of topics in consultation with Guide, overall setting of topics, finding related topics, integrating subjects, setting time limits, setting the way of presentation, examining organizational questions.

Main Phase:

Method of individual project phases.
Group work, individual work, working in the class, giving out tasks.
During the main phase, fixed points should be set in regular interval.
Participants should sit together and report their work in the following fashion to date and their plans for the next stage.

Topic:
Material:
Task Completed:

Final Phase: Going through the whole presentation with all participants.