

## Scheme of Teaching and Examination for VI Semester DIPLOMA in TEXTILE ENGINEERING

### THEORY

Sr. No.	SUBJECTS	SUBJECT CODE	TEACHING SCHEME		EXAMINATION - SCHEME					
			Periods per Week	Periods in one Session (Year)	Hours of Exam.	Terminal Exam. (A) Marks	Final Exam. (B) Marks	Total Marks (A+B)	Pass Marks Final Exam.	Pass Marks in the Subject
1.	Professional Studies & Entrepreneurship	00601	04	50	03	20	80	100	26	36
2.	Textile Testing & Quality Control	28602	04	50	03	20	80	100	26	36
3.	Textile Chemistry – II	28603	04	50	03	20	80	100	26	36
4.	Garment Technology	28604	04	50	03	20	80	100	26	36
5.	Elective*		04	50	03	20	80	100	26	36
	Sericulture & Silk Technology	28605A								
	Processing of Synthetic & their Blends	28605B								
	Technical Textile	28605C								
	Computer Aided Textile Design	28605D								
	Textile Management	28605E								
<b>Total:-</b>			<b>20</b>					<b>500</b>		

### PRACTICAL

Sr. No.	SUBJECTS	SUBJECT CODE	TEACHING SCHEME		EXAMINATION – SCHEME					
			Periods per Week	Periods in one Session (Year)	Hours of Exam.	Marks Internal Exam (A)	Marks External Exam (B)	Total Marks (A+B)	Pass Marks Final Exam.	Pass Marks in the Subject
6.	Textile Testing Lab. – II	28606	09	60	03	10	40	50	16	21
7.	Textile Chemistry Lab. – II	28607	09	60	03	10	40	50	16	21
<b>Total :-</b>			<b>18</b>					<b>100</b>		

### SESSIONAL

Sr. No.	SUBJECTS	SUBJECT CODE	TEACHING SCHEME		EXAMINATION - SCHEME			
			Periods per Week	Periods in One Session (Year)	Marks of Internal Examiner (X)	Marks of External Examiner (Y)	Total Marks (X+Y)	Pass Marks in the Subject
8.	Professional Studies & Entrepreneurship	00607	04	50	20	30	50	25
9.	Project Work & Its presentation in Seminar	28609	—		40	60	100	50
<b>Total :-</b>			<b>04</b>				<b>150</b>	

<b>Total Periods per Week</b>	<b>42</b>	<b>Total Marks = 750</b>
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# PROFESSIONAL STUDIES & ENTREPRENEURSHIP

<b>Subject Code</b> <b>00601</b>	<b>Theory</b>			<b>No of Period in one session : 50</b>		
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>	<b>:</b>	<b>100</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>	<b>:</b>	<b>80</b>
	<b>04</b>	<b>-</b>	<b>-</b>	<b>Internal Exam.</b>	<b>:</b>	<b>20</b>

**Rationale:**

The paper has been introduced to achieve dual purpose for the students. Firstly, this course provides the basics of Professional management and secondly it also prepares the student to develop self reliance by becoming an entrepreneur.

This makes them conversant with their duties and responsibility to make them successful in their career building by developing profession expertise.

**Objectives:**

With the input provided in this paper, the students will be able to :-

- Acquire basic knowledge of management.
- Understand the various area of management such as human resources, marketing, finance and commercial aspect, production & material management etc.
- Understand the benefit of becoming an entrepreneur.
- Handle a project efficiently and independently.
- To avail subsidies / grants / loan etc. from various of agencies.

## PART-I: PROFESSIONAL STUDIES

**TOPIC:**

**01 – INTRODUCTION:** [05]

- |       |   |      |
|-------|---|------|
| 01.01 | Professional Ethics:<br>Definition, Objective, Right & Wrong, Duty & Obligation   | [05] |
| 01.02 | Management:<br>Definition, Function and Objectives.   | [05] |
| 01.03 | Leadership:<br>Definition, Types – Autocratic, Democratic and Laissez – faire, Functions and Characteristics of Leadership. | [05] |
| 01.04 | Motivation :<br>Definition, Types and Importance / Benefits   | [05] |
| 01.05 | Forms of Business organization:<br>Sole proprietorship, Partnership, Joint Stock company and Co-operative Societies.        | [05] |
| 01.06 | Supervisor’s/Technician’s role:<br>Concept of supervisory management, career needs, Role of Technicians in an organization. | [05] |

## PART-II: ENTREPRENEURSHIP

**TOPIC:**

**02 – INTRODUCTION:** [10]

- |       |   |      |
|-------|---|------|
| 02.01 | Entrepreneurship:<br>Concept, Characteristics of a successful entrepreneurship, basic ingredients of entrepreneurship:<br>1. Finance 2. Technology 3. Sales and Marketing | [10] |
| 02.02 | Project Report:<br>Meaning, Project Identification, Project Selection, Contents of a project Report, Techno-Economic Feasibility Report (TEFR), Market Survey.            | [10] |

02.03 Sources of Finance: [05]  
Government, Commercial Banks, Financial institutions:  
SIDBI – Small Industries development Bank of India  
SFC – State Financial Corporations  
IDBI – Industrial Development Bank of India  
IFCI – Industrial Finance Corporation of India  
ICICI – Industrial Credit Investment Corporation of India

02.04 Acts : [05]  
Indian factories Act 1948 ( Main Provision Only)  
Consumers Protection Act 1986 ( Main Provision Only)

**03 – PROJECT WORK:**

As elaborated in Sessional Paper (00607).

**Books Recommended :**

1. Essential of Management, Tata McGraw Hill, Publishing Company Ltd., New Delhi. - Herald Koonz & Cyril O' Donnel.
2. Business Organization and Management, S. C. Chand and Company (Pvt.) Ltd., Ram Nagar, New Delhi - M. C. Shukla.
3. Managerial Economics, Sultan Chand & Sons, New Delhi - R. L. Vashney & K. L. Maheshwari
4. Project Appraisal and Follow up, Govind Prakashan, Mumbai. - D. P. Sharda
5. Modern Marketing Management, Progressive Corporation Pvt. Ltd., P51, Mahatma Gandhi Road, Bombay-400 001 - Dr. Rustam S. Davar
6. A hand book for new entrepreneurs (with special reference to science and technology target group) - Entrepreneurship Development Institute of India, 83-A, Swastic Society Navrangpura, Ahmedabad, PIN-380 009.

**Reference Books:**

1. Leadership in Organisation - Published by I.S.T.E. Mysore
2. Motivation - Published by I.S.T.E. Mysore
3. Motivation - I.I.T. Kanpur - Published by I.S.T.E. Mysore
4. A Hand book on Project Appraisal and follow up, Govind Prakashan, 204, Saraswati Kunj, 90, S. V. Road, Goregoan, Bombay-400 062. - D. P. Sarda
5. Bihar Industrial Policy - Government of Bihar, Department of Industries.
6. Entrepreneurship Guide - Bihar State Financial Corporation, Fraser Road, Patna-800 001.

# TEXTILE TESTING & QUALITY CONTROL

<b>Subject Code 28602</b>	<b>Theory</b>			<b>No of Period in one session : 50</b>			
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>		<b>:</b>	<b>100</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>		<b>:</b>	<b>80</b>
	<b>04</b>	<b>-</b>	<b>-</b>	<b>Internal Exam.</b>		<b>:</b>	<b>20</b>

**Rationale :**

**Objective:**

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Yarn Testing.	(15)
02	Fabric Testing.	(21)
03	Evenness Testing.	(07)
04	Statistical Quality Control.	(07)
<b>Total :</b>		<b>(50)</b>

**CONTENTS:**

**TOPIC: 01 – YARN TESTING:**

**[15]**

01.01	Twist in Yarn.
01.01.01	Introduction.
01.01.02	Twist direction.
01.01.03	Amount of twist and Use of Twist Multiplier.
01.01.04	The function of twist in yarn structure.
01.01.05	Twist and yarn strength.
01.01.06	Effects of twist on fabric Properties.
01.01.07	Methods of determination of twist.
01.01.07.01	Ordinary Twist tester (or, straightened fibre method).
01.01.07.02	Continuous Twist tester
01.01.07.03	Twist Contraction method.
01.01.07.04	Take – up Twist tester.
01.01.07.05	Optical method.
01.01.07.06	The Quadrant twist tester.
01.02	Yarn Strength.
01.02.01	Introduction.
01.02.02	Forces for Strength.
01.02.03	Factors affecting the tensile Properties of textiles and the results obtained from testing instruments.
01.02.04	Principles of tensile testing machines – CRL and CRE Principles.
01.02.05	The Pendulum Lever Principle with Constant Rate of Traverse.

01.02.06	The Inclined Plane Principle.
01.02.07	Determination of Yarn Strength.
01.02.07.01	Single thread Strength tester.
01.02.07.02	Uster Single thread strength tester.
01.02.07.03	Scott Inclined plane tester.
01.02.07.04	Lea Tester.
01.02.08	Ballistic Principle or the Impact Principle.
01.02.08.01	Ballistic Tester.
01.02.09	The Count – Strength Product (CSP).

**TOPIC: 02 – FABRIC TESTING:**

[21]

02.01	Quality Particulars of Fabric.
02.02	Fabric Length and its measurement.
02.03	Fabric Width and its measurement.
02.04	Fabric Thickness.
02.04.01	Principle of the measurement of Fabric Thickness.
02.04.02	Methods of measuring thickness.
02.04.02.01	Heal's thickness gauge.
02.04.02.02	Reynolds and Branson thickness tester.
02.04.02.03	Shirley thickness gauge.
02.05	Fabrics weight and its measurement.
02.06	Threads per inch in woven fabric.
02.07	Crimp of Yarn in Fabric.
02.07.01	Crimp, Crimp Percentage and Crimp Amplitude.
02.07.02	Crimp and fabric properties.
02.07.03	Measurement of Crimp Percentage.
02.07.03.01	W.I.R.A. Crimp tester.
02.07.03.02	Manra Crimp tester.
02.08	Fabric Strength.
02.08.01	Introduction.
02.08.02	Tensile Strength testing :- Ravelled Strip method, cut Strip method and Grab method.
02.08.02.01	Methods of Measuring Tensile Strength.
02.08.02.01.01	Combined Tensile strength tester (vertical).
02.08.02.01.02	Horizontal cloth tester.
02.08.03	Tearing Strength testing.
02.08.03.01	Introduction.
02.08.03.02	Methods of measuring the Tearing Strength : - Tongue tear test, Tongue Double rip tear test, Trapezoid tear test, Ballistic tear test and Wing rip tear test.
02.08.03.02.01	Tearing Strength by 'Shirley' double Pendulum ballistic tester.
02.08.04	Bursting Strength testing.
02.08.04.01	Introduction.
02.08.04.02	Methods of Measuring Bursting strength.
02.08.04.02.01	Hydraulic Bursting strength tester.
02.09	Fabric Stiffness, Handle and Drape.

02.09.01	Introduction.
02.09.02	Drape and its measurement by Drape – Meter.
02.09.03	Stiffness and its measurement.
02.09.03.01	‘Shirley’ stiffness tester.
02.09.03.02	Heart – loop tests.
02.10	Crease Resistance and Crease Recovery.
02.10.01	Introduction.
02.10.02	Measurement of Crease recovery.
02.10.02.01	‘Shirley’ Crease Recovery tester.
02.11	Serviceability, Wear and Abrasion Resistance.
02.11.01	Introduction.
02.11.02	Testing of Abrasion Resistance.
02.11.02.01	B.F.T Abrasion testing machine.
02.11.02.02	Martindale Abrasion tester.
02.12	Pilling of fabrics and its measurement.
02.12.01	I.C.I. Pilling tester.
02.13	Air Permeability.
02.13.01	Introduction.
02.13.02	Measurement of Air Permeability.
02.13.02.01	‘Shirley’ Air Permeability tester.
02.13.03	Air Permeability and Fabric Properties.
02.14	Water and Fabric Relationships.
02.14.01	Introduction: - Water Permeability, Absorbability, Shower Proof, Water Proof, Water Repellent and Basic Concept of wetting and water repellency.
02.14.02	Methods of Testing & Wettability of Cotton fabrics.
02.14.02.01	Spray Test.
02.15	Flammability.
02.16	Shrinkage Tests.
02.16.01	Introduction to Shrinkage, Relaxation and Felting.
02.16.02	Testing for Shrinkage.
02.17	Denison Tensile Testing machine ( for Cords, ropes and heavy industrial fabrics).

**TOPIC: 03 – EVENESS TESTING:**

**[07]**

03.01	Introduction.
03.02	Nature of Irregularity.
03.03	Classification of variation.
03.04	Index of Irregularity.
03.05	Methods of measuring Irregularity.
03.05.01	Visual Examination Methods.
03.05.02	Fielden – Walker Evenness Tester.
03.05.03	Uster Evenness Tester.
03.06	Causes of Irregularity.
03.07	Effects of Irregularity.
03.08	Interpretation of the results of irregularity tests.

- 03.09 Uster Classimat.
- 03.10 Hairiness in spun yarn and its measurement.

**TOPIC: 04 – STATISTICAL QUALITY CONTROL:**

[07]

- 04.01 Introduction.
- 04.02 Objectives of Quality Control.
- 04.03 Advantages of Statistical Quality Control.
- 04.04 Causes of Variation in Quality:- Chance causes and Assignable causes.
- 04.05 Techniques of S.Q.C. :- Process Control and Product control.
- 04.06 Process Control.
- 04.06.01 Quality Control Chart : concepts, Use of control chart, Advantages of using quality control charts.
- 04.06.01.01 Control Limits.
- 04.06.01.02 Control Limits for Range Chart (or Range – Chart).
- 04.06.01.03 Specification Limits.
- 04.06.01.04 Types of Control charts : Control chart for variables & Control charts for Attributes.
- 04.06.01.04.01 Control charts for Variables :  $\bar{x}$  – charts and R-charts.
- 04.06.01.05 Interpretation of control charts.
- 04.06.01.06 The choice of Limits and effects of Sample size on the limits.
- 04.06.01.07 Application of Quality control charts in Textile Industry.
- 04.07 Product control.
- 04.07.01 Acceptance Sampling.
- 04.07.02 Single Sampling plan.
- 04.07.03 Double Sampling plan.
- 04.07.04 Multiple or Sequential Sampling plan.
- 04.08 Importance of Quality control in textile.

**Reference Books :**

- 1. -
- 2. -
- 3. -
- 4. -
- 5. -

# TEXTILE CHEMISTRY - II

<b>Subject Code 28603</b>	<b>Theory</b>			<b>No of Period in one session : 50</b>		
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>		<b>: 100</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>		<b>: 80</b>
	<b>04</b>	<b>-</b>	<b>-</b>	<b>Internal Exam.</b>		<b>: 20</b>

### Rationale :

Textile Chemistry is one of the main activities for a diploma holder technician in Textile Engineering. He is required to apply different types of dyes on natural and synthetic fibres finishing of natural fibres, different styles of printing. He must be well versed with the subject of Textile Chemistry.

The subject is being introduced to develop the understanding of Wet Processing, Printing and finishing.

### Objective:

After completion of the courses student will be able to :-

- ◆ Define the terminologies related with Textile Chemistry.
- ◆ Explain the principle and working of Dyeing, Printing and Finishing.
- ◆ Methods of application of dyes.
- ◆ Understand the Wet processing and their related problem.

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Dyeing.	(16)
02	Dyeing of Synthetic Fibre.	(20)
03	Printing.	(10)
04	Finishing.	(14)
<b>Total :</b>		<b>(60)</b>

### CONTENTS:

#### **TOPIC: 01 – DYEING:** **[16]**

- |       |  |      |
|-------|--|------|
| 01.01 | Properties, Selection and application of various dyes like vats, Aniline Black, Azoic, Reactive dyes, Mordant colour, Pre-metallised dyes and other popular dyes used on Cotton, Wool, Silk. | (10) |
| 01.02 | Various after treatments given to dyed goods.  | (02) |
| 01.03 | Textile auxiliaries and chemicals used in dyeing and their functions.  | (04) |

#### **TOPIC: 02 – DYEING OF SYNTHETIC FIBRE:** **[20]**

- |       |   |      |
|-------|---|------|
| 02.01 | Disperse Dyes – Introduction and properties.  | (01) |
| 02.02 | Methods of application on Polyester by High temperature dyeing process, Thermosol process, Carrier method, Rapid dyeing technique.          | (06) |
| 02.03 | Brief idea about Dyeing machine like conventional and Modern H P H T Beam Dyeing machine, H P H T Jet Dyeing machine, Winch Dyeing machine. | (04) |
| 02.04 | Dyeing of Polyamide fabric with Disperse dyes, Acid dyes.   | (02) |
| 02.05 | Dyeing of Viscose rayon with Direct Dyes, Sulphur Dyes and Vat Dyes.  | (01) |
| 02.06 | Dyeing of Acetate rayon with disperse Dyes.   | (01) |
| 02.07 | Dyeing of blended textiles and garments.  | (05) |



**TOPIC: 03 – PRINTING:** [10]

- 03.01 Detailed Study of Different styles of printing – Discharge Style, Direct Style, Resists Style. (04)
- 03.02 Comparative study of different styles of printing and their importance. (01)
- 03.03 Printing of cotton with Rapid fast colour and Rapidozones Colour. (01)
- 03.04 Study about Silk goods printing. (01)
- 03.05 Study about Pigment Printing. (01)
- 03.06 Printing of synthetic goods. (02)

**TOPIC: 04 – FINISHING:** [14]

- 04.01 Objects and methods of Finishing. (01)
- 04.02 Classification of various finishes. (01)
- 04.03 Finishing process an overview- (06)  
Sanforization, Anticrease, both internal and external application of synthetic resins, Organdy effects, Water repellent finishes, Fire proofing, Rot proofing, Water proofing, Creping, Calendering, Softening and Stiffening finishes, Raising, Shearing, Heat Setting, Methods of evaluation of finishing effects.
- 04.04 Special study on finishing of woolen materials, Silk fabrics. (03)
- 04.05 Finishing of Synthetic fibre fabrics. (02)
- 04.06 A brief Study of finishing machines like – Water mangle, different types of Starching mangles, cylinder and hot air drying machines, Calenders. (02)

**Reference Books :**

1. Textile Chemistry, Vol.-I, II, III, Elsewhere Publishing Co., - R. H. Peters.  
New York.
2. Modern Techniques of Textile Bleaching, Dyeing and -  
Finishing, SITRA Publication.
3. Chemical Processing of Cotton, Polyester Cotton Blends - J. R. Modi & A. R. Garde.
4. Dyeing of Polyester blends. - M. L. Gulrajani.
5. Principles and Practice of dyeing. - V. A. Shenai.
6. An Introduction to Textile Finishing. - J. T. Marsh.
7. Textile Printing. - Miller.

# GARMENT TECHNOLOGY

<b>Subject Code 28604</b>	<b>Theory</b>			<b>No of Period in one session : 50</b>			
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>		<b>:</b>	<b>100</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>		<b>:</b>	<b>80</b>
	<b>04</b>	<b>-</b>	<b>-</b>	<b>Internal Exam.</b>		<b>:</b>	<b>20</b>

## Rationale

With increasing demand of readymade garments the need for personnel in the garment industry is increasing day by day. The subject garment technology is therefore included and it is kept in VI semester. This would give the students necessary knowledge for working in garment industry.

## Objective:

With the input provided in this paper, the students will be able to:-

- Acquire basic knowledge of Garment Technology.
- Define the terminologies related with Garment Technology.
- Understand the principle and working operation of Cutting, Sewing and Finishing of garment and their related problem.

<u>Sl. No.</u>	<u>Topic</u>	<u>Period</u>
1.	Garment Manufacturing	[03]
2.	Selection of Fabrics	[03]
3.	Pattern making	[04]
4.	Cutting	[12]
5.	Sewing	[15]
6.	Trimming and Garment accessories	[03]
7.	Garment finishing	[04]
8.	Quality Control in Garment Industry	[04]
9.	Computer Application in Garment Manufacturing	[02]

## CONTENTS

1. **Garment Manufacturing:** Introduction, An overview about Indian Garment Industry - Fashion Trends- Labour and capital requirements in the garment industry. Production planning in garment manufacturing, Different garment production systems, Growth of readymade garments Industry in India. Global scenario.
2. **Selection of Fabrics:** Garment from Woven and Knitted fabrics, various fabrics available in market, their characteristics and applications to suit to different purposes.
3. **Pattern making:** Introduction to pattern making and garment Construction, Different terminologies. Methods of making basic pattern, grading of pattern, size, size charts.
4. **Garment Cutting:** Objectives, (i) Planning, drawing and reproduction of marker: Requirements of marker planning, Marker plan efficiency, Methods of marker planning and marker use. (ii) Spreading of the fabric to form a lay: Requirements of the spreading process, Methods of spreading, Nature of fabric packages. (iii) The cutting operation. Methods of cutting and their merits and demerits. Bundling system.

5. **Garment Sewing:** The properties of seam, seam types, stitch types, sewing machine feed mechanism, sewing machine needles, sewing threads. Thread properties and seam performance, testing for sewability and tailorability. Sewing problems and quality control; Sewing machinery, mechanism and accessories. Alternative Methods of Joining Material, Production Evaluation, Inspection & Care labeling of Apparel.
6. **Trimming and Garment accessories:** Definition, types, trimming methodologies and accessories application.
7. **Garment finishing:** Fasteners, thread tucking, care and size labeling system, checking, pressing, folding and packing, packing standards for domestic and export markets.
8. **Quality Control in Garment manufacturing:** Control in pattern making, grading, fabric laying, marking, sewing and finishing, control of garment defects.
9. **Computer Application Garment Manufacturing:** Application in pattern making, grading, lay planning, sewing and finishing, computer aided embroidery designs. Concepts of computer integrated manufacturing (CIM) to the garment industry.

**Books Recommended:**

1. Carr H AND Lantham B, “ The Technology of Clothing Manufacture”, Om Book Service, Delhi.
2. Mehta P V and Bhardwaj S K, “ Managing Quality in apparel industry”, Om Book Service, Delhi.
3. Aldrich W, “ Metric Pattern Cutting”, Om Book Service, Delhi, 1998
4. Cooklin Gerry, “ Garment Technology for Fashion Designers”, Om Book Service, Delhi, 1997
5. G. Cooklin, Introduction to clothing Manufacture, Blackwell Science, London.
6. Harold Care & Barbar Latham,  
The Technology of Clothig and Manufacturing, Oxford Blackwell Scientific Publication, London, 1984

# SERICULTURE AND SILK TECHNOLOGY

<b>Subject Code 28605A</b>	<b>Theory</b>			<b>No of Period in one session : 50</b>		
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>	<b>:</b>	<b>100</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>	<b>:</b>	<b>80</b>
	<b>04</b>	<b>-</b>	<b>-</b>	<b>Internal Exam.</b>	<b>:</b>	<b>20</b>

**Rationale :**

Silk is called as queen of textile world. Fabric made of silk are much in demand because of its durability and appearance. The production of Silk yarns has increased keeping the pace with market demand.

“Sericulture and Silk Technology” is being offered as an elective for those students who are interested in enhancing their knowledge and skill in this field. The course is designed for the students to go a bit deep into the subject which may be useful for their career advancement.

**Objective:**

A student will be able to understand :-

- ◆ Sericulture industry, Silk worms seed production, Silk worm rearing etc.
- ◆ Silk reeling and silk throwing.
- ◆ Silk weaving and processing industry.

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Sericulture.	(16)
02	Cocoons.	(06)
03	Reeling.	(06)
04	Silk throwing.	(04)
05	Weaving Industry.	(08)
06	Processing Industry.	(06)
07	Spun Silk Industry.	(04)
<b>Total :</b>		<b>(50)</b>

**CONTENTS:**

<b><u>TOPIC: 01 – SERICULTURE:</u></b>		<b>[16]</b>
01.01	Mulberry Cultivation.	(02)
01.02	Diseases and pests of mulberry.	(01)
01.03	Silk worms seed production – Embryonic growth – Hibernating eggs.	(02)
01.04	General Principles of Silk worm rearing.	(02)
01.05	Primary requisites for successful silk worm rearing.	(02)
01.06	Facilities for rearing, disinfection, brushing.	(02)
01.07	Environmental conditions for silk worm rearing.	(01)
01.08	Bed cleaning.	(01)
01.09	Spacing, mounting and harvesting.	(02)
01.10	Diseases and pests of silk worm.	(01)

<b><u>TOPIC: 02 – COCOONS:</u></b>	<b>[06]</b>
02.01 Physical and Commercial characteristics.	(01)
02.02 Sorting of cocoons.	(01)
02.03 Cocoon testing, Storage of cocoons, Stifling of cocoons, Drying of cocoons.	(02)
02.04 Cooking of cocoons – Various methods employed.	(02)
<b><u>TOPIC: 03 – REELING:</u></b>	<b>[06]</b>
03.01 Silk Reeling.	(01)
03.02 Methods of Silk reeling – Charkha, Cottage basins, Filatures.	(03)
03.03 Raw Silk testing.	(01)
03.04 Packing of raw silk, Utilisation of by – products.	(01)
<b><u>TOPIC: 04 – SILK THROWING:</u></b>	<b>[04]</b>
04.01 Manufacture of yarns for use in ordinary, Chiffon, Crepe, Georgetts fabrics.	(02)
04.02 Number of plies and different twist levels used.	(01)
04.03 Recent developments in Silk throwing industry.	(01)
<b><u>TOPIC: 05 – WEAVING INDUSTRY:</u></b>	<b>[08]</b>
05.01 Preparation of warp and weft Yarn.	(01)
05.02 Different machinery employed in small scale and organised sections.	(04)
05.03 Silk Weaving – Handloom and Powerloom Weaving.	(02)
05.04 Special features of Silk looms.	(01)
<b><u>TOPIC: 06 – PROCESSING INDUSTRY:</u></b>	<b>[06]</b>
06.01 Degumming and drying of silk yarns.	(01)
06.02 Dyeing of silk by different dyes.	(03)
06.03 Printing of Silk goods.	(01)
06.04 Finishing of Silk fabrics.	(01)
<b><u>TOPIC: 07 – SPUN SILK INDUSTRY:</u></b>	<b>[04]</b>
07.01 Introduction regarding Spun Silk Industry.	(04)

**Reference Books:**

1. Hand Book of Practical Sericulture. - S. R. Ullal & M. N. Narasimhanna.
2. F. A. O. Publications. -

# PROCESSING OF SYNTHETIC & THEIR BLENDS

<b>Subject Code 28605B</b>	<b>Theory</b>			<b>No of Period in one session : 50</b>		
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>		<b>:</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>		<b>:</b>
	<b>04</b>	<b>-</b>	<b>-</b>	<b>Internal Exam.</b>		<b>:</b>
						<b>100</b>
						<b>80</b>
						<b>20</b>

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	General Introduction to Spinning.	(02)
02	Blending.	(05)
03	Blowroom.	(05)
04	Carding.	(04)
05	Drawing.	(04)
06	Roving.	(03)
07	Ring spinning.	(05)
08	Spinning of Dyed Fibres.	(02)
09	Winding and Doubling.	(03)
10	Properties of Blended yarns.	(02)
11	Processing of staple Fibres in woollen and worsted spinning system.	(05)
12	Weaving.	(03)
13	Wet Processing.	(07)
<b>Total :</b>		<b>(50)</b>

**CONTENTS:**

**TOPIC: 01 – GENERAL INTRODUCTION TO SPINNING: [02]**

- 01.01 Introduction.
- 01.02 General information on man-mades.
- 01.03 Common systems of Spinning of staple fibres.
- 01.03.01 Cotton system of spinning.
- 01.04 Fibre characteristics and spinnability such as staple length, Fibre denier (Fineness), Fibre strength, Crimp, Fibre finish, Merge number.
- 01.05 Fibre Properties and end – uses.

**TOPIC: 02 – BLENDING: [05]**

- 02.01 Introduction and Reason for Blending.
- 02.02 The aim of Blending.
- 02.03 Principles of fibre selection.
- 02.04 Measures of blending,
- 02.05 Migration.
- 02.06 Tinting.
- 02.07 Selection of blend constituent.
- 02.08 Mechanics of blending.
- 02.08.01 Blending at blowroom.
- 02.08.02 Blending at drawframe.
- 02.08.03 Relative merits and demerits of different blending methods.
- 02.08.04 Optimum blending method.

**TOPIC: 03 – BLOWROOM:****[05]**

- 03.01 Introduction.
- 03.02 Conditioning.
- 03.03 Typical Sequence of blowroom machines.
- 03.04 Principles of Opening.
- 03.05 Bale Breaker, Kirschner beater.
- 03.06 Speed and settings.
- 03.07 General Considerations such as Grid bars, Calender– roller Pressure, Draft between cages, calendars and lap roller, Pneumatic conveyance, Lap spindle, Lap licking, Lap weight, Lap storage, Atmospheric conditions etc.
- 03.08 Waste and Production.

**TOPIC: 04 – CARDING:****[04]**

- 04.01 Introduction and objectives of carding.
- 04.02 Intensity of carding.
- 04.03 Card clothing.
- 04.04 Speeds and settings.
- 04.05 General Considerations.
- 04.06 Waste and Production.
- 04.07 Card Auto- Levellers.
- 04.08 Fibre Hooks.
- 04.08.01 Formation of Fibre Hook.
- 04.08.02 Tracer Fibre Technique.
- 04.09 Carding faults & their elimination.
- 04.10 Process control of man – made Fibres & their blends.

**TOPIC: 05 – DRAWING:****[04]**

- 05.01 Introduction and objectives of drawframe.
- 05.02 Blending at drawframes.
- 05.03 Drafting Systems.
- 05.04 Roller lapping: causes and remedies.
- 05.05 General considerations.
- 05.06 Waste, Production and Unevenness.
- 05.07 Theory, of drafting for removal of hooks in sliver.

**TOPIC: 06 – ROVING:****[03]**

- 06.01 Introduction and objects.
- 06.02 Drafting systems adopted for man- made fibres and blends.
- 06.03 Roller Setting.
- 06.04 Spindle speed.
- 06.05 Roving twist and False – twist attachments.
- 06.06 General considerations.
- 06.07 Production and Unevenness.

**TOPIC: 07 – RING SPINNING:****[05]**

- 07.01 Introduction and objects.
- 07.02 Drafting Systems.
- 07.02.01 Roller settings.
- 07.02.02 Modified drafting system.
- 07.03 Yarn twist.
- 07.04 Spindle speed.
- 07.04.01 Spinning rings and travelers.

- 07.05 Yarn hairiness.
- 07.06 General considerations.
- 07.06.01 Feed, Roller Lapping and Roller weighting.
- 07.06.02 New aprons, Fibre Lubricant film.
- 07.07 Yarn quality and Common Yarn faults.
- 07.08 Waste and Production.

**TOPIC: 08 – SPINNING OF DYED FIBRES:** [02]

- 08.01 Introduction.
- 08.02 Fibre dyeing.
- 08.03 Application of antistatic finish and Segregation.
- 08.04 Spinning Processes.
- 08.05 Effect of dyeing on Fibre Properties.
- 08.06 Waste and Yarn quality.

**TOPIC: 09 – WINDING AND DOUBLING:** [03]

- 09.01 Introduction.
- 09.02 Winding machine.
- 09.03 General Considerations.
- 09.04 Doubler winding.
- 09.05 Doubling.

**TOPIC: 10 – PROPERTIES OF BLENDED YARNS:** [02]

- 10.01 Introduction.
- 10.02 Influence of fibre Properties and blend composition on yarn properties.
- 10.02.01 Yarn tenacity.
- 10.02.02 Breaking extension.
- 10.02.03 Yarn evenness.

**TOPIC: 11 – PROCESSING OF STAPLE FIBRES IN WOOLLEN AND WORSTED SPINNING SYSTEM:** [05]

- 11.01 Methods of Man-made Fibre Processing in Worsted Spinning.
- 11.02 Tow Conversion Technique : Cutting, abrasion and stretch – breaking.
- 11.02.01 Stapling of Tow by Cutting.
- 11.02.02 Stapling of Tow by Strech – Breaking.
- 11.03 Blending wool with Man-made fibres.
- 11.04 Processing of Polyester/wool blends on Worsted system.
- 11.05 Processing of Acrylic/ wool blends on worsted system.
- 11.06 Processing of Acrylic /wool blends on woollen system.

**TOPIC: 12 – WEAVING:** [03]

- 12.01 Brief study of Weaving of Synthetic : Warping, Sizing, Beaming, Looming, Weaving on Loom.

**TOPIC: 13 – WET PROCESSING:** [07]

- 13.01 Brief study of wet Processing of synthetic and their blends grey inspection and Preparation of the stain, stamping, Bleaching, Mercerization, Heat setting, Dyeing, Printing and Finishing.

**Books Recommended:**

- 1. -
- 2. -
- 3. -
- 4. -
- 5. -



# TECHNICAL TEXTILE

<b>Subject Code 28605C</b>	<b>Theory</b>			<b>No of Period in one session : 50</b>		
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>		<b>:</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>		<b>:</b>
	<b>04</b>	<b>-</b>	<b>-</b>	<b>Internal Exam.</b>		<b>:</b>
						<b>100</b>
						<b>80</b>
						<b>20</b>

## TOPIC

## PERIOD

1. Introduction	[03]
2. Non- Wovens	[03]
3. Textiles in Filtration	[05]
4. Automotive Textiles	[08]
5. Geo- Textiles	[10]
6. Medical Textiles	[08]
7. Other Fields of technical Textiles	[07]
8. Textile- Reinforced Composite Materials	[06]

**Total = 50**

## CONTENTS

1. **Introduction:** Definition and scope of “Technical Textiles”, Classification, Products, market overview and growth projections of technical textiles. Brief idea about technical fibers, yarns and fabric structures.
2. **Non – Wovens:** Definition, Importance of Non-Wovens, Brief idea about non- Woven productions.
3. **Textiles in Filtration:** Introduction, Principles of wet and dry filtrations. Mechanisms of separation. Fiber and fabric selection for filtration, Characteristic properties of fibers and fabrics in filtration.
4. **Automotive Textiles:** Introduction, Applications of technical textiles in passenger Cars, other road vehicles, Aircraft and Rail, Fibers used for automotive applications – upholstery, carpeting, pre-formed parts, type safety devices, filters and engine compartment items. Brief idea about manufacturing processes and application of these devices or parts.
5. **Geo- Textiles:** Introduction, Geo synthetics and its field, functions and application areas of geo textiles and parameters influencing this functions, fibers and fabric selection criteria for geo textile applications. Functions of Geo-textiles- filtration, reinforcement, drainage, road & railway work, erosion control, etc.
6. **Medical Textiles:** Introduction, Fibers used, Classification of Medical Textiles, Non- implantable materials, Extracorporeal Devices, Implantable materials, Healthcare/ Hygiene products.
7. **Other Fields of technical Textiles:** Protective and defense textiles, Agro textiles, Textiles in Packaging, Textiles in Sports, etc.
8. **Textile - Reinforced Composite Materials:** Introduction, classification of composite materials, Reinforcement materials, Matrix/Resin, Brief idea about manufacturing processes of Composites, Applications of Composites.

## Reference:

1. “Handbook of Technical Textiles”, Ed. A R Horrocks and S C Anand, Woodhead Publication Ltd., Cambridge, 2000.
2. “Wellington Sears Handbook of Industrial Textiles”, Ed. Sabit Adanaur, Technimic Publishing Company, Inc., Pennyslavana, USA, 1995.
3. “Engineering with Geosynthetics”, Ed. G V Rao and G V S Raju, Tata McGraw Hill Publishing Co. Ltd., New Delhi, 1990.
4. Geo- Textiles – NWM John.
5. Non- Woven Bonded Fabrics – J. Lunenschloss – W. Albrecht.

# COMPUTER AIDED TEXTILE DESIGN

<b>Subject Code 28605D</b>	<b>Theory</b>			<b>No of Period in one session : 50</b>		
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>	<b>:</b>	<b>100</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>	<b>:</b>	<b>80</b>
	<b>04</b>	<b>-</b>	<b>-</b>	<b>Internal Exam.</b>	<b>:</b>	<b>20</b>

**Rationale:**

Computer Aided Textile Design are much in demand because of its own quality and varieties. The computer aided textile design, therefore, has increased keeping the pace with market demand.

The ‘Computer Aided Textile Design’ is being offered as an elective for those students who are interested in increasing their knowledge and skill in this field. The course is designed for the students to go a bit deep in to the subject which may be useful for their career advancement.

**Objective:**

A student will be able to understand –

- ◆ Concept of computer graphics.
- ◆ Language and their interpreters.
- ◆ Basic concept of design.
- ◆ Realisation of the Algorithm.
- ◆ Programming.

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Concept of Computer Graphics.	(04)
02	Language and their interpreters.	(08)
03	Basic concept of Designs.	(12)
04	Realisation of the Algorithm.	(12)
05	Programming.	(14)
<b>Total :</b>		<b>(50)</b>

**CONTENTS:**

**TOPIC: 01 – CONCEPT OF COMPUTER GRAPHICS: [04]**

- 01.01 Idea about Data Structure, data bases and list handlings. (02)
- 01.02 Picture structure and transformations. (02)

**TOPIC: 02 – LANGUAGE AND THEIR INTERPRETERS: [08]**

- 02.01 Idea about interaction handling, display processor, display file and picture file organisation. (04)
- 02.02 Language concepts of interactive computer graphics. (04)

**TOPIC: 03 – BASIC CONCEPT OF DESIGNS: [12]**

- 03.01 Basic concept of computer aided Textile designs. (02)
- 03.02 Advantages to the system. (01)
- 03.03 Characteristics of the range of computer. (02)
- 03.04 Description of a regular surface pattern, lattice, symmetry elements, point group, plane group. (03)
- 03.05 Basic idea of a general algorithm, the independent motif part, choice of lattice mathematical description of symmetry operations. (04)

**TOPIC: 04 – REALISATION OF THE ALGORITHM:** [12]

- 04.01 Principles of realisation of the algorithm. (02)
- 04.02 Properties. (01)
- 04.03 Limitations. (01)
- 04.04 Comparison of methods. (02)
- 04.05 Programmes. (06)

**TOPIC: 05 – PROGRAMMING:** [14]

- 05.01 Computer programmes of simple woven textile design (plan, Twill). (12)
- 05.02 Principles linking CAP system with production machineries. (02)

**Reference Books:**

- 1. -
- 2. -
- 3. -
- 4. -

# TEXTILE MANAGEMENT

<b>Subject Code 28605E</b>	<b>Theory</b>			<b>No of Period in one session : 50</b>		
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>	<b>:</b>	<b>100</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>	<b>:</b>	<b>80</b>
	<b>04</b>	<b>-</b>	<b>-</b>	<b>Internal Exam.</b>	<b>:</b>	<b>20</b>

**Rationale :**

**Objective:**

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Introduction.	(08)
02	Management and Organisation.	(08)
03	Production, Planning and Control.	(09)
04	Plant Location and Plant Lay Out.	(07)
05	Staffing of Departments.	(08)
06	Theory of Cost and Costing.	(10)
<b>Total :</b>		<b>(50)</b>

**CONTENTS:**

**TOPIC: 01 – INTRODUCTION:** **[08]**

- 01.01 Objects of Textile Management.
- 01.02 A Brief Profile of Indian Textile Industry.
- 01.03 Technocracy and Management.
- 01.04 Industry as a Social System.
- 01.05 Indian Textile Industry and its Importance.
- 01.06 Primary Principles of Textile Industry.
- 01.07 Management Problems of Indian Textile Industry and their remedies.

**TOPIC: 02 – MANAGEMENT AND ORGANISATION:** **[08]**

- 02.01 Definition, Delineation and Description.
- 02.02 Characteristics of Management.
- 02.03 Scientific Management.
- 02.04 General Principles of Management.
- 02.05 Functions of Management.
- 02.06 Organisation.
- 02.07 Principles of Organisation.
- 02.08 Structure of Organisation.

**TOPIC: 03 – PRODUCTION, PLANNING AND CONTROL:** **[09]**

- 03.01 Objects of Production Planning.
- 03.02 Production Resources.
- 03.03 Types of Production System.
- 03.04 Requirements of Planning Section.
- 03.05 Production Control.

- 03.06 Information required by Production Control Section.
- 03.07 Functions of Production Planning and Control.
- 03.08 Relation between Production, Planning and Control.
- 03.09 To determine the number of machines required for producing desired Quantities of end products (Yarns and Fabric).

**TOPIC: 04 – PLANT LOCATION AND PLANT LAY OUT:** [07]

- 04.01 Definition.
- 04.02 Factors determining Plant Layout.
- 04.03 Plant Location – Economic Survey.
- 04.04 Objectives of Plant Layout.
- 04.05 Types of Layouts.

**TOPIC: 05 – STAFFING OF DEPARTMENTS:** [08]

- 05.01 Labour allocation in different departments of a textile mill.
- 05.02 Workload standards for card tenters, Speed frame and Ring frame tenters, Winders, Weavers etc. in the terms of tripartite agreement and Labour Laws.
- 05.03 Nepotism.
- 05.04 Efficiency of Labour.
- 05.05 Factors affecting the efficiency of Labour.

**TOPIC: 06 – THEORY OF COST AND COSTING:** [10]

- 06.01 Definition.
- 06.02 Different types of Costs.
- 06.03 Modern Version of Costs.
- 06.04 Costs and Profit forecasting.
- 06.05 Essential factors in Textile Costing.
- 06.06 Elements of Cost for Textile Industry.
- 06.07 Cost Control.
- 06.08 Control of Wastage of the material.

**Books Recommended :**

- |  |                     |
|--|---------------------|
| 1. Practical Cotton Mill Management.   | - Benjamin.         |
| 2. Textile Technocracy.                | - Darab B. Unwalla. |
| 3. Management of Systems.              | - A. S. Chauhan.    |
| 4. The Textiles.                       | - Madan Gaur.       |
| 5. Costing in Cotton Textile Industry. | - H. K. Verma.      |
| 6. Management of Textile Industry.     | - Dudeja            |

## TEXTILE TESTING LAB - II

<b>Subject Code 28606</b>	<b>Practical</b>			<b>No of Period in one session : 60</b>		
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>	<b>:</b>	<b>50</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>	<b>:</b>	<b>40</b>
	<b>-</b>	<b>-</b>	<b>09</b>	<b>Internal Exam.</b>	<b>:</b>	<b>10</b>

**Rationale :**

Diploma holder technicians in Textile Engineering is very frequently require to test the sample for these properties and purposes.

The course is introduced to develop the skill to yarn testing, fabric testing and everness testing for better understanding of the subject.

**Objective :**

Able to develop skill to :-

- ◆ Yarn testing for single yarn strength, ply yarn's structure, abrasion on yarn strength, work of rupture, crimp in the yarn.
- ◆ Fabric testing for bursting strength, abrasion strength, tearing strength, crease recovery, percentage shrinkage.
- ◆ Everness Testing of yarn & roving.

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Yarn Testing.	(19)
02	Fabric Testing.	(31)
03	Everness Testing.	(10)
<b>Total:-</b>		<b>(60)</b>

**CONTENTS:**

**TOPIC: 01 – YARN TESTING:** **[19]**

- 01.01 Determination of strength of single yarn by using single thread strength tester.
- 01.02 Determination of Bundle strength of yarn using Lea Tester.
- 01.03 Determination of ply yarn's structure.
- 01.04 Determination of the influence of abrasion on yarn strength.
- 01.05 Determination of work of rupture using Ballestic tester.
- 01.06 Determination of crimp by using crimp tester.
- 01.07 Determination of tenacity work of rupture and strain & stress curke of cotton yarns inclined plane tester.

**TOPIC: 02 – FABRIC TESTING:** **[31]**

- 02.01 Determination of the bursting strength of fabric.
- 02.02 Determination of Abrasion Resistance of fabric.
- 02.03 Determination of the fabric tearing strength by single tongue, double tongue Trapezoid, Nail, snage method.
- 02.04 Determination of the crease recovery of snage method.
- 02.05 Determination of the percentage shrinking of the given bleached cloth.
- 02.06 Determination of draping Duality of fabric.
- 02.07 Determination of colour fastness to Rubbing using crock mates.
- 02.08 Determination of the wettability of fabric using spray Testes.

**TOPIC: 03 – EVERNESS TESTING:** **[10]**

- 03.01 Determination of Visual examination of yarn for everness and gradings.
- 03.02 Determination of the yarn and roving everness by using fielden walker everness tester.

## TEXTILE CHEMISTRY LAB - II

<b>Subject Code 28607</b>	<b>Practical</b>			<b>No of Period in one session : 60</b>		
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>	<b>:</b>	<b>50</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>	<b>:</b>	<b>40</b>
	<b>-</b>	<b>-</b>	<b>09</b>	<b>Internal Exam.</b>	<b>:</b>	<b>10</b>

### Rationale :

Diploma holder technicians in Textile Engineering is very frequently require to dye natural and manmade fibre, print the fabric for their proper use.

The course is introduced to develop the skill to dye natural and manmade fibre, print the cotton fabric for better understanding of the subject.

### Objective :

Able to develop skill to :-

- ◆ Dye cotton with vat, Azoic and Reactive dyes.
- ◆ Dye polyester and polyamide with Disperse dye.
- ◆ Print the cotton fabric by different styles.

<u>S.No.</u>	<u>Topics</u>	<u>Periods</u>
01	Dyeing.	(42)
02	Printing.	(12)
03	Identification.	(06)
<b>Total:-</b>		<b>(60)</b>

### CONTENTS:

#### TOPIC: 01 – DYEING:

**[42]**

- |       |   |      |
|-------|---|------|
| 01.01 | Dyeing of five shade with vat colour on cotton. (0.5%, 0.8% 1.0%, 1.2%, 1.5%) using all three methods (IN, IW, IK). | (06) |
| 01.02 | Dyeing of three shade with solubalised vat colour (0.5%, 1.5%, 2%).   | (03) |
| 01.03 | Dyeing of two shade of cotton with Aniline black (0.8%, 1.2%).  | (03) |
| 01.04 | Dyeing of cotton with Azoic dyes (4 samples of different shades 0.5%, 0.8%, 1.2%, 1.5%).                            | (06) |
| 01.05 | Dyeing of cotton with Reactive dyes (4 Sample of different shade 0.5%, 0.8%, 1.2%, 1.5%).                           | (03) |
| 01.06 | Dyeing of Polyester fibre with Disperse dyes (4 Sample of different shade 0.8%, 1%, 1.2%, 1.5%).                    | (06) |
| 01.07 | Dyeing of Polyamide fibre with Disperse dyes (4 Sample of different shade 0.5%, 0.8%, 1.2%, 1.5%).                  | (03) |
| 01.08 | Dyeing of Polyamide fibre with Acid dyes (4 Sample of different shade 0.8%, 1.0%, 1.2%, 1.5%).                      | (03) |
| 01.09 | Dyeing of Acetate rayon with Disperse dyes (4 Sample of different shade 0.5%, 1.2%, 1.5%, 1.8%).                    | (03) |
| 01.10 | To study the effect of Time, temperature, concentration of chemicals, exhaustion etc. during dyeing.                | (03) |
| 01.11 | Dyeing of blended fabrics and garments.   | (03) |

#### TOPIC: 02 – PRINTING:

**[12]**

- |       |   |      |
|-------|---|------|
| 02.01 | To study about different styles of printing (Direct, Resist and Discharge style). | (06) |
| 02.02 | To study about Pigment printing.  | (03) |
| 02.03 | To study about Rotary Screen Printing.  | (03) |

#### TOPIC: 03 – IDENTIFICATION:

**[06]**

- |       |                                       |      |
|-------|---------------------------------------|------|
| 03.01 | To identify the different dye stuff.  | (04) |
| 03.02 | To identify the different dyed goods. | (02) |

## PROFESSIONAL STUDIES & ENTREPRENEURSHIP

<b>Subject Code</b> <b>00607</b>	<b>Sessional</b>			<b>No of Period in one session : 50</b>		
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>	<b>:</b>	<b>50</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>	<b>:</b>	<b>30</b>
	<b>-</b>	<b>-</b>	<b>04</b>	<b>Internal Exam.</b>	<b>:</b>	<b>20</b>

### Rationale:

The paper has been introduced to achieve dual purpose for the students.

Firstly, this course provides the basics of Professional management and secondly it also prepares the student to undertake independent venture by becoming an entrepreneur.

This makes them conversant with their duties and responsibility to make them successful in their career building.

### Objectives:

With the input provided in this paper, the students will be able to :-

- Acquire basic knowledge of management.
- Understand the area of management such as human resources, marketing, finance and commercial aspect.
- Understand the benefit of becoming an entrepreneur.
- Handle a project efficiently and in dependently.

### To prepare a Project Report on any of the followings:

<u>S.No.</u>	<u>Topics</u>
01	Project Identification and formulation Report.
02	Project Profile/Pre-feasibility Report.
03	Techno-economical Feasibility Report (TEFR).
04	Market Survey Report.

### CONTENTS

#### S.NO.                      TOPICS

#### TOPIC – 01 : PROJECT IDENTIFICATION AND FORMULATION REPORT:

- ◆ Introduction.
- ◆ Collection of Data.
- ◆ Compilation of Data.
- ◆ Analysis and Assimilation of Data.
- ◆ Product Selection.
- ◆ Report Finalisation and Report Writing.

#### TOPIC - 02 : PROJECT PROFILE/PRE-FEASIBILITY REPORT :

- ◆ Introduction of the product.
- ◆ Market.
- ◆ Man Power (Personnel Required).
- ◆ Manufacturing Process.
- ◆ Plant and Machinery.
- ◆ Cost of Project.



- ◆ Means of Finance.
- ◆ Cost of Production.
- ◆ Annual Turnover.
- ◆ Profit.
- ◆ Profit on Investment.

**TOPIC – 03: TECHNO-ECONOMICAL FEASIBILITY REPORT (TEFR).**

- ◆ Introduction on product.
- ◆ Market Prospects and Marketing.
- ◆ Location.
- ◆ Manufacturing Programme and Annual Turnover.
- ◆ Manufacturing Process.
- ◆ Cost of Project.
- ◆ Means of Finance.
- ◆ Requirement of Raw materials, Consumables, Utilities and Working Capital.
- ◆ Organisational Structure, Management and Man Power.
- ◆ Project Implementation Schedule.
- ◆ Profitability and Cash Flow.

**TOPIC - 04 : MARKET SURVEY REPORT:**

- ◆ Data Collection & Processing through Primary & Secondary Sources- Questionnaire method, e-mail, by post, by phone.
- ◆ Present Status.
- ◆ Growth of the Industry.
- ◆ Import and Export.
- ◆ Present market Demand.
- ◆ Forecast.
- ◆ Future Prospect/Scope.
- ◆ Market Segmentation.

**Books Recommended:**

1. Essential of Management, Tata McGraw Hill, - Herald Koonz & Cyril O' Donnel. Publishing Company Ltd., New Delhi.
2. Business Organisation and Management, S. C. Chand - M. C. Shukla and Company (Pvt.) Ltd., Ram Nagar, New Delhi
3. Managerial Economics, Sultan Chand & Sons, New - R. L. Vashney & K. L. Maheshwari Delhi
4. Project Appraisal and Follow up, Govind Prakashan, - D. P. Sharda Mumbai.
5. Modern Marketing Management, Progressive - Dr. Rustam S. Davar Corporation Pvt. Ltd., P51, Mahatma Gandhi Road, Bombay-400 001

6. A hand book for new entrepreneurs (with special reference to science and technology target group) - Entrepreneurship Development Institute of India, 83-A, Swastic Society Navrangpura, Ahmedabad, PIN-380 009.
7. Student discipline - Published by I.S.T.E. Mysore
8. Communication Skill - Published by I.S.T.E. Mysore
9. Decision Making - Published by I.S.T.E. Mysore
10. Pollution Control in Industry - Published by I.S.T.E. Mysore
11. S.S.M. in Environmental Engineering - Published by I.S.T.E. Mysore
12. Leadership in Organisation - Published by I.S.T.E. Mysore
13. Small Enterprise Management - Published by I.S.T.E. Mysore
14. Motivation - Published by I.S.T.E. Mysore
15. Fundamentals of Environmental Pollution - Krishnan and Kannan
16. Environmental Engineering, T.T.T.I., Madras - Tata Mcgraw Hill
17. Motivation I.I.T. Kanpur - Published by I.S.T.E. Mysore
18. Mine Management - V.N. Singh, Bangle Prining Press Ranchi
19. Hand book on Project Appraisal and follow up, Govind Prakashan, 204, Saraswati Kunj, 90, S. V. Road, Goregoan, Bombay-400 062. - D. P. Sarda
20. Bihar Industrial Policy - Government of Bihar, Department of Industries.
21. Entrepreneurship Guide - Bihar State Financial Corporation, Fraser Road, Patna-800 001.
22. Management Economics, S. Chand & Sons, 4792/23, Dariaganj, New Delhi-110 002. - R. L. Varshney & G. L. Maheshwari
23. Management Principles & Practices, S. Chand & Sons, 4792/23, Dariaganj, New Delhi-110002. - L. Prasad & S. S. Gulshan

# PROJECT WORK AND ITS PRESENTATION IN SEMINAR

Subject Code 28609	Sessional			No of Period in one session :			
	No. of Periods Per Week			Full Marks		:	100
	L	T	P/S	Annual Exam.	:	60	
	-	-	-	Internal Exam.	:	40	

## Rationale :

The Project work and its presentation in seminar is an important subject for a diploma holder technician in Textile Engineering. The course is designed to help a student to develop confidence, skill in report writing, skill to analyse, deciding a process etc. The course will also help in developing communication skill, and skill of quality documentation.

## Objective:

A student will be able to:

- Identify a Problem.
- Analyse the Problem.
- Develop logical approach to solution of a Problem.
- Design of a product.
- Manufacture the product in – Textile Mill or Workshop.
- Test the product for its Quality.
- Prepare a project report (Computer printed / typed)
- Present in the form of Seminar.

## CONTENTS

01	Blending Polyester with cotton at different blending ratio.
02	Blending Polyester with viscose at different blending ratio.
03	Blending Silk with cotton at different blending ratio.
04	Silk Waste is processed in cotton system.
05	Modern Textile Design.
06	Problems related to Quality Control.
07	Problems related to Weaving Section.
08	Regarding Automatic looms.
09	Regarding fabric defects.
10	Other Similar Problems.

## **REPORT WRITING:**

A report must include

<u>S.No.</u>	<u>Topics</u>
01	Introduction.
02	Blends.
03	Fibre Selection.
04	Selection of Blends.
05	Spinning Process.
06	Experimental Work.
07	Own Experience.
08	Results and Discussion.
09	Scope for further Work.

**OR**

The Project Report should consist of :-

01	Introduction.
02	Problem statement.
03	Background.
04	Organisational set –up.
05	Plant Layout.
06	Reasons for Selecting a problem.
07	Analysis of Problem.
08	Best solution possible.
09	Any other.

Project Work/Project Report should be presented in the form of a Seminar for developing confidence and communication Skill among the students.

### **NOTE:-**

Project work will be allotted to the students just in the beginning of the session. Each student will be give a separate work under the supervision of a teacher. Total number of students may be divided among the number of teachers available. The teacher concerned will select separate problem for each student under him and allot it to him at the beginning of the session. The work allotted should be completed within scheduled time. i.e. by the end of the session. Problems selected should preferably conform to the syllabus. If it is outside of the syllabus then it must be within the field of Textile Engineering.