DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY
(TEXTILE DESIGN & WEAVING)

COURSE CODE : 1224

II YEAR / III YEAR

M -SCHEME

2015 – 2016 onwards

CURRICULAM DEVELOPMENT CENTRE

DIPLOMA IN TEXTILE TECHNOLOGY
(TEXTILE DESIGN & WEAVING)

Chairperson
Tmt. S. Madumathi, I.A.S.,
Director,
Directorate of Technical Education
Chennai – 600 025.

Coordinator
Dr. R. VenkatRaj,
Principal,
PACR Polytechnic College,
Rajapalayam – 626 108.

Convener
Thiru. S.R. Sampathu,
Principal In-charge,
EIT Polytechnic College,
Kavindapadi – 638455.

MEMBERS

S. Kumaravel HOD / Tex.Tech (Knitting.Tech) EIT Polytechnic College Kavindapadi – 638455	**M. Sathyan** Lecturer Sr.Gr./Tex.Tech (Knitting Tech)) EIT Polytechnic College Kavindapadi - 638455
N.R.Varadarajan Lecturer Sel.Gr. / Tex. Processing EIT Polytechnic College Kavindapadi - 638455	**Dr.R.Murugan** Associate Professor (Tex.Tech) P.S.G.College of Technology Coimbatore - 641004
S.Ramsubbu HOD / Tex.Tech(Designing & Wvg) SSM Polytechnic College Komarapalayam – 638183	**S.Shanmugasundaram** General Manager-Operations S.P.Apparels Ltd 39 a, Extension Street Avinashi - 641654
A.Edwin sunder Lecturer Sel.Gr / Tex. Processing SSM Polytechnic College Komarapalayam – 638183	**N.Saravanan** Head – Supply Chain Bodyline Private Limited& Intimate Fashion Private Limited Tiruporur-Kottamedu High Road Guduvancherry Chennai-603202

DIPLOMA COURSES IN ENGINEERING/TECHNOLOGY
(SEMESTER SYSTEM)

(Implemented from 2015- 2016)

M – SCHEME

R E G U L A T I O N S*

***** *Applicable to the Diploma Courses other than Diploma in Hotel Management & Catering Technology and the Diploma Courses offered through MGR Film Institute, Chennai.*

1. Description of the Course:

a. Full Time (3 years)

The Course for the full Time Diploma in Engineering shall extend over a period of three academic years, consisting of 6 semesters* and the First Year is common to all Engineering Branches.

b. Sandwich (3½ years)

The Course for the Diploma in Engineering (sandwich) shall extend over a period of three and half academic years, consisting of 7 semesters* and the First Year is common to all Engineering Branches. The subjects of three years full time diploma course being regrouped for academic convenience.

During 4th and/or during 7th semester the students undergo industrial training for six months/ one year. Industrial training examination will be conducted after completion of every 6 months of industrial training

c. Part Time (4 years)

The course for the diploma in Engineering shall extend over a period of 4 academic years containing of 8 semesters*, the subjects of 3 year full time diploma courses being regrouped for academic convenience.

* Each Semester will have 15 weeks duration of study with 35 hrs. /Week for Regular Diploma Programme and 18hrs/ week (21 hrs. / Week I year) for Part-Time Diploma Programmes.

The Curriculum for all the 6 Semesters of Diploma courses (Engineering & Special Diploma Courses viz. Textile Technology, Leather Technology, Printing Technology, Chemical Technology etc.) have been revised and revised curriculum is applicable for the candidates admitted from 2015 – 2016 academic year onwards.

2. Condition for Admission:

Condition for admission to the diploma courses shall be required to have passed in

The S.S.L.C Examination of the Board of Secondary Education, TamilNadu.

(Or)

The Anglo Indian High School Examination with eligibility for Higher Secondary Course in TamilNadu.

(Or)

The Matriculation Examination of Tamil Nadu.

(Or)

Any other Examination recognized as equivalent to the above by the Board of Secondary Education, TamilNadu.

Note: In addition, at the time of admission the candidate will have to satisfy certain minimum requirements, which may be prescribed from time to time.

3. Admission to Second year (Lateral Entry):

A pass in HSC (Academic) or (Vocational) courses mentioned in the Higher Secondary Schools in TamilNadu affiliated to the TamilNadu Higher Secondary Board with eligibility for university Courses of study or equivalent examination, & Should have studied the following subjects.

Sl. No	Courses	H.Sc Academic	H.Sc Vocational	
		Subjects Studied	Subjects Studied	
			Related subjects	Vocational subjects
1.	All the Regular and Sandwich Diploma Courses	Maths, Physics & Chemistry	Maths / Physics / Chemistry	Related Vocational Subjects Theory & Practical
2.	Diploma course in Modern Office Practice	English & Accountancy English & Elements of Economics English & Elements of Commerce	English & Accountancy, English & Elements of Economics, English & Management Principles & Techniques, English & Typewriting	Accountancy & Auditing, Banking, Business Management, Co-operative Management, International Trade, Marketing & Salesmanship, Insurance & Material Management, Office Secretaryship.

- For the diploma Courses related with Engineering/Technology, the related / equivalent subjects prescribed along with Practical may also be taken for arriving the eligibility.

- Branch will be allotted according to merit through counseling by the respective Principal as per communal reservation.

- For admission to the Textile Technology, Leather Technology, Printing Technology, Chemical Technology and Modern Office Practice Diploma courses the candidates studied the related subjects will be given first preference.

- *Candidates who have studied Commerce Subjects are not eligible for Engineering Diploma Courses.*

4. Age Limit: No Age limit.

5. Medium of Instruction: English

6. Eligibility for the Award of Diploma:

No candidate shall be eligible for the Diploma unless he/she has undergone the prescribed course of study for a period of not less than 3 academic years in any institution affiliated to the State Board of Technical Education and Training, TamilNadu, when joined in First Year and two years if joined under Lateral Entry scheme in the second year and passed the prescribed examination.

The minimum and maximum period for completion of Diploma Courses are as given below:

Diploma Course	Minimum Period	Maximum Period
Full Time	3 Years	6 Years
Full Time(Lateral Entry)	2 Years	5 Years
Sandwich	3½ Years	6½ Years
Part Time	4 Years	7 Years

7. Subjects of Study and Curriculum outline:

The subjects of study shall be in accordance with the syllabus prescribed from time to time, both in theory and practical. The curriculum outline is given in Annexure **- I**

8. Examinations:

Board Examinations in all subjects of all the semesters under the scheme of examinations will be conducted at the end of each semester.

The Internal assessment marks for all the subjects will be awarded on the basis of continuous internal assessment earned during the semester concerned. For each subject 25 marks are allotted for internal assessment and 75 marks are allotted for Board Examination.

9. Continuous Internal Assessment:

A . For Theory Subjects:

The Internal Assessment marks for a total of 25 marks, which are to be distributed as follows:

i. Subject Attendance **5 Marks**

(Award of marks for subject attendance to each subject theory/practical will as per the range given below)

80% - 83%	)	1 Mark
84% - 87%		2 Marks
88% - 91%		3 Marks
92% - 95%		4 Marks
96% - 100%		5 Marks

ii) Test # **10 Marks**

2 Tests each of 2 hours duration for a total of 50 marks are to be conducted. Out of which the best one will be taken and the marks to be reduced to: 05 marks

The Test – III is to be the Model test covering all the five units and the marks so obtained will be reduced to : 05 marks

Total **10 marks**

TEST	UNITS	WHEN TO CONDUCT	MARKS	DURATION
Test I	Unit – I & II	End of 6th week	50	2 Hrs
Test II	Unit – III & IV	End of 12th week	50	2 Hrs
Test III	**Model Examination** - **Compulsory** Covering all the 5 Units. (Board Examination-question paper-pattern).	End of 15th week	75	3 Hrs

 # - From the Academic year 2015-2016 onwards.

Question Paper Pattern for the Periodical Test :(Test - I & Test- II)

With no choice:

PART A type questions:	4 Questions X 2 mark	… … 8 marks
PART B type questions:	4 Questions X 3 marks	… … 12 marks
PART C type questions:	3 Questions X 10 marks	… … 30 marks

	Total	50 marks
		----------

iii) Assignment **10 Marks**

For each subject Three Assignments are to be given each for 20 marks and the average marks scored should be reduced for 10 marks

All Test Papers and assignment notebooks after getting the signature with date from the students must be kept in the safe custody in the Department for verification and audit. It should be preserved for 2 Semesters and produced to the flying squad and the inspection team at the time of inspection/verification.

B. For Practical Subjects:

The internal assessment mark for a total of 25 marks which are to be distributed as follows:-

a)	Attendance (Award of marks as same as Theory subjects)	:	**5 Marks**
b)	Procedure/ observation and tabulation/ Other Practical related Work	:	**10 Marks**
c)	Record writing	:	**10 Marks**

	TOTAL	:	**25 Marks**

- *All the Experiments/exercises indicated in the syllabus should be completed and the same to be given for final board examinations.*
- The Record for every completed exercise should be submitted in the subsequent Practical classes and marks should be awarded for 20 for each exercise as per the above allocation.
- At the end of the Semester, the average marks of all the exercises should be calculated for 20 marks and the marks awarded for attendance is to be added to arrive at the internal assessment mark for Practical. (20+5=25 marks)
- The students have to submit the duly signed bonafide record note book/file during the Practical Board Examinations.

- *All the marks awarded for assignment, Test and attendance should be entered in the Personal Log Book of the staff, who is handling the subject. This is applicable to both Theory and Practical subjects.*

10. Life and Employability Skill Practical:

The Life and Employability Skill Practical with more emphasis is being introduced in IV Semester for Circuit Branches and in V Semester for other branches of Engineering.
Much Stress is given to increase the employability of the students:

Internal assessment Mark **….. 25 Marks**

11. Project Work:

The students of all the Diploma Programmes **(except Diploma in Modern Office Practice)** have to do a Project Work as part of the Curriculum and in partial fulfillment for the award of Diploma by the State Board of Technical Education and Training, Tamilnadu. In order to encourage students to do worthwhile and innovative projects, every year prizes are awarded for the best three projects i.e. institution wise, region wise and state wise. **The Project work must be reviewed twice in the same semester.**

a) Internal assessment mark for Project Work & Viva Voce:

Project Review I	…	**10 marks**
Project Review II	…	**10 marks**
Attendance	…	**05 marks** (award of marks same as theory subjects pattern)
Total	…	**25 marks**

Proper record to be maintained for the two Project Reviews, and It should be preserved for 2 Semesters and produced to the flying squad and the inspection team at the time of inspection/verification.

b) Allocation of Mark for Project Work & Viva Voce in Board Examination:

Viva Voce	…	**30 marks**
Marks for Report Preparation, Demo	…	**35 marks**
Total		**65 marks**

c) Written Test Mark (from 2 topics for 30 minutes duration): $

i) Environment Management	2 questions X 2 ½ marks	= **5 marks**
iI) Disaster Management	2 questions X 2 ½ marks	= **5 marks**
		10marks

$ **-** Selection of Questions should be from Question Bank, by the External Examiner.

No choice need be given to the candidates.

Project Work & Viva Voce in Board Examination	--	**65 Marks**
Written Test Mark (from 2 topics for 30 minutes duration)	--	**10 Marks**
TOTAL	--	**75 Marks**

A neatly prepared PROJECT REPORT as per the format has to be submitted by individual during the Project Work & Viva Voce Board examination.

12. Scheme of Examinations:

The Scheme of examinations for subjects is given in **Annexure - II.**

13. Criteria for Pass:

1. No candidate shall be eligible for the award of Diploma unless he/she has undergone the prescribed course of study successfully in an institution approved by AICTE and affiliated to the State Board of Technical Education & Training, Tamil Nadu and pass all the subjects prescribed in the curriculum.

2. A candidate shall be declared to have passed the examination in a subject if he/she secures not less than *40% in theory subjects* and *50% in practical subject* out of the total prescribed maximum marks including both the internal assessment and the Board Examination marks put together, subject to the condition that he/she secures at least a minimum of *30 marks out of 75 marks in the Board's Theory examinations and a minimum of 35 marks out of 75 marks in the Board Practical Examinations.*

14. Classification of successful candidates:

Classification of candidates who will pass out the final examinations from April 2018 onwards (Joined in first year in 2015-2016) will be done as specified below.

First Class with Superlative Distinction:

A candidate will be declared to have passed in **First Class with Superlative Distinction** if he/she secures not less than 75% of the marks in all the subjects and passes all the semesters in the first appearance itself and passes all subjects within the stipulated period of study 3/ 3½/ 4 years (Full Time/Sandwich/Part Time) without any break in study.

First Class with Distinction:

A candidate will be declared to have passed in **First Class with Distinction** if he/she secures not less than 75% of the aggregate of marks in all the

semesters put together and passes all the semesters except the I and II semesters in the first appearance itself and passes all the subjects within the stipulated period of study 3/ 3½/ 4 years (Full Time/Sandwich/Part Time) without any break in study.

First Class:

A candidate will be declared to have passed in **First Class** if he/she secures not less than 60% of the aggregate marks in all semesters put together and passes all the subjects within the stipulated period of study 3/ 3½ / 4 years (Full Time/Sandwich/Part Time) without any break in study.

Second Class:

All other successful candidates will be declared to have passed in **Second Class.**

The above mentioned classifications are also applicable for the Sandwich / Part-Time students who pass out Final Examination from October 2018 /April 2019 onwards (both joined in First Year in 2015-2016)

15. Duration of a period in the Class Time Table:

The duration of each period of instruction is 1 hour and the total period of instruction hours excluding interval and Lunch break in a day should be uniformly maintained as 7 hours corresponding to 7 periods of instruction (Theory & Practical).

16. Seminar:

For seminar the total seminar 15 hours(15 weeks x 1hour) should be distributed equally to total theory subject per semester(i.e 15 hours divided by 3/4 subject). A topic from subject or current scenario is given to students. During the seminar hour students have to present the paper and submit seminar material to the respective staff member, who is handling the subject. It should be preserved for 2 Semesters and produced to the flying squad and the inspection team at the time of inspection/verification.

-xXx-

.

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

SIGNIFICANCE OF THE COURSE

Diploma in Textile Technology (Textile Design & Weaving) is a uniquecourse designed to produce the students, who will fulfill the requirements of textile designing and weaving industries. This course offers ample scope for the students to become weaving specialists with designing expertise. The syllabus of the course covers ancient art and freehand art, different styles and techniques of printing, printed designs using software, woven designs for apparels, home furnishings, jacquard designing, textile testing , textile wet processing ,technology of yarn manufacture and technical textiles. As regards weaving, all the aspects of weaving from plain power loom to the latest shuttleless weaving machines are included. Despite the inclusion of the above subjects , an elective in the name of modern weaving technology is chosen for the students to gain knowledge and make them abreast of the latest shuttle less weaving techniques which is the need of the hour.

In “M” scheme of syllabus, besides all the above features practical exposure is also given to the students in spinning, garment manufacturing and wet processing areas. This enables the students to get job opportunities in any segment of present textile industry.

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

INTRODUCTION

The 3-year Full-Time Diploma programme in Textile Technology (Textile Design & Weaving) was introduced in S.S.M. Polytechnic College, Komarapalayam in the year 1980 by Directorate of Technical Education, Chennai. The programme was introduced with the aim of creating technical manpower to meet the needs of the Textile Designing & Weaving Industries.

Diploma in Textile Technology (Textile Design & Weaving) deals with

i) Designing for Dobby, Jacquard and Printed fabrics.

ii) Various technologies of fabric manufacture from Conventional weaving to Shuttleless weaving.

A student of this course will gain fair knowledge on Textile Designing and converting this knowledge of designing into fabric. Textile Designing is a value addition to the fabric which enhances the fabric saleability in the market. To cope up with the above and present market scenario, the students are trained in Computer Aided Textile Designing and softwares.Also the students are trained in all the aspects of Shuttleless Weaving Machines.

The curriculum for I year is common with the other diploma programmes. The present revised syllabus which will be followed from 2016-2017III semester batch onwards.

Now, in the present syllabus emphasis is given to various subjects, so as to enable students to get good placements in various textile arenas. The curriculum also emphasis industrial exposure and relevance to industrial needs.

The syllabus sub-committee, after lots of deliberations have proposed and drafted the new syllabus which has the following features:

i) The subjects are enriched and updated in the area of the specialization with the able guidance of the expert members
ii) Topics of industrial importance and relevance are included in the syllabus
iii) To improve the communication skill of the final year students to facilitate them to attend interview in a better manner, communication skills practical subject is introduced in V semester.

This New Syllabus under 'M' Scheme is to be followed by the students admitted in first year in the academic year 2015-2016.

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

COURSE OBJECTIVES:

Presently, there are artists who do create designs, but do not know the intricacy of converting or applying them onto the fabric.Similarly there are weaving technicians available who are lacking in textile designing. This course aims to bridge the gap between weaving technicians and artists by the way of imparting knowledge on both textile designing and modern weaving techniques. As such this course is a unique one aiming at providing balanced knowledge on textile design and weaving technology.

The candidate who completes the course can either become a Textile Designer or a Weaving technician depending upon their interest.

Realizing the importance of Computer Aided Textile Designing, the same is included in the practical. Subjects on Garment manufacture and Textile wet processing are included for better job opportunities of the students. A New elective subject is introduced in the final semester, exclusively on the latest modern weaving technology. The students will also be trained in latest Shuttleless weaving machines in the practical subject viz., Modern weaving technology.

The syllabus is drafted in such a manner that a candidate of this course can become

i) **Designer for woven , printed fashion and home textiles**
ii) **Weaving Supervisor /Technocrat**
iii) **Fabric quality assessor for exports**
iv) **Fabric Trader / Sourcing agents in buying market**
v) **Fabric coordinator / Fabric merchandiser for garment making**

And he / she can

vi) **Establish his / her own Weaving factory**
vii) **Establish his/ her own Design studio and develop design software**
vii) **Establish his / her own fabric export house**
viii) **Establish his / her own garment factory**
ix) **Establish his / her own dyeing / printing factory**

ANNEXURE-I

CURRICULUMOUTLINE

FIRSTSEMESTER

S.No.	SUBJECT	HOURS PERWEEK				
		Theory Hours	Drawing	Tutorial	Practical hours	Total Hours
30011	CommunicationEnglish-I	5	-	-	-	5
30012	EngineeringMathematics-I	8	-	-	-	8
30013	EngineeringPhysics-I	5	-	-	-	5
30014	EngineeringChemistry-I	5	-	-	-	5
30015	EngineeringGraphics-I	-	5	-	-	5
30016	Engineering Physics-IPractical	-	-	-	2	2
30017	EngineeringChemistry-I Practical	-	-	-	2	2
30018	WorkshopPractice	-	-	-	3	3
TOTAL		23	5	-	7	35

SECONDSEMESTER

S.No.	SUBJECT	HOURS PERWEEK				
		Theory Hours	Drawing	Tutorial	Practical hours	Total Hours
30021	CommunicationEnglish-II	5	-	-	-	5
30022	EngineeringMathematics-II	5	-	-	-	5
30023	AppliedMathematics	5	-	-	-	5
30024	EngineeringPhysics-II	5	-	-	-	5
30025	EngineeringChemistry-II	5	-	-	-	5
30026	EngineeringGraphics-II	-	6	-	-	6
30027	Engineering Physics-IIPractical	-	-	-	2	2
30028	EngineeringChemistry-II Practical	-	-	-	2	2
TOTAL		25	6	-	4	35

III SEMESTER

Subject Code	SUBJECT	HOURS PER WEEK			
		Theory Hours	Tutorial / Drawing	Practical hours	Total Hours
36031	Fibre Science and Technology *	5	-	-	5
36332	Ancient Art & Printed Textile Designs	5	-	-	5
36033	Fabric Manufacture – I *	5	-	-	5
36334	Ancient Art & Printed Textile Designs Practical	-	-	5	5
36335	Basics of Textile Design Practical	-	-	5	5
36336	Fabric Manufacture – I Practical	-	-	5	5
30001	Computer Applications Practical **	-	-	4	4
Seminar		1	-	-	1
Total		16	-	19	35

IV SEMESTER

Subject Code	SUBJECT	HOURS PER WEEK			
		Theory Hours	Tutorial / Drawing	Practical hours	Total Hours
36141	Technology of Yarn Manufacture#	5	-	-	5
36342	Colour and Weave Effects	5	-	-	5
36043	Fabric Manufacture – II *	5	-	-	5
36044	Elementary Textile Designs *	5	-	-	5
36345	Colour and Weave Effects Practical	-	-	4	4
36346	Fabric Manufacture – II Practical	-	-	5	5
36347	Elementary Textile Designs Practical	-	-	5	5
Seminar		1	-	-	1
Total		21	-	14	35

 # Common with Diploma in Textile Processing
*** Common with Diploma in Textile Technology**
*** * Common to all branches**

V SEMESTER

Subject Code	SUBJECT	HOURS PER WEEK			
		Theory Hours	Tutorial / Drawing	Practical hours	Total Hours
36051	Textile Testing *	5	-	-	5
36052	Textile Wet Processing *	5	-	-	5
36053	Advanced Textile Designs*	5	-	-	5
36371 36072	Elective: 1.Jacquard Designs for Home & Apparels 2.Technical Textiles *	5	-	-	5
36355	Textile Testing Practical	-	-	5	5
36356	Textile Wet Processing Practical	-	-	5	5
30002	Life and Employability Skill Practical **	-	-	4	4
Seminar		1	-	-	1
Total		21	-	14	35

VI SEMESTER

Subject Code	SUBJECT	HOURS PER WEEK			
		Theory Hours	Tutorial / Drawing	Practical hours	Total Hours
36061	Textile Management *	5	-	-	5
36062	Garment Manufacture*	5	-	-	5
36381 36382	Elective: 1.Modern Weaving Technology 2.Application of Electronics in Weaving	5	-	-	5
36364	Garment Manufacture Practical	-	-	5	5
36365	Jacquard Designs for Home & Apparels Practical	-	-	5	5
36366	Modern Weaving Technology Practical	-	-	5	5
36367	Project Work	-	-	4	4
Seminar		1	-	-	1
Total		16	-	19	35

* Common with Diploma in Textile Technology

** Common to all branches of Diploma courses

ANNEXURE -II

SCHEME OF THEEXAMINATION

FIRST SEMESTER

S.No	SUBJECT	ExaminationMarks			Minimum forpass	Durationof ExamHours
		Internal assess ment Marks	Board Exam. Marks	Total Mark		
30011	CommunicationEnglish-I	25	75	100	40	3
30012	EngineeringMathematics-I	25	75	100	40	3
30013	EngineeringPhysics-I	25	75	100	40	3
30014	EngineeringChemistry-I	25	75	100	40	3
30015	EngineeringGraphics-I	25	75	100	40	3
30016	Engineering Physics-IPractical	25	75	100	50	3
30017	Engineering Chemistry-IPractical	25	75	100	50	3
30018	WorkshopPractice	25	75	100	50	3
TOTAL		200	600	800		

SECONDSEMESTER

S.No.	SUBJECT	ExaminationMarks			Minimum forpass	Durationof ExamHours
		Internal assessment Marks	Board Exam Marks	Total Mark		
30021	CommunicationEnglish-II	25	75	100	40	3
30022	EngineeringMathematics-II	25	75	100	40	3
30023	AppliedMathematics	25	75	100	40	3
30024	EngineeringPhysics-II	25	75	100	40	3
30025	EngineeringChemistry-II	25	75	100	40	3
30026	EngineeringGraphics-II	25	75	100	40	3
30027	Engineering Physics-IIPractical	25	75	100	50	3
30028	Engineering Chemistry-IIPractical	25	75	100	50	3
TOTAL		200	600	800		

III SEMESTER

Subject Code	SUBJECT	Examination Marks			Minimum for pass	Duration of Exam Hours
		Internal assess-ment Marks	Board Exam. Marks	Total Mark		
36031	Fibre Science and Technology *	25	75	100	40	3
36332	Ancient Art & Printed Textile Designs	25	75	100	40	3
36033	Fabric Manufacture – I *	25	75	100	40	3
36334	Ancient Art & Printed Textile Designs Practical	25	75	100	50	3
36335	Basics of Textile Design Practical	25	75	100	50	3
36336	Fabric Manufacture – I Practical	25	75	100	50	3
30001	Computer Application Practical **	25	75	100	50	3
		175	525	700		

IV SEMESTER

Subject Code	SUBJECT	Examination Marks			Minimum for pass	Duration of Exam Hours
		Internal assess-ment Marks	Board Exam Marks	Total Mark		
36141	Technology of Yarn Manufacture #	25	75	100	40	3
36342	Colour and Weave Effects	25	75	100	40	3
36043	Fabric Manufacture – II *	25	75	100	40	3
36044	Elementary Textile Designs *	25	75	100	40	3
36345	Colour and Weave Effects Practical	25	75	100	50	3
36346	Fabric Manufacture – II Practical	25	75	100	50	3
36347	Elementary Textile Designs Practical	25	75	100	50	3
TOTAL		175	525	700		

\# Common with Diploma in Textile Processing
* Common with Diploma in Textile Technology
* * Common to all branches of diploma

V SEMESTER

Subject Code	SUBJECT	Examination Marks			Minimum for pass	Duration of Exam Hours
		Internal assess-ment Marks	Board Exam. Marks	Total Mark		
36051	Textile Testing *	25	75	100	40	3
36052	Textile Wet Processing *	25	75	100	40	3
36053	Advanced Textile Designs *	25	75	100	40	3
36371 36072	Elective: 1.Jacquard Designs for Home & Apparels 2.Technical Textiles *	25	75	100	40	3
36355	Textile Testing Practical	25	75	100	50	3
36356	Textile Wet Processing Practical	25	75	100	50	3
30002	Life and Employability Skills Practical **	25	75	100	50	3
		175	525	700		

VI SEMESTER

Subject Code	SUBJECT	Examination Marks			Minimum for pass	Duration of Exam Hours
		Internal assess-ment Marks	Board Exam Marks	Total Mark		
36061	Textile Management *	25	75	100	40	3
36062	Garment Manufacture *	25	75	100	40	3
36381 36382	Elective: 1.Modern Weaving Technology 2.Application of Electronics in Weaving	25	75	100	40	3
36364	Garment Manufacture Practical	25	75	100	50	3
36365	Jacquard Designs for Home & Apparels Practical	25	75	100	50	3
36366	Modern Weaving Technology Practical	25	75	100	50	3
36367	Project Work	25	75	100	50	3
TOTAL		175	525	700		

* Common with Diploma in Textile Technology

* * Common to all branches

Diploma in Textile Technology (Textile Design and Weaving) Full time

Alternativesubjects for II year subjects
'L 'scheme to 'M' scheme
III &IV Semesters

EXISTING SCHEME OF SUBJECTS IN L - SCHEME		ALTERNATIVE SUBEJCTS IN THE PROPOSED M – SCHEME	
III Semester W.E.F. OCT '16			
26031	Fibre Science & Technology	36031	Fibre Science & Technology
26332	Ancient art and printed Textile designs	36332	Ancient art and printed Textile designs
26033	Fabric Manufacture – I	36033	Fabric Manufacture – I
26336	Fabric Manufacture – I Practical	36336	Fabric Manufacture – I Practical
26334	Ancient art and printed Textile designs Practical	36334	Ancient art and printed Textile designs Practical
26335	Basics of Textile Design Practical	36335	Basics of Textile Design Practical
20001	Computer Application Practical	30001	Computer Application Practical
IV Semester W.E.F. APR '17			
26141	Technology of Yarn Manufacture	36141	Technology of Yarn Manufacture
26342	Colour and Weave Effects	36342	Colour and Weave Effects
26043	Fabric Manufacture – II	36043	Fabric Manufacture – II
26044	Elementary Textile Designs	36044	Elementary Textile Designs
26345	Colour and Weave Effects Practical	36345	Colour and Weave Effects Practical
26346	Fabric Manufacture – II Practical	36346	Fabric Manufacture – II Practical
26347	Elementary Textile Designs Practical	36347	Elementary Textile Designs Practical

Diploma in Textile Technology (Textile Design and Weaving) Full time
Alternative subjects for III year subjects
‘ L ’ scheme to ‘M ’ scheme
V & VI Semesters

EXISTING SCHEME OF SUBJECTS IN L - SCHEME		ALTERNATIVE SUBEJCTS IN THE PROPOSED M – SCHEME	
V Semester W.E.F. OCT ‘17			
26051	Textile Testing	36051	Textile Testing
26052	Textile Wet Processing	36052	Textile Wet Processing
26053	Advanced Textile Designs	36053	Advanced Textile Designs
26371 26072	Elective: 1.Jacquard Designs for Home & Apparels 2.Technical Textiles	36371 36072	Elective: 1.Jacquard Designs for Home & Apparels 2.Technical Textiles
26355	Textile Testing Practical	36355	Textile Testing Practical
26356	Textile Wet Processing Practical	36356	Textile Wet Processing Practical
20002	Communication & Life Skills Practical	30002	Life and employability Skills Practical
VI Semester W.E.F. APR ‘18			
26061	Textile Management	36061	Textile Management
26062	Garment Manufacture	36062	Garment Manufacture
26381 26382	Elective: 1.Modern Weaving Technology 2.Application of Electronics in Weaving	36381 36382	Elective: 1.Modern Weaving Technology 2.Application of Electronics in Weaving
26364	Garment Manufacture Practical	36364	Garment Manufacture Practical
26365	Jacquard Designs for Home & Apparels Practical	36365	Jacquard Designs for Home & Apparels Practical
26366	Modern Weaving Technology Practical	36366	Modern Weaving Technology Practical
26367	Project Work	36367	Project Work

Question paper pattern

Common for all theory subjects

PART A ***- (1 to 8) 5 Questions are to be answered out of 8 questions for 2 marks each.*****(Question No. 8 will be the compulsory question and *can be asked from any one of the units)(From each unit maximum of two 2 marks questions alone can be asked)***

PART B ***- (9 to 16)5 Questions are to be answered out of 8 questions for 3 marks each.*** **(Question No. 16 will be the compulsory question and *can be asked from any one of the units) (From each unit maximum of two 3 marks questions alone can be asked)***

PART C ***- (17 to 21) Five Questions will be in the Either OR Pattern. Students have to answer these five questions. Each question carries 10 marks. (Based on the discretion of the question setter, he/she can ask two five mark questions (with sub division A & sub division B) instead of one ten marks question if required)***

III SEMESTER

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN&WEAVING)

II YEAR

M - SCHEME

III SEMESTER

2015– 2016 onwards

FIBRE SCIENCE AND TECHNOLOGY

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION &TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN &WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name**:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code**:** 36031

Semester **:** III Semester

Subject Title **:** **FIBRE SCIENCE AND TECHNOLOGY**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours / Week	Hours / Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
FIBRE SCIENCE AND TECHNOLOGY	5 Hrs	75Hrs	25	75	100	3 Hrs

Topics and allocation

Sl. No	Topic	Time (hrs.)
1	INTRODUCTION	14
2	VEGETABLE FIBRES	14
3	ANIMAL FIBRES	14
4	REGENERATED FIBRES	13
5	SYNTHETIC FIBRES	13
6	TEST & REVISION	07
Total		75

Rationale:

Fibres are the basic raw materials for the manufacture of yarns and fabrics. The ultimate property of a yarn or fabric depends on the property of the fibre used. Therefore, it is important to study the fibre properties.

Different fibres exhibit different physical and chemical properties. This is due to a number of factors like the material of the fibre, its molecular structure, length and the amount of draft applied during spinning process. Fabrics are made from different types of fibres and their blends are put into specific uses such as summer wear, winter wear, industrial wear etc., depending on their particular properties.

Therefore it is very important for a Textile student to study the Science of Fibres and the manufacture of man made fibres.

Objectives

- To know about the various classifications of textile fibres, their origin, chemical nature, and properties etc.
- To know about the fibre chemical composition, reaction, methods and uses.
- To know about the Indian & hybrid cotton varieties and their uses.
- To know about the Flax fibre, Linen fibre, Pineapple fibre, Banana Fibre, Jute fibre, and their uses.
- To know about Wool fibre.
- To know about silk fibres.
- To study about different types of spinning methods – manufacture of Viscose rayon.
- To know about Tencel, Layocell, Modal, Polynosic rayon and HT rayon.
- To know about the manufacture of Nylon 6, Nylon 66, polyester, Acrylic fibres and their properties & uses.
- To know uses of Glass fibre, bamboo, casein, carbon, Nomex and Kevlar fibres.

III Semester

36031 - FIBRE SCIENCE AND TECHNOLOGY

DETAILED SYLLABUS
CONTENTS

Unit	Name of the Topic	Hours
I	**INTRODUCTION:** Definition of Textile Fibre. Classification of Textile Fibres based on origin and chemical nature - Properties required for an ideal textile fibre - Identification of Textile Fibres (cotton, silk, wool, Viscose, nylon, polyester acrylic) - Microscopic test, burning test, Solubility test - Types of polymerization - Addition and condensation polymerization. Definition of monomer, polymer, repeat unit, polymerization, Degree of polymerization, Staple fibre, filament yarn, mono filament, multifilament, spun yarn & ply yarn.	14
II	**VEGETABLE FIBRES** **Cotton:** Cotton producing countries and states in India - Classification of commercial cottons, Indian hybrid cottons with their characteristic - Physical and chemical structures of cotton fibre - Physical and chemical properties of cotton - Uses. **Linen:** Linen producing countries - Physical and chemical properties - Uses. **Jute:** Jute producing countries and states in India - Physical and chemical properties – Uses. End uses of Bamboo, soya, sisal, Banana and Pineapple fibres.	14
III	**ANIMAL FIBRES** **Wool:** Wool producing countries - Classification of wool with respect to fleece and breeds - Physical and chemical structure - Physical and chemical properties - Comparison of woollen and worsted yarns - Uses. **Silk:** Silk producing countries - Types of silk (Mulbery, Eri, Muga)- Reeling, throwing and doubling - Degumming of silk - Weighting of silk - Physical and chemical properties – Uses.	14

IV	**REGENERATED FIBRES** : Types of spinning of man made fibres - Wet, dry and melt spinning - Drawing and its importance. **Viscose Rayon:** Viscose Rayon manufacturers in India - Raw material – manufacturing Process with flow chart - Properties - uses. **Properties and Uses -** High Wet Modulus rayon, HT Rayon, Tencel Rayon, Lyocell, Modal, polynosic	13
V	**SYNTHETIC FIBRES:** Nylon and Polyester manufacturers in India. **Nylon – 6,6:** Raw material – manufacturing Process with flow chart - properties - uses. **Nylon – 6:**Raw material – manufacturing Process with flow chart - properties - uses **Polyester:** Raw material – manufacturing Process using PTA route with flow chart - properties - uses. **Acrylic Fibre:** Raw material - manufacturing Process with flow chart - properties - uses. Applications of the following fibres: Glass, Asbestos, Casein, Carbon, Nomex, Kevlar & Polyurethane.	13

TEXT BOOKS:

S.No	TITLE	AUTHOR	PUBLISHERS	YEAR OF PUBLICATION
1	Textile fibres	V.A. Shenai	Technology of Textile Processing. Sevak publications, Bombay	1997
2	Textile fibres Vol I, Vol II	J.Gordon cook	Woodhead Publishing Ltd. Cambridge England	2001
3	Manmade fibres	P.W. Moncrieff	Newnes – Butterworths, London	1975

REFERENCE BOOKS:

S.No	TITLE	AUTHOR	PUBLISHERS	YEAR OF PUBLICATION
1	Textile Science	E.P.C. Gohle and L.D. Vilensty	CBS Publishers and Distributors Delhi, India	1987
2	Fibre Science and Technology	S.P. Mishra	New age International (p) Ltd Daryaganj, New Delhi-110002	2005
3	Dyeing and chemical Technology of Textile Fibres	ER Trotman	British high commission Madras – 2	1970

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY
(TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

III SEMESTER

2015 – 2016 onwards

ANCIENT ART & PRINTED TEXTILE DESIGNS

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN &WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name**:** Diploma In Textile Technology(Textile Design & Weaving)

Subject Code**:** **36332**

Semester **:** III Semester

Subject Title **:** **ANCIENT ART & PRINTED TEXTILE DESIGNS**

TEACHING AND SCHEME OF EXAMINATION

No of weeks per semester: 15

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
Ancient Art & Printed Textile Designs	5 Hrs	75 Hrs	25	75	100	3 Hrs

Topics and Allocation of Hours:

S.No	Topic	Time (hrs.)
1	**History of textile designs**	14
2	**Design in textiles and clothing**	14
3	**Elements of colour**	14
4	**Basic design repeats and layouts**	13
5	**Different classes of printing**	13
6	**Test and Revision**	07
	Total	75

RATIONALE:

To understand about the different historic origins of the designs of various countries. After studying this subject the students will be able to create suitable designs. The students will learn about colour theories which will enhance their ability in textile designing. Also the various textile printing technologies and methods will be taught to the students.

OBJECTIVES:

1. To study in detail and understand about the history of textile designs of various countries around the world**.**
2. To study in detail and understand about the use of textile designs in textiles and clothing
3. To study in detail and understand about the elements of colour, light theory andpigment theory of colours
4. To study in detail and understand about the basic design repeats and layouts.
5. To study in detail and understand about different types textile printing and machines.

III Semester

36332- ANCIENT ART & PRINTED TEXTILE DESIGNS

DETAILED SYLLABUS

CONTENTS

Unit	Name of the Topic	Hours
I	**HISTORY OF TEXTILE DESIGNS** **Egyptian Textiles** - Egyptian Fabric - Coptic Textiles – Egyptian Art – linen and wool. **Textiles from Ancient Persia** – Sasanian dynasty – motifs – Persia under the Muslim rule – The Safavid era – Oriental carpets – Asia minor – Caucasus and Armenia – Central Asia and China. **Greek, Roman and Italian Textiles** - Roman textiles – Embroidery – medieval embroidery – Italian renaissance – Lace work. **Indian Textiles** – Indian brocade and motifs – shawls of India – varieties of shawls – Indian embroidery – Indian dyed and printed fabrics – the technique. **Chinese textiles** – silk – motifs and designs – animal motifs – the tiger – dragon – phoenix – unicorn – silk and styles - Chinese art.	14
II	**DESIGN IN TEXTILES AND CLOTHING** **Textile designers** – the diversity of textile design and textile designers – the purpose of the textile designer – stylists – colorists – repeat artists- in house and freelance designers. **The textile design function** – the activities of textile designers – how design work is done. **The importance of reference materials**-Design inspiration- traditional sources-new sources-keeping notes-exposure and awareness-Professional practices-presentation **Elements of textile design** – design elements –line – shape – form-space – colour value(ton)- texture. **Design principles-** balance – movement – repetition- emphasis/contrast-unity.	14

III	**ELEMENTS OF COLOUR** **Light theory of colour** - complementary colours - The chromatic circle - colour measurement. **Pigment theory of colour** - Attributes of color the primary and secondary colours – tertiary colours. **Modification of colours** - Hue – Tone –Tint - Shade – Coloured greys. **Colour schemes** - Triadic colour factors – light, distance - special illusions - colour relationships - Basic colour theory - Properties of colour - Hue - Value – intensity. **Colour contrast** -Monochromatic contrast – Polychromatic contrast – successive contrast –Simultaneous contrast- contrast of hue - contrast of tone **Colour harmony** – Harmony of analogy – Harmony of contrast - Basis of colour harmony - Relative spaces occupied by colours - divisional colours - influence of fabric characteristics on the appearance of colour.	14
IV	**Basic design repeats and layouts** **Design repeat-** straight repeat – brick repeat – half drop repeat – mirror repeat – border repeat. **Types of lay out** – one way layout – two way layout – multidirectional layout. **Design pattern** – allover pattern - tossed pattern – tailored pattern ogee pattern – pattern on pattern – five star pattern – stripes design pattern – engineerd pattern – hands kerchief square pattern – rail road pattern. **Basic technique** - flat gouache technique – surface texture technique – wax resist technique - warp technique. **Border designs** – stopper border – zigzag border – wavy border – frets border.	13
V	**Different class of printing** **Block printing** – equipment required – procedure – advantage and dis advantage.. **Hand screen printing** - equipment – procedure – advantage and dis advantage. **Stencil printing** – procedure – advantage and dis advantage.	13

	Rotary screen printing – rotary screen preparation – engraving the rotary screen – advantage and dis advantage. **Roller printing** – centre cylinder - mandrill - colour box - doctor blade - the lint doctor – advantage and disadvantage.	

TEXT BOOKS				
S.No	**Title**	**Author**	**Publishers**	**Year of Publishing**
1	CLASSIC TEXTILE DESIGNS	M.DUPONT-AUBERVILLE	BPC HAZELL BOOKS LTD	1996
2	THE GRAMMER OF ORNAMENT	OWEN JONES	DAN&SONS; LINCOLN'S INN FIELDS, LONDON.	2001
3	THE HISTORY OF ORNAMENT	SPELTZ ALEXANDER	ASHMAN'S VERLAG,LEIPZIGH	1989
REFERENCE BOOKS				
1	THE TREASURY ORNAMENTS	DOLMETSCH HEINRICH	PORTLAND HOUSE,ADVISION OF DILITHIUN PRESS LTD.	1990
2	DECORATIVE ART OF INDIA	STRONGE SUSAN	PORTLAND HOUSE,ADVISION OF DILITHIUN PRESS LTD.	1993
3	ENGLISH AND AMERICAN TEXTILES	MARY SCHODESER CELIA RUFESS	THAMES AND HUDSON LTD, LONDON.	1986
4	A HISTORY OF TEXTILES	KAX WILSON	WEST VIEW PRESS BOULDER. LOLORADO	1979
5	MILLER'S COLLECTING TEXTILES	PATRICIA FROST	MILLER'S OCOTOPUS PUBLISHING GROUP	2000
6	HISTORY OF TEXTILE DESIGN	SHENAI (VA)	SEVAK PUBLICATIONS, B-26,ESTATE MUMBAI	1977
7	THE ILLUSTRATED HISTORY OF TEXTILES	MADELEINE GINSBURG	STUDIO EDITIONS, LONDON	1995

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

III SEMESTER

2015 – 2016 onwards

FABRIC MANUFACTURE – I

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION &TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma In Textile Technology(Textile Design &Weaving)

Subject Code **:**36033

Semester **:** III Semester

Subject Title **: FABRIC MANUFACTURE – I**

TEACHING AND SCHEME OF EXAMINATION

No of weeks per semester: 15

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
Fabric Manufacture –I	5 Hrs	75 Hrs	25	75	100	3 Hrs

Topics and Allocation of Hours:

Sl.No	Topic	Time (hrs.)
1	**Warp Winding and Weft Winding**	14
2	**Warping and Sizing**	14
3	**Drawing-in, Denting and Calculations**	14
4	**Loom - Primary Motions**	13
5	**Loom – Secondary and Auxiliary motions**	13
6	**Test and Revision**	07
	Total	75

RATIONALE:

A basic knowledge about the different processes like cone winding, pirn winding, warping, sectional warping, sizing, drawing-in and denting are essential for the students to understand the sequence of operations in the weaving preparatory processes. Hence they must be taught to the students to enhance their knowledge and skill in the setting and operation of the preparatory machines and also to perform necessary weaving preparatory calculations.

OBJECTIVES:

- To know the objective of winding.
- To know about different types of Tensioning devices and their uses.
- To understand about yarn clearers and package faults.
- To know about High speed warping machine, salient features –Faults on.
- To understand about, Sizing ingredients, their functions and importance.
- To understand about the Sizing process and various controls.
- To know about plain power loom – primary mechanisms – timings, settings
- To know about plain power loom – secondary mechanisms – timings, settings
- To know about Drawing-in Denting, yarn numbering systems and understand various calculations of winding , warping and sizing.

III Semester

36033 - FABRIC MANUFACTURE – I

DETAILED SYLLABUS

CONTENTS

UNIT	NAME OF THE TOPIC	HOURS
I	**WARP AND WEFT WINDING** **Warp Winding**: Brief study of Sequence of Processes in Weaving Preparatory – Objects of Warp Winding– Different types of Yarn Packages– Definition of terms: Angle of wind, Angle of cone and Number of Wind, Traverse, Traverse Length – Yarn Tensioners – Study of different types of Tensioners with simple sketches –Merits and Demerits – Yarn Clearers–Study of different types of Clearers with simple sketches–Mechanical and Electronic Clearers–Clearing efficiency–Merits and Demerits–Study of different types of Knots– Knot factor– Splicing – Types of Splicing – Salient features of spliced yarn – Passage of material through Fully Automatic Cone Winding Machine and its salient features– Package Faults – Causes and Remedies. **Weft Winding**: Objects of Weft Winding – Advantages of Rewound Weft Over Direct Weft – Passage of material through High Speed Automatic Pirn Winder and its salient features – Bunch and its necessity.	14
II	**WARPING AND SIZING** **Warping**: Objects - Passage of material through High Speed Beam Warping Machine – Types of Creels – Electrical Warp Stop Motion – Salient features of Modern Warping Machines, Beam Faults – Causes and Remedies. **Sectional Warping:** Need for Sectional Warping–Passage of material through a Computerised Sectional Warping machine. **Sizing:** Objects – Different types of Sizing ingredients and their functions – Size Pick-up – Factors affecting Size Pick-up – Study of the modern Size box with a simple sketch– Moisture Control – Stretch Control – Temperature Control – Size Level Control – Yarn Migration and its effects– Environmental and Safety Aspects in Sizing – Passage of material through Multi Cylinder Sizing Machine - Beam defects – Causes and remedies.	14

III	**DRAWING-IN, DENTING AND CALCULATIONS** **Drawing-in and Denting:** Object of Drawing-in and Denting, Object of Leasing–Methods of Leasing – Droppers – Types and their Purpose –Objects of Warp Knotting –Manual and Mechanical Warp Knotting methods – Loom Gaiting. **Yarn Numbering Systems** : Different Yarn Numbering Systems– Direct Systems (Tex, Denier) –Indirect Systems (English Cotton, Metric Cotton and French Cotton systems) – Calculation of Length, Weight and Count of Yarns based on the above Systems– Conversion of Count from one system to another (Limited to the systems mentioned above)– Plied Yarn Count Calculations. **Preparatory Calculations:** Production Calculations of Warp Winding, Weft Winding, Warping and Sizing machines.	14
IV	**LOOM –PRIMARY MOTIONS** **Introduction to Weaving**: Passage of Material through Power loom – Definition of Right hand, Left hand looms and Shuttles. **Shedding**: Objects of Shedding – Working of Negative tappet shedding mechanism with a simple sketch – Brief Study of Over and Under Heald reversing motions with simple sketches. Positive and Negative Shedding – Merits and Demerits – Definition of Early Shedding and Late Shedding. Types of Sheds – Merits and Demerits – Brief study of E-Shedding mechanism with a simple sketch. **Picking**: Objects of Picking – Types of Picking – Working of Cone Over Picking and Side lever Under Picking Mechanisms with simple sketches– Advantages and Disadvantages of Over and Under Picking Mechanisms– Early and Late Picking – Shuttle Checking Devices. **Beat-up**: Object of Beat-up – Study of the parts of the Sley-Crank Arm beat up mechanism with a simple sketch– Eccentricity of Sley's Motion – Factors affecting Eccentricity of Sley.	13

V	**LOOM - SECONDARY AND AUXILIARY MOTIONS** **Take up motions:** Objects - Types - Working of Seven Wheel Take up Motion with a line sketch —Working of Positive Continuous Take up Motion with a simple sketch- Anti-Crack Motion. **Let-off Motion:** Objects - Types - Working of Negative let-off Motion - Control of Warp Tension - Oscillating back rest and its functions. **Weft fork Motion:** Objects - Types - Brief study of Side & Centre Weft Fork Motion. **Warp Protecting Mechanism:** Objects – Types – Brief study of Loose Reed mechanism and Fast Reed mechanisms with simple sketch. **Other Mechanisms:** Functions of Brake Motion, Fly Wheel, Lease Rods, Healds, Reeds, and Temples - Types and their uses.	13

TEXT BOOKS:

S.No	Title	Author	Publishers	Year of Publishing
1	Principles of Weaving	Marks & Robinson	The Textile Institute, Manchester	1976
2	Woven Fabric Production - I	NCUTE	NCUTE, New Delhi	2002

REFERENCE BOOKS:

S.No	Title	Author	Publishers	Year of Publishing
1	Hand book of weaving	Dr Sabit Adhenur	Technomic Publishing Compnay – INC, Lancester, basel , UK	2001
2	Modern Preparation and Weaving Machinery	A.Ormerod	Butterworths , London	1983
3	Weaving machines, mechanisms and management	Talukdar , Sriramulu, Ajgonkar	Mahajan publishers (P) ltd Mumbai	1988
4	Weaving Calculations	R.Sengupta	D.B.Taraporevala sons & co Ltd., Mumbai	1996
5	Textile sizing	Bhuvanesh C.Goswami & Rajesh D Anand jiwala	Marshel dekker, INC New York	2004

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

III SEMESTER

2015 – 2016 onwards

ANCIENT ART & PRINTED TEXTILE DESIGNS PRACTICAL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION &TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN &WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma In Textile Technology (Textile Design & Weaving)

Subject Code **:** 36334

Semester **:** III Semester

Subject Title **: ANCIENT ART AND PRINTED TEXTILE DESIGNS PRACTICAL**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject	Instructions		Examination			
			Marks			Duration
	Hours/ Week	Hours/ Semester	Internal Marks	Board Exam	Total	
ANCIENT ART AND PRINTED TEXTILE DESIGNS PRACTICAL	5	75	25	75	100	3 Hrs

RATIONALE:

This practical subject provides hands on experience on the preparation of color charts/JK boards using color media for various designing and painting techniques. To practice and understand drawing and painting.

GUIDELINES:

- All the twelve experiments given in the list of experiments should be completed and given for the end semester practical examination.

- In order to develop best skills every students should be provided with a separate Computer for exposing the skills in the laboratory.

- The external examiners are requested to ensure that a single experimental question should not be given to more than three students while examining a batch of 30 students during Board Examinations.

OBJECTIVES:

To make the student draw artistically the traditional and ornamental designs on charts.

To make the student colour thetraditional and ornamental designs with various color media.

To understand and createt the designs with various techniques of painting.

QUESTION PAPER PATTERN &ALLOCATION OF MARKS

Single Experiment is to be given per student

Design work	60 marks
Write up	10 marks
Viva	05 marks
Total	75 Marks

III SEMESTER

36334 - ANCIENT ART AND PRINTED TEXTILE DESIGNS PRACTICAL

LIST OF EXPERIMENTS

1. Creating art deco women's dress design with flat gouache technique.
2. Creating neo classical window curtain design with stippling technique.
3. Creating rococo wall hanging design with dry brush technique.
4. Creating optical art table cloth design with drawing campus or Indian ink technique.
5. Creating Jacobean pillow cover design with warp technique.
6. Creating tropical saree design with shaded pencil technique.
7. Creating various border designs with embroidery technique.
8. Creating wall paper designs with colour media for Egypt /Arabian ornaments.
9. Creating bed spread designs for Indian ornaments with colour media.
10. Creating hand kerchief designs for Chile / Peru ornaments with colour media.
11. Creating door screen designs for Chinese ornaments with colour media
12. Creating table cloth designs for Greek ornaments with colour media

List of materials required for a batch of 30 students

1. Drawing board , Paper board , Leather board ,Engineering Drawing sheets , Tracing sheets, Textured paper.
2. Poster colour media
3. Water colour media
4. Acrylic colour media
5. Transparent colours
6. Indian ink
7. Colour crayons , colour pencils and colour pastels
8. Engineering instrument box
9. Brushes 0 to 12 size
10. 'X' acto knife
11. Cello tape 12.Colour Xerox facility

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

III SEMESTER

2015 – 2016 onwards

BASICS OF TEXTILE DESIGN PRACTICAL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION &TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN &WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name**:** Diploma In Textile Technology (Textile Design & Weaving)

Subject Code**:** 36335

Semester **:** III Semester

Subject Title **:** **BASICS OF TEXTILE DESIGN PRACTICAL**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject	Instructions		Examination			
			Marks			Duration
BASICS OF TEXTILE DESIGN PRACTICAL	Hours/ Week	Hours/ Semester	Internal Marks	Board Exam	Total	
	5	75	25	75	100	3 Hrs

RATIONALE:

This practical subject is included to understand about the Art, Color and Design fundamentals. To develop free hand drawing skills, various types of sketches to be drawn. With this basic knowledge students able to draw the designs using any computer software.

GUIDELINES:

- All the twelve experiments given in the list of experiments should be completed and given for the end semester practical examination.

- In order to develop best skills every students should be provided with a separate Drawing sheet for each experiment to expose the skills in the laboratory.

- The external examiners are requested to ensure that a single experimental question should not be given to more than three students while examining a batch of 30 students during Board Examinations.

OBJECTIVES:

To make the student understand the basics of textile designing.

To make the student draw and paint in computers using MS paint , adobe photoshop.

To make the student in understanding the Textile CAD printing software and develop designs on it.

QUESTION PAPER PATTERN &ALLOCATION OF MARKS

Single Experiment is to be given per student

Design work / computer work	60 marks
Write up	10 marks
Viva	05 marks
Total	75 Marks

III-Sem

36335 - Basics of Textile Designs Practical

LIST OF EXPERIMENTS

1. Creating foliage drawing with pencil shading.
2. Creating memory drawing as pencil sketches with different shadows from the given reference.
3. Creating human drawing as pencil sketch with different poses both male and female from given reference.
4. Creating "WELCOME" title with different types of fonts / letters.
5. Creating an enlarged design from the given small size reference design by learning enlarging and reducing technique.
6. Creating object drawing with freehand outlines as pencil sketches for common objects with the term perspective angle.
7. Creating a free hand drawing from the reference of stone and wood carving designs.
8. Creating a Pigment colour theory circle by learning colour mixing with poster colors.
9. Write about the Adobe Photo Shop tools and options for creation of simple Printed textile design.
10. Creating stripe and check designs in adobe photo shop.
11. Creating simple multi colour printed textile design by learning step by stepcommands of Textile CAD Printing software.
12. Producing and display colour separations of a given printed fabric design in Textile CAD Printing software.

LIST OF EQUIPMENTS REQUIRED FOR A BATCH OF 30 STUDENTS

Latest computers with Textile CAD printing software and Adobe Photoshop.

Materials required:

1. Drawing board , Paper board , Leather board ,Engineering Drawing sheets , Tracing sheets, Textured paper.
2. Poster colour media
3. Colour crayons , colour pencils and colour pastels
4. Engineering instrument box
5. Brushes 0 to 12 size
6. 'X' acto knife
7. Cello tape

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY
(TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

III SEMESTER

2015 – 2016 onwards

FABRIC MANUFACTURE - I
PRACTICAL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN &WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name : Diploma in Textile Technology(Textile Design & Weaving)

Subject Code : 36336

Semester : III Semester

Subject Title : FABRIC MANUFACTURE - I PRACTICAL

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject	Instruction		Examination			
			Marks			Duration
FABRIC MANUFACTURE - I PRACTICAL	Hours /Week	Hours/ Semester	Internal Marks	Board Exam	Total	
	575	60	25	75	100	3 Hrs

RATIONALE:

To enhance the practical knowledge in weaving preparatory processes like cone winding, pirn winding, warping and sectional warping. To dismantle and assemble the various parts in plain power loom. The timing and settings also given for better understanding of each mechanism. These fundamentals help the students to acquire knowledge in automatic and shuttleless weaving machines.

GUIDELINES:

- All the twelve experiments given in the list of experiments should be completed and

given for the semester practical examination.

- In order to develop best skills every students should be provided with a separate machine for each mechanism for better understanding in the laboratory.
- The external examiners are requested to ensure that a single experimental question

should not be given to more than two students while examining a batch of 30 students during Board Examinations.

QUESTION PAPER PATTERN &ALLOCATION OF MARKS

Single Experiment is to be given per student

Experiment	50 marks
Write up / diagram / calculations	20 marks
Viva - Voce	05 marks
	Total
75 Marks	

III SEMESTER
36336 -FABRIC MANUFACTURE - I PRACTICAL
OBJECTIVES

Cone Winding

ToDraw the Passage of material.

To Set the Slub catcher and Tensioner for specific counts.

To calculate the drum shaft speed and Production per drum per hour in kgs.

Pirn Winding

ToDraw the Passage of material.

To calculate the spindle speed and Production per spindle per hour in kgs.

To draw the bunch building mechanism .

Sectional Warping

ToDraw the Passage of material.To calculate the Production per hour in kgs.

To draw the gearing plan.

Shedding

To Dismantle and assemble the various parts of the Tappet shedding mechanism with timing and settings.

Picking

To Dismantle and assemble the various parts of the Cone over pick mechanism with timing and settings.

To Dismantle and assemble the various parts of the Under pick mechanism with timing and settings.

Take-up

To Dismantle and assemble the various parts of the 7 wheel take-up motion with timing and settings. .

Let-off

To Dismantle and assemble the various parts of the negative let-off mechanism with back rest settings.

Auxiliary Motions

To Dismantle and assemble the various parts of the loose reed / fast reed mechanism with timing and settings.

To Dismantle and assemble the various parts of the weft fork mechanism with timing and settings.

Shuttle box

To Dismantle and assemble the various parts of the shuttle box of an over pick loom with reed alignment for the given shuttle.

Drawing & Denting

To draw the warp yarn through heald shaft and reed.

III SEMESTER

36336 -FABRIC MANUFACTURE - I PRACTICAL

List of Experiments

1. Sketch the gearing plan of a high speed cone winder and calculate the winding speed and production per drum per hour in kg.

2. Sketch the gearing plan of a pirn winder and calculate the spindle speed and production per spindle per hour in kg.

3. Draw the Passage of material through a Sectional warping machine and calculate the number of sections, revolutions of each section, drum speed and beaming speed.

4. Sketch the tappet shedding mechanism and set it for proper timing and working.

5. Sketch the cone over pick mechanism and set it for proper timing and working.

6. Sketch the under pick (Lever / Cone) mechanism and set it for proper timing and working.

7. Sketch the 7 wheel take-up motion and set it for proper timing and working.

8. Sketch the negative let-off mechanism and set it with timing and back rest settings.

9. Sketch the Loose reed / Fast reed mechanism set it for proper timing and working.

10. Sketch the shuttle box of an over pick loom and set it with reed alignment for the given shuttle.

11. Sketch the Side weft-fork mechanism and set it for proper timing and working.

12. Draw a small section of warp ends through healds and reed for weaving plain / twill cloths.

LIST OF EQUIPMENTS REQUIRED

1. Cone winding machine. – 1
2. Pirn winding machine. – 1
3. Sectional Warping machine. – 1
4. Plain power loom – 3.

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN &WEAVING)

II YEAR

M - SCHEME

III SEMESTER

2015 – 2016 onwards

COMPUTER APPLICATIONS PRACTICAL

CURRICULAM DEVELOPMENT CENTRE

COMMON TO ALL BRANCHES

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU.

M- SCHEME

(to be implemented for the student Admitted from the Year 2015-2016 on wards)

(Implemented from the academic year 2016-2017 onwards)

Course Name : For All Branches

Subject Code : 30001

Semester : III

Subject title : COMPUTER APPLICATIONS PRACTICAL

TEACHING & SCHEME OF EXAMINATION:

No. of weeks per Semester: 15 Weeks

Course	Instruction		Examination			
			Max.			Duration
	Hours/ week	Hours/ Semester	Internal Assessment	Board Examination	Total	
COMPUTER APPLICATIONS PRACTICAL	4Hrs	60 Hrs	25	75	100	3Hrs

RATIONALE:

The application of Computer knowledge is essential the students of all disciplines of Engineering in addition to their respective branch of study. The Computer Application Practical course facilitates the necessary knowledge and skills regarding creating, working and maintaining the documents and presentation of documents with audio visual effects ina computer and produces necessary skills in E- Learning and Chatting tools..

OBJECTIVES:

On completion of the following exercises, the students will be able to

- Use the GUI operating systems
- Familiarize and customize the desktop
- Use the different facilities available in the word processor
- Prepare Power Point presentation with different formats
- Expose E-learning tools and chatting tools
- Analyze the datasheet
- Create and manipulate the database
- Create different types of charts
- Prepare PowerPoint presentation
- Understand Internet concepts and usage of e-mail

GUIDELINES:

- All the experiments given in the list of experiments should be completed and all the experiments should include for the end semester practical examination.
- The computer systems should be 1:1ratioforpracticalclasses

SYLLABUS
LAB EXERCISES
SECTION – A

GRAPHICAL OPEARTING SYSTEM

Introduction to GUI OS; Features and various versions of GUI OS & its use; Working with GUI OS; My Computer & Recycle bin ; Desktop, Icons and Explorer; Screen description & working styles of GUI OS; Dialog Boxes & Toolbars; Working with Files & Folders; simple operations like copy, delete, moving of files and folders from one drive to another, Shortcuts &Autostart; Accessories and Windows Settings using Control Panel- setting common devices using control panel, modem, printers, audio, network, fonts, creating users, internet settings, Start button & Program lists; Installing and Uninstalling new Hard ware & Software program on your computer - Copying in CD/DVD settings – Recording Audio files.

Exercises

1. a. Installing screen saver and change the monitor resolution by 1280X960
   b. Setting wall papers
   c. Creating, moving, deleting and renaming a folder
   d. Copy, paste and cut a folder/file
   e. Displaying the properties for a file or folder
2. a. Restoring files and folders from Recycle bin
   b. Creating short cuts for folder/file
   c. Finding a file or folder by name
   d. Selecting and moving two or more files/folders using mouse
   e. Sorting folders/files.

WORD PROCESSING

Introduction to Word Processing – Examples- Creation of new documents, opening document, insert a document into another document. Page setup, margins, gutters, font properties, Alignment, page breaks, header footer deleting, moving, replace, editing text in document. Saving a document, spell checker.

Printing a document. Creating a table, entering and editing, Text in tables. Changing format of table, height width of row or column. Editing, deleting Rows, columns in table. Borders, shading, Templates, wizards, drawing objects, mail merge.

Exercises

3. Create the following table and perform the operations given below

<table>
<tr><th>DAYS</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th></tr>
<tr><td>MON</td><td colspan="2">TEST</td><td colspan="3">A: JPP
B:RDBMS</td><td>CA</td><td>RDBMS</td><td>TUT</td></tr>
<tr><td>TUE</td><td>CA</td><td>OOP</td><td>CN</td><td>RDBMS</td><td colspan="4">A: RDBMS
B: JPP</td></tr>
<tr><td>WED</td><td>CN</td><td>RDBMS</td><td>OOP</td><td>RDBMS</td><td colspan="2">COMMUNICATION</td><td>CN</td><td>CA</td></tr>
<tr><td>THU</td><td>OOP</td><td colspan="3">A: JPP
B: RDBMS</td><td>CA</td><td>RDBMS</td><td>CN</td><td>OOP</td></tr>
<tr><td>FRI</td><td colspan="2">COMMUNICATION</td><td colspan="2">A: RDBMS
B: JPP</td><td>OOP</td><td>CN</td><td>RDBMS</td><td>CA</td></tr>
<tr><td>SAT</td><td>OOPS</td><td>RDBMS</td><td>CN</td><td>CA</td><td colspan="4">---------</td></tr>
</table>

4. Create a standard covering letter and use mail merge to generate the customized letters for applying to a job in various organizations. Also, create a database and generate labels for the applying organizations.

5. Create a news letter of three pages with two columns text. The first page contains some formatting bullets and numbers. Set the document background colour and add 'confidential' as the watermark. Give the document a title which should be displayed in the header. The header/ footer of the first page should be different from other two pages. Also, add author name and date/ time in the header. The footer should have the page number.

SPREADSHEET

Introduction to Analysis Package – Examples - Concepts of Workbook & Worksheets; Using Wizards; Various Data Types; Using different features with Data, Cell and Texts; Inserting, Removing & Resizing of Columns & Rows; Working with Data & Ranges; Different Views of Worksheets; Column Freezing, Labels, Hiding, Splitting etc.; Using different features with Data and Text; Use of Formulas, Calculations & Functions; Cell Formatting including Borders & Shading; Working with Different Chart Types; Printing of Workbook & Worksheets with various options.

Exercises

6. Create a result sheet containing Candidate's Register No., Name, Marks for six subjects. Calculate the total and result. The result must be calculated as below and failed candidates should be turned to red.

   Result is Distinction if Total >= 70 %

   First Class if Total > = 60 % and < 70 %

   Second Class if Total >= 50 % and < 60 %

Pass if Total >= 35 % and < 50 %

Fail otherwise

Create a separate table based on class by using auto filter feature.

7. Create a table of records with columns as Name and Donation Amount. Donation amount should be formatted with two decimal places. There should be at least twenty records in the table. Create a conditional format to highlight the highest donation with blue color and lowest donation with red colour. The table should have a heading.

8. Create line and bar chart to highlight the sales of the company for three different periods for the following data.

SALES BAR CHART

Period	Product1	Product2	Product3	Total
JAN	35	40	50	125
FEB	46	56	40	142
MAR	70	50	40	160

SECTION – B

DATABASE

Introduction – Menus – Tool bar – Create – Edit – Save – Data types – Insert – Delete – Update – View – Sorting and filtering – Queries – Report – Page setup – Print.

Exercises

9. Create Database to maintain at least 10 addresses of your class mates with the following constraints

- Roll no. should be the primary key.
- Name should be not null

10. create a students table with the following fields: Sr.No, Reg. No, Name, Marks in 5 subjects. Calculate total and percentage of 10 students. Perform the following queries.

- To find the details of distinction student
- To find the details of first class students
- To find the details of second class students

11. Design a report for the above exercise to print the consolidated result sheet and mark card for the student.

PRESENTATION

Introduction - Opening new presentation, Parts of PowerPoint window – Opening - Saving and closing presentations - Features of PowerPoint, Background design, Word art, Clip art, Drawings,3D settings - Animations, Sound, Views, types of views - Inserting and deleting slides, arranging slides, slides show, rehearsal, setup show,

custom show - Creating custom presentations, action setting, auto content wizard, working with auto content wizard

Exercises

12. Make a marketing presentation of any consumer product with at least 10 slides. Use different customized animation effects on pictures and clip art on any four of the ten slides.
13. Create a Presentation about our institution or any subject with different slide transition with sound effect.

INTERNET

Introduction – Getting acquainted with Internet Connection - Browsers – Website URL - Open a website – Net Browsing - Email: Creating E-mail id – Sending , receiving and deleting E-mail - Email with Attachments – CC and BCC - Chatting – Creating Group mail - Google docs – Search Engines – Searching topics .

Most Popular Social Networking Sites : History – Features – Services – Usage of Face book , Twitter and Linkdln.

Transferring data through wifi / bluetooth among different devices.

Introduction to cybercrime – Software Piracy – Viruses – Antivirus Software

Exercises

14. Create an e-mail id and perform the following
    - Write an e-mail inviting your friends to your Birthday Party.
    - Make your own signature and add it to the e-mail message.
    - Add a word attachment of the venue route
    - Send the e-mail to at least 5 of your friends.

15. Create a presentation on Google docs. Ask your friend to review it and comment onit. Use "Discussion" option for your discussions on the presentation.

Hardware and Software Requirements

Hardware Requirements:

- Computers – 36Nos
    - Intel Core i3 Processor
    - 500 GB Hard Disk, 2 MB RAM
    - 14” Monitor
- Projector – 1 Nos
- Laser Printer – 1 No
- Internet Connection – Minimum of 512 KB

Software Requirement

- Any GUI Operating System
- Open Source Software / MS- Office

1. SemesterEndExamination–75 Marks

Content	Max.Marks
Writing Procedure – One Question from Section A	15
Demonstration	15
Results with Printout	5
Writing Procedure – One Question from Section B	15
Demonstration	15
Results with Printout	5
Viva voce	5
Total	**75MARK**

IV SEMESTER

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

IV SEMESTER

2015 – 2016 onwards

TECHNOLOGY OF YARN MANUFACTURE

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION &TRAINING , TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name : Diploma In Textile Technology (Textile Design & Weaving)

Subject Code : 36141

Semester : IV Semester

Subject Title : **TECHNOLOGY OF YARN MANUFACTURE**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject	**Instructions**		**Examination**			
	Hours/ Week	Hours / Semester	Marks			Duration
TECHNOLOGY OF YARN MANUFACTURE	5 Hrs	75 Hrs	Internal Assessment	Board Examination	Total	
			25	75	100	3 Hrs

TOPICS AND ALLOCATION OF HOURS

Sl.No.	Topic	Time(Hrs)
I	**GINNING, MIXING, BLOW ROOM AND CARDING**	14
II	**DRAWING AND COMBING**	14
III	**ROVING AND SPINNING**	14
IV	**DOUBLING, REELING, BUNDLING AND BALING**	13
V	**REGULAR AND SPECIALTY YARNS**	13
	TEST & REVISION	07
	Total	75

RATIONALE:

To understand about various preparatory processes in spinning like ginning, mixing, blow room, carding, drawing and combing. The students will be taught about ring spinning and post spinning, the students will study the definition and uses of different types of Fancy Yarns processes.

OBJECTIVES:

- To study about the sequence of machines in Blow room lines.
- To study the functions and passage of material through carding
- To study the functions and passage of material through drawing
- To study the functions and passage of material through combing
- To study the functions and passage of material through speed frame.
- To study the functions and passage of material through Ring Frame.
- Brief study about Modern Spinning systems.
- To study the objectives and details of Doubling, Reeling, Bundling and Baling.
- To study the functions and passage of material through 7 Lea Mechanism.
- To study the definition and uses of different types of Fancy Yarns
- To study the manufacturing process of sewing thread.

I36141-TECHNOLOGY OF YARN MANUFACTURE

DETAILED SYLLABUS

Contents: Theory

Unit	Name of the Topic	Hours
1	**GINNING, MIXING, BLOW ROOM AND CARDING** Objects of Ginning, Types of gins. Objects of Mixing & Blending – Objects of Blow room –sequence of Blow room machines for carded yarn and combed yarn manufacture. Sequence and functions of the machines for synthetic fibre processing and their blends – Brief idea about Chute feed system- advantages and disadvantages, Objects of Carding – Principles of carding and stripping actions – passage of material through Modern HP card – salient features of Modern HP card.	14
2	**DRAWING & COMBING** Objects of Drawing –Principles of roller drafting –Passage of material through Modern Draw Frame – Features of modern draw frame - Principles of Auto levelers (Open loop and close loop system) - Objects of preparatory machines to Combing - Objects and Sequence of Combing action- Passage of material through the Modern Comber – Salient features of modern comber- Comparison between carded and combed yarns. Definition of semi combed yarn, combing efficiency, unicomb.	14
3	**ROVING AND SPINNING** Objects of Speed frame – Passage of material through the Speed Frame- Functions of Drafting system, Flyer, Spindle,False twister. Definition of Flyer lead & Bobbin lead winding. Salient features of modern speed frame. Objects of Ring fame –passage of material through modern ring frame-Functions of Rings & Traveler, S & Z Twist. Salient features of Modern Ring Frame. Objects of Rotor (Open End) Spinning & passage of material through Rotor spinning – Advantages & Limitations. Comparison between ring and OE yarns - Features of DREF 3, Air - jet and Compact spinning systems - Advantages.	14
4	**DOUBLING, REELING, BUNDLING AND BALING** Objects of Doubling – Principles of doubling. Passage of material through Dry and Wet doubling machines – End uses of doubled yarn. Objects of Two for One Twister - Passage of material through Two for One Twister – advantages & disadvantages .Objects of Reeling – Types and Systems of Reeling. Passage of material through 7 Lea reeling machine – Objects of Bundling and Baling – Specifications of bundling & baling.	13

5	**REGULAR AND SPECIALTY YARNS** Definition and end uses of Spun yarn - mono & multi-filament yarn - Cable yarns – Slub yarns – Flock or Flake yarns –Boucle yarn – Gimp yarn – Spot and Knot yarns – Loop or Curl yarn– Grandrelle yarns – Spiral or Cork screw yarns – Chenille yarn –Covered yarn – Core yarn –Faciated yarn – Mélange yarns-Elastomeric yarns – Metallic yarns– (No Method of production Details) - Sewing threads – Fibres for sewing threads- Properties required for sewing threads – Process flow chart for cotton and spun polyester sewing thread manufacture.	**13**

TEXT BOOKS:

Author	Title	Publisher	Year
A.V.Mani	Spun yarn technology -volume I & II	Saravana Publications, Madurai	1996
Jaganathan.R	Cotton spinners Hand book	Mahajan Brothers Ahmedabad 380009	--

REFERENCE:

SL. NO	Title	Author	Publisher	Year
1	W.A.Hunter	Opening and cleaning	The Textile Institute Manchester, U.K.	**---**
2	W.S.Taggert	Cotton spinning	S.S. Shroff, Bombay	**---**
3	W.Klein	Short Staple Spinning Series Volume I, II & III	The Textile Institute Manchester, U.K.	**1987**
4	Hanter.W.A	Manual of cotton spinning volume IV & V	Textile Institute Manchester	1
5	Srinivasamoorthy.H.V	Cotton waste industry	Victoria Jubilee Technical Institute,Matunga, Bombay 400019	3

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

IV SEMESTER

2015 – 2016 onwards

COLOUR AND WEAVE EFFECTS

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **: 36342**

Semester **:** IV Semester

Subject Title **: COLOUR AND WEAVE EFFECTS**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
COLOUR AND WEAVE EFFECTS	5 Hrs	75 Hrs	25	75	100	3 Hrs

Topics and Allocation of Hours:

Sl.No	Topic	Time (hrs.)
1	**STRIPE AND CHECK WEAVE COMBINATIONS**	14
2	**APPLICATION OF COLOUR**	14
3	**COLOUR & WEAVE EFFECTS FOR STRIPE AND CHECK DESIGNS**	14
4	**SPECIAL COLOUR AND WEAVE EFFECTS**	13
5	**FIGURED COLOR AND WEAVE EFFECTS**	13
6	**TEST & REVISION**	07
	Total	75

RATIONALE:

This subject makes the students to create different stripe and check woven designs for textiles after they learn about various color and weave effects, combination of weaves, coloring orders and the application of colour.

OBJECTIVES:

- To know about the stripe and check weave combinations.
- To know about the application of colour
- To know about the colour & weave effects for stripe and check designs
- To know about special colour and weave effects
- To understand figured color and weave effects

IV-Sem
36342 - COLOUR AND WEAVE EFFECTS
DETAILED SYLLABUS
CONTENTS

Unit	Name of the Topic	Hours
I	**STRIPE AND CHECK WEAVE COMBINATIONS** **Stripe and check weave combinations -** Forms of stripes and checks – Selection of weaves – Joining of weaves – Relative firmness of the weaves – Classification of stripe and check designs – Effects produced in one weave turned in opposite directions – Combination of weaves derived from the same base weave – Combination of warp and weft face weaves – Combination of different weaves. **Use of motif designs -** Crammed stripes and checks – Fancy weave stripes upon satin grounds – Zephyr stripes and checks – Oxford shirting cloths – Harvard shirting – Wool and union shirting – Combination of Bedford cord and Pique weaves	14
II	**APPLICATION OF COLOUR** Basis of colour harmony – relative spaces occupied by colours – Divisional colours – influence of fabric characteristics on the appearance of colours**.** Mixed colour effects – Fibre mixture yarns – Twist yarn mixtures – Combination of differently coloured threads – Colour stripes and checks – Simple regular patterns – Simple irregular patterns – Compound orders of colouring – Counter change patterns – Graduated patterns – Modification of stripe and check patterns – Balance of contrast in pattern range designing – Colour combination in relation to weave. **Weaves -** Grecian Weave – twilled hopsack weave – fancy basket weave – Herring bone weaves – diaper weaves – 2/2 twill diaper weaves – mayo weaves – Cambell weaves – 2/1 twill specially modified weave – modification of warp faced satinette weave – fancy 8 shaft weave – creation of 8 shaft weave	14

III	**COLOUR & WEAVE EFFECTS FOR STRIPE AND CHECK DESIGNS** **Simple colour and weave effects** **General Considerations Arising From the Combination of Weave with Colour** - representation of colour and weave effects upon design paper - classification of colour and weave effects - methods of producing variety of effect in the same weave and coloring **Examples of simple weave and colour combinations** - Continuous line effects – Hound's tooth patterns - bird's eye and spot effects - hairlines - step patterns - all-over effects. **Stripe colour and weave effects** Changing the relative position of the weave and colouring - simple weave and simple wefting with compound warping - stripe weave and simple wefting with simple warpings – stripe weave and simple wefting with compound warpings **Check colour and weave effects** Changing the relative position of the weave and colouring - simple weave, compound warping and compound wefting - stripe weave and compound wefting with simple and compound warpings - cross-over weave and compound warping with simple and compound weftings - check weave, simple and compound wefting with simple and compound warpings.	14
IV	**SPECIAL COLOUR AND WEAVE EFFECTS** **Special rib and cord structure -** Fancy rib and cord weaves – Soleil weaves – Combination of weft cord with other weaves – Modified rib and cord weaves – Longitudinal warp cords ribs– Corkscrew weaves – Warp corkscrew weaves – Weft corkscrew weaves. **Colouring rib and cork screw weaves** – Straight and waved horizontal line – Straight and waved vertical line – Solid vertical lines in alternate colours using Bedford cord and another weave – Check combination of warp and weft rib weaves – Stripe designs using cork screw weaves – Ordinary Twill effects used with ordinary corkscrew weaves – Modification of Corkscrew weave and modification of colouring.	13

V	**FIGURED COLOR AND WEAVE EFFECTS** **Figured color and weave effects -** figured weave arrangements with simple and compound orders of colouring - diamond form combined with a simple order of colouring - simple diamond form combined with a compound order of colouring.- Producing non-geometrical figured style in one weave and one order of colouring – construction of special weaves to produce distinct figured effect - combinations of Special Weaves and Special Yarns **Simple spot designs (Putta)-** Method of drafting spot figures – distribution of spot figures – reversing spot figures – irregular sateen bases – calculations relating to spot figure designing	13

TEXT BOOKS				
S.No	**Title**	**Author**	**Publisher**	**Year of Publishing**
1	Z. Croziciki	Watson textile design & colour	Universal publishing corporation, Newnes, Butterworths, England.	1988
REFERENCE BOOKS				
1	Jacquie Wilson	Hand book of textile design	Woodhead publishing ltd.,	2001
2	Marypaul yates	Textiles – A Hand book Designers	W.W.Narton & company, New work	1996
3	William Watson	Textile design and colour	Universal publishing corporation, Newnes, Butterworths, England	1921

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

IV SEMESTER

2015 – 2016 onwards

FABRIC MANUFACTURE - II

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name : Diploma in Textile Technology (Textile Design & Weaving)

Subject Code : 36043

Semester : IV Semester

Subject Title : **FABRIC MANUFACTURE- II**

TEACHING AND SCHEME OF EXAMINATION

No of weeks per semester: 15

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
Fabric Manufacture – II	5 Hrs	75 Hrs	25	75	100	3 Hrs

TOPICS AND ALLOCATION OF HOURS:

Sl.No	Topic	Time (hrs.)
1	**DOBBY SHEDDING**	14
	JACQUARD SHEDDING	14
3	**MULTIPLE BOX MOTION AND TERRY WEAVING**	14
4	**AUTOMATIC WEAVING**	13
5	**WEAVING OF SYNTHETIC TEXTILES & LOOM CALCULATIONS**	13
6	**TEST & REVISION**	07
	Total	75

RATIONALE:

This subjects deals about the special mechanisms of power loom such as dobby, jacquard, box motion and terry motion. The students will study about the automatic shuttle looms, synthetic and blended yarn weaving. After studying this subject the student will be able to calculate the production of looms, balancing of machineries and fabric costing in a weaving factory.

OBJECTIVES:

- To know about various types of Dobby mechanism
- To know about various types of Jacquard mechanisms
- To study about multiple box motion & Terry motion
- To study about Automatic looms, their advantages and the mechanisms available
- To have knowledge about Synthetic and blended yarn weaving
- Tostudy loom calculations, costing and balancing of machineries

IV SEM
36043 - FABRIC MANUFACTURE - II

DETAILED SYLLABUS

CONTENTS

Unit	Name of the Topic	Hours
I	**Dobby Shedding** Objects and Classification. Types of dobby – Single lift and Double lift – Characteristics comparison between Single lift and Double lift dobbies. - Positive and Negative dobbies. Right hand and Left hand dobbies. Working of Climax dobby. Pegging for a design. Jack missing – Definition and Causes. Pick finding devices. Cam Dobby – Types - Working of Negative Cam dobby. Study of Cross border dobby and Electronic dobby	14
II	**Jacquard Shedding** Objects - Types of Jacquards. Principle of Jacquard shedding. Size of a Jacquard machine. Working of Double Lift Double Cylinder Jacquard with Timing and Setting. Advantages and Disadvantages of Double Lift Double Cylinder Jacquard. Working of Cross border jacquard and its advantages. Jacquard harness mounting - Norwich and London systems and its comparison. Design ties - Types and Casting out. Brief study of Electronic Jacquards.	14
III	**Multiple Box Motion and Terry Weaving** **Multiple Box Motion:** Object – classification. Working of 2 x 1 drop box motion. Working of Eccle's drop box motion. Preparation of pattern chain for 4 x 1 drop box motion with and without card saving device. Brief study of Pick-at-will motion. Brief study of box safety device and setting up of drop box motion. **Terry weaving**: - Object - Principles of terry weaving - Working of loose reed terry motion - adjustment of pile length - fringing motion.	14
IV	**Automatic Weaving** Automatic Looms – Features - Advantages and Classification. Warp stop motion – Object and working of mechanical and electrical Warp stop motions. Working of weft replenishment mechanism. Study of Weft feeler mechanism – mechanical, electrical and optical types. Working of self threading shuttle. Working of Positive warp let-off motion. Comparison of Fabric quality in plain power loom and Auto loom. Fabric defects – Causes and Remedies.	13

V	**Weaving of Synthetic Textiles and Loom Calculations** Loom requirements to weave synthetic and blended spun yarns and filament yarns. Common Synthetic Fabric Defects and its remedies. Calculation pertaining to speed, production and efficiency of loom. Heald and Reed calculations. Cover factor calculations. Balancing of machineries in a weaving factory having 200 looms capacity. Calculation of the Ex-Mill price of fabric per meter.	13

TEXT BOOKS:

S.No	Title	Author	Publisher	Year of Publishing
1	Hand Book of Weaving	Sabit Adhenur	Technomic Publishing Company, Inc.	2001
2	Woven Fabric Production II	NCUTE	NCUTE New Delhi	2002

REFERANCE BOOKS:

S.No	Title	Author	Publisher	Year of Publishing
1	Modern Preparation and Weaving	A.Ormerod	Wood Head Publishing Ltd, London	1983
2	Principles of Weaving	Marks & Robinson (ATC)	The Textile Institute, Manchester.	1976
3	Weaving Calculations	R.Sengupta	D.B.Taraporevala sons & co Ltd., Mumbai	1996

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

IV SEMESTER

2015 – 2016 onwards

ELEMENTARY TEXTILE DESIGNS

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **:**36044

Semester **:** IV Semester

Subject Title **: ELEMENTARY TEXTILE DESIGNS**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
Elementary Textile Designs	5 Hrs	75 Hrs	25	75	100	3 Hrs

TOPICS AND ALLOCATION OF HOURS:

Sl.No.	Topic	Time (hrs.)
1	**ELEMENTS OF WOVEN DESIGN**	14
2	**PLAIN WEAVES AND TWILL WEAVES:**	14
3	**SATEEN , CREPE AND HONEYCOMB WEAVES**	14
4	**HUCK-A-BACK, MOCK – LENO & BEDFORD CORD WEAVES**	13
5	**KNITTED STRUCTURES**	13
6	**TEST & REVISON**	07
Total		75

RATIONALE:

The fundamental concepts of woven and knitted fabric structures will be taught to the students. After studying this subject student will be able to analyze various fabrics for the design, draft and peg plan.

OBJECTIVES :

- To know about the basic principles of construction of primary weaves.
- To know about the basic construction of elementary knitted structure.
- To know about the basic construction of miscellaneous elementary weaves.
- To know about the basic construction of Bedford cord, pique weaves.

IV SEMESTER
36044 - ELEMENTARY TEXTILE DESIGNS
DETAILED SYLLABUS
CONTENTS

Unit	Name of the Topic	Hours
I	**ELEMENTS OF WOVEN DESIGN** Methods of fabric representation – Weave repeat unit – Construction of draft and peg plans – Methods of indicating drafts and peg plans – Relation between design, draft and peg plan, - Construction of draft and peg plans from given design - Construction of draft from design and peg plans - Construction of designs from given draft and peg plans - (Systems) - types of drafting – Denting.	**14**
II	**PLAIN WEAVES AND TWILL WEAVES:** Plain weave - Characteristics - derivatives of plain weave –Regular and irregular warp rib, weft rib and mat weaves – Use plain weaves –Twill weaves - characteristics – Large regular twills - derivatives of twill weave - waved twills - herringbone twills, broken twills, transposed or re-arranged twills, elongated twills, combination of twill weaves – Uses of twill weaves.	**14**
III	**SATEEN , SATIN, CREPE AND HONEYCOMB WEAVES** Sateen and satin weaves - its characteristics – Regular and irregular sateen and satins. Weaves constructed on satin and sateen bases, simple developments, extensions of sateen weaves, uses of sateen weaves. Crepe weaves: - its characteristics - construction of crepe weaves upon sateen bases, combinations of floating weave with plain threads, crepe weaves produced by reversing, insertion of one weave over another – uses of crepe weaves. Honey comb weaves - its characteristics, ordinary honey comb weaves, brighten honey comb weaves - uses of honey comp weaves.	**14**
IV	**HUCK-A-BACK,MOCK–LENO&BEDFORDCORD WEAVES** **Huck-a-back weaves** – Ordinary Huck–a-back weaves – Modified Huck-a-weaves – Uses **Mock-leno weaves** - Perforated fabrics - Uses **Bedford cord** – plain faced Bedford cords – Wadded Bedford cords - Twill faced Bedford cords – Uses. Welts and pique weaves – Ordinary Welts structures – Weft wadded welts – fast back welts – waved piques	**13**

V	**KNITTED STRUCTURES** **Weft knitted Structures** – Definition of the terms - face loop, back loop, needle loop, sinker loop, stitch length, texture. Representation of weft knitted structures – symbolic and diagrammatic representation of plain 1 x 1 rib, 1 x 1 interlock - stitch notation of La coste, milano rib, ponda-di-roma structures. **Warp knitted Structures –** Definition of **open** lap, closed lap, Over lap, Under lap. Lapping diagram of Full Tricot, Lock Knit, Reverse lock knit, Satin, Queens cord and Shark slim	**13**

TEXT BOOKS:

S.No	Titile	Authors	Publisher	Year
1	Elementary Design & Colour,	Z.Crosiciki	Universal Publishing Corporation, 534, Kalbadevi Road, Dhobi Talao, Mumbai – 400 002	June 1988
2	Grammar of Textile Design	H. Nisbet	D.B. Taraporevala Sons & Co. Pvt. Ltd, Mumbai	1985

REFERENCE BOOKS:

S.No	Titile	Authors	Publisher	Year
1	Watson's Textile Design & Colour,	Z.Crosiciki	Universal Publishing Corporation, Newnes, Butterworths, England	1988
2	Structural Fabric Design	James W. Klibbe	North Carolina State University Printshop	1965
3	Woven Cloth Construction	ATC Robinson R. Mark	Textile Institute, Manchester	1973

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

IV SEMESTER

2015 – 2016 onwards

COLOUR AND WEAVE EFFECTS PRACTICAL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION &TRAINING , TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN &WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **:** 36345

Semester **:** IV Semester

Subject Title **: COLOUR AND WEAVE EFFECTS PRACTICAL**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject	Instructions		Examination			
			Marks			Duration
COLOUR AND WEAVE EFFECTS PRACTICAL	Hours/Week	Hours/ Semester	Internal Marks	Board Exam	Total	
	4	60	25	75	100	3 Hrs

RATIONALE:

To enhance practical knowledge to create stripe and check designs. To improve knowledge for drafting checked and stripe designs from woven fabric. To develop designs with the help of Textile CAD and other painting software.

GUIDELINES:

- All the seventeen experiments given in the list of experiments should be completed and given for the end semester practical examination.
- In order to develop best skills every students should be provided with a separate Computer for exposing the skills in the laboratory.
- The external examiners are requested to ensure that a single experimental question should not be given to more than two students while examining a batch of 30 students during Board Examinations.

OBJECTIVES:

To make the student understand the different stripe and check designs in woven fabrics **.**

To make the student understand and create various woven dobby designs in graph sheets

To make the student understand the different combination of color and weave effects.

QUESTION PAPER PATTERN & ALLOCATION OF MARKS

Single Experiment is to be given per student

Design work	60 marks
Write up	10 marks
Viva	05 marks
Total	75 Marks

LIST OF EQUIPMENTS REQUIRED FOR A BATCH OF 30 STUDENTS

Equipment required:

Latest computers with Textile CAD Software for Dobby designs.

Materials required:

1. Paper boards, leather boards etc.
2. Graph sheets
3. A set of Poster colours and sketch pens
4. Brushes 0 No to 12 No (round and flat brushes)

IV SEM

36345- COLOUR AND WEAVE EFFECTS PRACTICAL

LIST OF EXPERIMENTS

1. Creating Forms of Stripes and Checks in J K board / Point paper using color media with reference to the selection of weaves.

2. Producing stripe / Check designs in point paper for the following:Effects produced in one weave turned in opposite direction- Combination of weaves derived from the same base.

3. Producing point paper designs for Combination of warp and weft face weaves-Combination of
different weaves-Use of motif designs-Crammed stripes and checks.

4. Producing stripe / Check designs in point paper for the following
Fancy weave stripes upon satin grounds – Zephyr stripes and checks – Oxford shirting

5. Producing designs in Point paper for understanding Application of colour for the following
Simple regular patterns - Simple irregular patterns - Compound orders of colouring -

6. Producing designs in Point paper with Modification of stripe and check patterns

7. Developing designs in Point paper with methods of producing variety of effects in the same
weave and coloring.

8. Producing designs in Point paper for the following
Simple colour & weave effects- Continuous line effects –- bird's eye and spot effects

9.Producing designs in Point paper for the following Stripe colour and weave effects
Change the relative position of the weave and colouring - simple weave and simple wefting with compound warping - stripe weave and simple wefting with simple warpings.

10. Producing designs in Point paper for the following Check colour and weave effects
Change the relative position of the weave and colouring - simple weave, compound warping and compound wefting - stripe weave and compound wefting with simple and compound warping - check weave, simple and compound wefting with simple and compound warping.

11. Practicing and learning step by step commands of Textile cad dobby software to produce simple stripe and check designs.

12.Producing design with fabric simulation in Textile CAD dobby software for a given stripe / check fabric and also showing calculation sheet.

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY
(TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

IV SEMESTER

2015 – 2016 onwards

FABRIC MANUFACTURE – II PRACTICAL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION &TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN &WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **:**36346

Semester **:**IV Semester

Subject Title **:**FABRIC MANUFACTURE – II PRACTICAL

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject	Instructions		Examination			
	Hours / Week	Hours / Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
FABRIC MANUFACTURE – II PRACTICAL	5 Hrs	75 Hrs	25	75	100	3 Hrs

RATIONALE:

To enhance practical knowledge about the dobby, jacquard, drop box and terry mechanisms students will get hands on training by dismantling and assembling the each mechanism individually. And also the mechanisms of automatic shuttle looms like positive let-off, cop changing, warp stop motion will be dismantled and assembled during the practical.

GUIDELINES:

- All the fourteen experiments given in the list of experiments should be completed and given for the end semester practical examination.
- In order to develop best skills every students should be provided with a separate Weaving machine for exposing the skills in the laboratory.
- The external examiners are requested to ensure that a single experimental question should not be given to more than two students while examining a batch of 30 students during Board Examinations.

OBJECTIVES:

Dobby

- Todismantle and assemble the various parts of the Dobby mechanism.
- To set the dobby for correct working with timing and setting.
- To peg the lattice for LH dobby for the given weaves
- To peg the lattice for RH dobby for the given weaves

Drop box

- Todismantle and assemble the various parts of the Drop box mechanism for correct working with timing and setting.
- To prepare a chain of metallic cards for weaving a given pattern without card saving device in a drop box loom.
- To prepare a chain of metallic cards for weaving a given pattern with card saving device in a drop box loom

Jacquard

- To draw the diagram of a jacquard and to understand the working of a Jacquard mechanism with functions of various parts.
- To draw the timing diagram of a jacquard for various actions.

Automatic loom

- To Dismantle and assemble the various mechanisms of the automatic loom with timing and settings.

Loom and fabric calculations

- ❖ To study about the Quality particulars of Commercial Fabrics like Long Cloth, Casement,
- ❖ Cambric, Voile, Mull and Poplin.
- ❖ To Calculate and understand the Cost of fabric per meter for the given Striped / Checked fabric

GUIDELINES:

- o All the 12 experiments given in the list of experiments should be completed and given for the end semester practical examination.
- o In order to develop best skills every students should be provided with a separate Weaving machine for exposing the skills in the laboratory.
- o The external examiners are requested to ensure that a single experimental question should not be given to more than two students while examining a batch of 30 students during Board Examinations.

QUESTION PAPER PATTERN &ALLOCATION OF MARKS

Single experiment is to be given per student

Experiment	50 marks
Write up / diagram / calculations	20 marks
Viva	05 marks
Total	75 Marks

LIST OF EQUIPMENTS REQUIRED FOR A BATCH OF 30 STUDENTS

Dobby loom	- 1 no
Jacquard loom	- 1 no
Terry loom	- 1 no
Drop box loom	- 1 no
Automatic loom	- 1 no

IV SEMESTER

36346- FABRIC MANUFACTURE – IIPRACTICAL

LIST OF EXPERIMENTS

1. Setting the Dobby mechanism for correct working with timing.
2. Pegging the lattice for LH dobby for the given weaves: Honey Comb and Mock Leno.
3. Pegging the lattice for RH dobby for the given weaves: Huck-a-back and Herring Bone Twill
4. Setting the Drop box mechanism for correct working with timing.
5. Preparation of a chain of metallic cards for weaving a given pattern without card saving device in a drop box loom.
6. Preparation of a chain of metallic cards for weaving a given pattern with card saving device in a drop box loom.
7. Sketching the Jacquard mechanism with timing diagram for correct working
8. Sketching the Terry mechanism & setting for correct working with timing.
9. Settingthe Mechanical weft feeler in cop changing mechanism for correct working with timing
10. Settingthe Cop changing mechanism for correct working with timing.
11. Setting the Warp stop motion for correct workingwith timing.
12. Setting the Positive let-off motion for correct working with timing.

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

II YEAR

M - SCHEME

IV SEMESTER

2015 – 2016 onwards

ELEMENTARY TEXTILE DESIGN PRACTICAL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION &TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN &WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma In Textile Technology (Textile Design & Weaving)

Subject Code **:** 36347

Semester **:**IV Semester

Subject Title **: ELEMENTARY TEXTILE DESIGN PRACTICAL**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
ELEMENTARY TEXTILE DESIGN PRACTICAL	5	75	25	75	100	3Hrs

Rationale:

To enhance the practical knowledge to analyse the sample of cloth, this fundamental, help the students to acquire knowledge about the design, draft and peg plan loom requirement to weave the cloth.

Guidelines:

- All the 12 cloth samples given in the list of experiments should be completed and given for the end semester practical examination.
- In order to develop best skills every students should be provided with a separate fabric sample of suitable size.
- The external examiners are requested to ensure that a single experimental question should not be given to more than two students while examining a batch of 30 students during Board Examinations

OBJECTIVES

Woven fabric analysis

To identify warp and weft threads, selvedge, weaving method and machine to produce the fabric.

To analyze the given fabric and find out design, draft and peg plan.

Woven fabric quality particulars

To find out the particulars like Ends and picks per unit length, Count of warp and weft, crimp percentage.

Knitted fabric analysis

To identify warp and weft threads, selvedge, weaving method and machine to produce the fabric.To analyze the given fabric and find out design, draft and peg plan

Knitted fabric quality particulars

To find out the particulars like Ends and picks per unit length, Count of warp and weft, crimp percentage

Fabric costing

With the above particulars the student has to do fabric costing by suitable formulae explained to them during practical.

QUESTION PAPER PATTERN &ALLOCATION OF MARKS

Single experiment is to be given per student

Experiment / Design Work	60 marks
Write up	10 marks
Viva - Vice	05 marks
Total	75 Marks

LIST OF EQUIPMENTS REQUIRED

Equipments required:- Beesley`s Balance 1 no

Materials required : - 2 Meters of each samples for a batch of 30 students.

IV SEMESTER

36347- ELEMENTARY TEXTILE DESIGN PRACTICAL

LIST OF EXPERIMENTS

1. Analyse the given piece plainof cloth ,mark the design, draft, peg plan, giving cloth particularsand estimate the cost per metre of the fabric with loom requirement.
2. Analyse a given striped / checked cloth sample, find out the cloth particulars, pattern and estimate the cost per metre of the fabric.
3. Analyse a given twill weave cloth sample, find out the cloth particulars and estimate the cost per metre of the fabric.
4. Analyse a given drill cloth sample, find out the cloth particulars and estimate the cost per metre of the fabric.
5. Analyse a given satin weave cloth sample, find out the cloth particulars and estimate the cost per metre of the fabric.
6. Analyse a given crepe weave cloth sample, find out the cloth particulars and estimate the cost per metre of the fabric.
7. Analyse a given honey comb weave cloth sample, find out the cloth particulars and estimate the cost per metre of the fabric.
8. Analyse a given huck-a-back weave cloth sample, find out the cloth particulars and estimate the cost per metre of the fabric.
9. Analyse a given mock leno weave cloth sample, find out the cloth particulars and estimate the cost per metre of the fabric.
10. Analyse a given Bedford cord weave cloth sample, find out the cloth particulars and estimate the cost per metre of the fabric.
11. Analyse a given single jersey knitted cloth sample, find out the cloth particulars and estimate the cost per metre of the fabric.
12. Analyse the given piece of 1 * 1 rib knitted cloth, find out the cloth particulars and estimate the cost per metre of the fabric.

V SEMESTER

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

IV SEMESTER

2015 – 2016 onwards

TEXTILE TESTING

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **:**36051

Semester **:**V Semester

Subject Title **:TEXTILE TESTING**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
TEXTILE TESTING	5	75	Internal Assessment	Board Examination	Total	
			25	75	100	3 Hrs

Topics and allocation of hours:

Sl.No.	Topic	Time (hrs.)
1	**MOISTURE AND ITS RELATIONS IN TEXTILES**	14
2	**FIBRE TESTING**	14
3	**YARN TESTING:**	14
4	**FABRIC TESTING:**	13
5	**STATISTICAL QUALITY CONTROL**	13
6	**TESTING & REVISON**	07
Total		75

RATIONALE:

This subject deals about moisture and its relations in textiles, fibre testing, yarn testing, fabric testing and statistical quality control. After studying this subject, student will be able to understand the principles & working of testing instruments.

OBJECTIVES

- To know the relationship of moisture with textile and related terms & definitions.
- To understand the principle and the methods of determining the moisture in the atmosphere and the textile materials.
- To know the properties and their importance of fibre which is the raw material for all the textile goods.
- To understand the principles and the methods of testing the fibres to determine their basic characteristics.
- To know the properties and the importance of the yarn.
- To understand the principles and the methods of testing the yarn to determine its properties
- To know the quality characteristics of the fabric required for different end uses.
- To study the principles and the methods of testing the fabric to determine their quality characteristics.
- To study the statistical methods involved in controlling the quality of the textile products during their manufacture
- To learn about the application of the statistical methods to suit textile processes.

V Semester
36051-TEXTILE TESTING
DETAILED SYLLABUS
Contents

Unit	Name of the Topic	Hours
I	**MOISTURE AND ITS RELATIONS IN TEXTILES** **Humidity and its importance in Textiles** - Definitions of Absolute Humidity, Relative Humidity, Standard Testing atmospheric condition, Measurement of Humidity - Wet and dry bulb Hygrometer, Definition of Moisture content, Moisture regain - Estimation of moisture content and regain using Conditioning oven and Shirley Moisture meter, Standard regain – Definition - standard regain values of cotton, viscose, silk, wool, nylon and polyester - Effect of moisture regain on fibre properties	14
II	**FIBRE TESTING** Length – Importance of fibre length - Definition of effective length - Methods of measuring fibre length by Baer Sorter and Digital Fibro graph. Fibre fineness - Importance of fibre fineness - Methods of measuring fibre fineness by Sheffield micronaire instrument. Fibre maturity – Importance, measurement of fibre maturity by sodium hydroxide swelling method - Maturity ratio and Maturity coefficient. Fibre strength - Importance and method of measuring fibre strength by Stelometer . Estimation of trash content by Shirley Trash Analyser. Fibre Quality Index - Brief idea about High volume instrument and Advanced Fibre Information System(AFIS)	14
III	**YARN TESTING** Yarn count – Determination of yarn count by Auto sorter and Beesley balance - Importance of CSP and RKM - Importance of Twist - Estimation of yarn twist – single yarn, doubled yarn. Importance of yarn strength - Principle of working of yarn strength testers – CRE,CRL and CRT - Working of single yarn strength tester of pendulum lever type, lea strength tester and principle of Instron tester. Yarn irregularities – thick, thin, slub, nep - Methods of Assessing yarn evenness by yarn - appearance board and Uster Evenness Tester - Brief study of Uster classimate.	14
IV	**FABRIC TESTING** Crimp-Definition, Importance – Shirley crimp tester. Study of Shirley stiffness tester and Shirley crease recovery tester. Definition of fabric handle, serviceability, abrasion, pilling and drape. Importance of fabric tensile strength, tearing strength and bursting strength. Study of fabric tensile strength tester. Definition of Fabric Air Permeability and Fabric Air Resistance	13

V	**STATISTICAL QUALITY CONTROL** Classification and Tabulation of Data - Frequency Diagram – Histogram and frequency polygon. Measures of Central tendency - Mean, Median, Mode. Simple Calculation of Mean, Median, Mode. Measures of dispersion - Mean Deviation, Percent Mean Deviation, Standard Deviation and Co-efficient of variation. Simple calculation of MD,PMD,SD& CV. Normal distribution curve and its properties. Quality Control Chart - Definition, use, Construction of control chart for Averages and Ranges.	13

TEXT BOOKS:

S.No	Titile	Authors	Publisher	Year
1	Hand Book of Textile Testing and quality Control	E.B.Groover and D.S.Hamby	Mohinder Singh Sejwal (for Wiley Eastern Ltd New Delhi,India	1960
2	Hand Book of Methods of Test for Cotton Fibers Yarn and Fabrics	V.Sundaram and R.L.N.Iyengar	CTRL.,Mumbai	1988
3	ISI Hand book of Textile Testing		Indian Standard Institution, New Delhi, India	1982

REFERENCE BOOKS:

S.No	Titile	Authors	Publisher	Year
1	Principles of Textile Testing	J.E.BOOTH	Butterworth Scientific London	1996
2	The Characteristics of Raw Cotton Vol II Part-I in the series manual of Cotton Spining	E.Lord	The Textile Institute and Butterworth,England	1961
3	Methods of Test for Textiles – B.S.Hand book No.11,	B.S.I	British Standards Institution,London, England	1963
4	Method of Test for Textiles BS Hand book NO 11,	B.S.I	British Standards Institution,London, England	1963
5	Statistical methods	Gupta	S.Chand & Co,.New Delhi	1983
6	An Outline of statistical methods for use in the Textile Industry	A.Brearley & D.R.Cox	WIRA, LEEDS,U.K.	1974
7	Theory and problems of Statistics	M.R.Spiegel	McGraw Hill, International Book company Newyork,London	1972

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY
(TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

V SEMESTER

2015 – 2016 onwards

TEXTILE WET PROCESSING

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **:**36052

Semester **:**V Semester

Subject Title **:TEXTILE WET PROCESSING**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
TEXTILE WET PROCESSING	5	75	25	75	100	3 Hrs

Topics and allocation of hours:

Sl.No.	Topic	Time (hrs.)
1	**PREPARATORY AND BLEACHING PROCESS**	14
2	**DYEING PROCESS**	14
3	**PRINTING PROCESS**	14
4	**FINISHING PROCESS**	13
5	**QUALITY AND POLLUTION CONTROL**	13
6	**TEST & REVISION**	07
Total		75

RATIONALE

To enhance knowledge in processing concepts, this subject is introduced.

To understand the preparatory process in processing, a well detailed syllabus is given.

To improve the knowledge in dying, printing, finishing, quality & pollution control topics are included.

OBJECTIVES

- To understand the Preparatory process of Textiles
- To learn about Process of Bleaching.
- To learn different types of Dyes and applications
- To learn about varies processing machineries.
- To understand the types of Printing and Techniques
- To know about the screen preparation
- To know about different Textile finishes and Application
- To learn about special finishes and advantages
- To understand the Quality control methods in Wet Processing.
- To understand the Eco- friendly Processing& Effluent Treatment process

V Semester
36052 - TEXTILE WET PROCESSING
DETAILED SYLLABUS

Content : Theory

Unit	Name of the Topic	Hours
1	**Preparatory and Bleaching Process** Impurities present in grey cotton and cotton fabric - sequence of wet processing treatments with objectives of each treatment - Singeing - Gas Singeing Machine for woven fabric with line diagram - Desizing - Continuous desizing method and its merits - Enzyme desizing - Scouring - Mechanism of scouring - Process of caustic scouring using high pressure kier. **Bleaching** – Hydrogen Peroxide Bleaching- Continuous scouring and bleaching using Continuous Bleaching Range (CBR) –Optical Brightening Agent treatment	14
2	**Dyeing Process** Definition of dyeing - Classification of dyes based on their mode of application - Dyeing of cotton with Reactive dyes and vat dyes - Dyeing of wool with acid dyes - Dyeing of silk with basic dyes - Dyeing of Polyester with Disperse dyes - Dyeing machines - Working of jigger Soft flow jet dyeing machine - HTHP Beam dyeing machine, cheese dyeing machine. Garment dyeing – Advantage and disadvantage – Working of drum type Garment dyeing machine.	14
3	**Printing Process** Definition and objective of printing - Comparison between dyeing and printing –Styles and methods of printing - Definition and functions of Ingredients of printing paste. Direct style of printing with pigments on cotton - Direct style of printing with reactive dyes on cotton - Direct style of printing with Disperse dyes on polyester - Screen preparation - Flat bed screen printing machine - Rotary screen printing machine - curing machine -steamer	14

4	**Finishing Process** Purpose of finishing - Stiff finishing of cotton fabric with Starch, Polyvinyl Acetate –Types of softeners and their properties - wrinkle free finish-Sanforizing – Mercerisation - Advantages – Chainless mercerising machine - calendering - Hot air stenters Anti crease finish with DMDHEU Resin - Brief study on antimicrobial finish - UV protective finish - water repellent finish - Flame retardant finish (Only objectives and recipe)	13
5	**Quality and pollution Control** Importance of Quality Control –Different Fastness Tests for dyed and printed materials - Determination of wash fastness - Wet and Dry rubbing fastness – Computer Colour Matching - Objectives & Limitations – Importance and need of environment protection - Air, water and noise pollution. Brief study on Effluent Treatment Process flow chart only. Brief study on eco-friendly processing - List of banned chemicals and alternatives.	13

TEXT BOOKS:

S.No	Titile	Authors	Publisher	Year
1	Technology of Textile Processing Vol.3 Technology of Bleaching	Shenai V.A.	Shevak Publications 306 Shri Hanuman Industrial Estate Gousmbekar Road,Wadala Mumbai – 37	1981
2	Technology of Textile Processing, Vol.2 Chemistry of dyes & Principles of dyeing	Shenai V.A.	Shevak Publications 306 Shri Hanuman Industrial Estate Gousmbekar Road Wadala, Mumbai - 37	1983
3	Technology of Textile Processing, Vol.6 Technology of Dyeing	Shenai V.A.	Shevak Publications 306 Shri Hanuman Industrial Estate Gousmbekar Road Wadala, Mumbai - 37	1980

REFERENCE BOOKS :

S.No	Titile	Authors	Publisher	Year
1	Technology of Textile Processing, Vol.4 Technology of Printing	Shenai V.A.	Shevak Publications 306 Shri Hanuman Industrial Estate Gousmbekar Road Wadala, Mumbai - 37	1979
2	Technology of Textile Processing, Vol. 10 Technology of Finishing	Shenai V.A.	Shevak Publications 306 Shri Hanuman Industrial Estate Gousmbekar Road Wadala Mumbai – 37	1987
3	Textile Printing	Miles L.W.C.	Society of Dyers & Colourist Perlein House 82 Gratlan Road, Broard fard West Yarkshire, England	1981
4	An Introduction to Textile Finishing	Marsh J.T.	B.I.Publications 54 Janpath New Delhi 110 001	1982

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

V SEMESTER

2015 – 2016 onwards

ADVANCED TEXTILE DESIGNS

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **:**36053

Semester **:**V Semester

Subject Title **:** ADVANCED TEXTILE DESIGNS

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
ADVANCED TEXTILE DESIGNS	5	75	25	75	100	3 Hrs

Topics and allocation of hours:

Sl.No.	Topic	Time (hrs.)
1	**FIGURING WITH EXTRA THREADS**	14
2	**BACKED CLOTHS**	14
3	**DOUBLE CLOTHS**	14
4	**FIGURED PIQUES AND LENO STUCTURE**	13
5	**PILE STRUCTURES**	13
6	**TEST & REVISION**	07
Total		75

Rationale :

The knowledge of advanced textile designs is essential for textile design and weaving students who pursue their career astextile designer. Also the modern

weaving calls for creativity in textile designing and hence this subject is included in the curriculum.

Objectives :

- To understand the extra warp and extra weft figuring.
- To have knowledge about backed cloths.
- To know about double cloth.
- To understand the figured pique structure.
- To know about the principle of construction of leno structure.
- To understand terry pile structures.
- To have knowledge about velvet and velveteen's.

V SEMESTER

36053 - ADVANCED TEXTILE DESIGNS

DETAILED SYLLABUS

CONTENTS

Unit	Name of the Topic	Hours
I	**FIGURING WITH EXTRA THREADS:** Methods of introducing extra figuring threads - methods of disposing of surplus extra threads - comparison of extra warp with extra weft figuring - extra warp figuring -figuring with one extra warp, two extra warps. Extra weft figuring - figuring with one extra weft , two extra wefts - clipped spot effects.	14
II	**BACKED CLOTHS:** Principles of constructions - weft backed cloths – Reversible weft backed Weaves – Methods of weft backing standard weaves – warp backed cloths - Reversible warp backed Weaves - Methods of warp-backing standard weaves – figured backed – Warp Backed Figured cloths – Weft Backed Figured cloths. Backed cloths with wadding threads – Weft backed and warp wadded design - Warp backed and weft wadded design. Interchanging backed cloths – Imitation backed cloths.	14
III	**DOUBLE CLOTHS:** Classifications of double cloth - self stitched double cloths – Construction of squared paper designs – selection of suitable stitching position – face to back and back to face stitching wadded double cloths – weft wadded double cloths – warp wadded double cloths – centre - stitched double cloths - centre warp stitching centre weft stitching. Interchanging plain double cloths. Trible cloth – systematic Construction of trible cloth.	14
IV	**FIGURED PIQUES AND LENO STUCTURE:** Figured Pique fabrics - classifications of the structures - loose back piques - half fast back piques – fast back piques. method of designing - four pick , five pick and six pick, Structures. Leno structure:- the principle of leno structure , Formation of basic sheds in leno weaving - leno weaving with flat steel doup with an eye.	13
V	**PILE STRUCTURES:** Terry pile structures - formation of the piles , terry weaves – 3 pick , 4 pick , 5 pick and 6 pick terry - terry ornamentation - stripe and check dobby designs , figured	13

	terry pile fabrics. Weft pile structures:- All over or plain velveteens – plain back velveteens - length of the pile - density of the pile - changing the density of the pile. fast pile structures .Twill back velveteens , corded velveteens or corduroy. Velvet – All over or continuous pile structure - Fast pile structure.	

TEXT BOOKS:

S.No	Titile	Authors	Publisher	Year
1	Grammar of Textile Design	H. Nisbet	D.B. Taraporevala Sons & Co. Pvt. Ltd, Mumbai	1985
2	Watson's Advanced Textile Designing,	Z.Crosiciki	Universal Publishing Corporation, Newnes, Butterworths, England	1989
3	Structural Fabric Design	James W. Klibbe	North Carolina State University Printshop Raleigh NC	1965

REFERENCE BOOKS:

S.No	Titile	Authors	Publisher	Year
1	Woven Cloth Construction	ATC Robinson R. Mark	Textile Institute, Manchester	1973
	Analysis Of Woven Fabrics	A.F. Barker & E.Midgley	Textile Institute, Manchester	2007

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

V SEMESTER

2015 – 2016 onwards

JACQUARD DESIGNS FOR HOME AND APPERAL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma In Textile Technology (Textile Design & Weaving)

Subject Code **:**36371

Semester **:**V Semester

Subject Title **:JACQUARD DESIGNS FOR HOME &APPERAL (ELCTIVE 1)**

TEACHING AND SCHEME OF EXAMINATION

No of weeks per semester: 15

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
JACQUARD DESIGNS FOR HOME AND APPERAL	5 Hrs	75 Hrs	25	75	100	3 Hrs

Topics and Allocation of Hours:

Sl.No	Topic	Time (hrs.)
1	**Construction of Jacquard Designs**	14
2	**Development of figures & Composition of Designs**	14
3	**Arrangement of Designs**	14
4	**Fashion Research and Design Sources**	13
5	**Soft Furnishing**	13
6	**Test & revision**	07
	Total	75

RATIONALE:

The students will learn aboutconstruction and development of jacquard designs & composition of designs in textiles. And also they will be taught about fashion research and design sources for clothing. Soft furnishing styles and fabrics like drapes, curtains, cushions, etc.,

OBJECTIVES:

- To have knowledge aboutconstruction and development of jacquard designs & composition of designs, construction of squared paper designs, development of figures, insertion of ground weaves, composition of designs.

- To have knowledge about arrangement of figures, simple spot designs, unit repeating designs, construction of designs from incomplete repeats, irregular sateen bases

- To have knowledge aboutfashion research and design sources and Soft Furnishing.

V-Sem
ELECTIVE - 1
36371- JACQUARD DESIGNS FOR HOME AND APPERAL
DETAILED SYLLABUS
CONTENTS

Unit	Name of the Topic	Hours
I	**CONSTRUCTION OF JACQUARD DESIGNS** **Harness and Design Calculations -** Set of the Harness - Number of Harness cords to each Hook - Casting out in Jacquards - Size of Repeat - Methods of Modifying the Repeat in a lay over, Tie - Counts of Design paper - Summary of calculations - Irregularly Dented Jacquard designs. Special Harness ties - Centre or point-ties - Mixed ties - Ties for Bordered fabrics – Palllov - Cross border jacquard arrangements. Sizes of jacquard and cards **Construction of squared paper designs** – Process of drafting a sketch design – Drafting designs from woven fabrics. **Electronic jacquards** - function and principle of electronic jacquard machine. Design, development and production of fabrics in electronic jacquards.	14
II	**DEVELOPMENT OF FIGURES &COMPOSITION OF DESIGNS** **Development of figures -**Prevention of long floats – Bold and flat development – Development of large figures – Use of warp and weft float in figure development – Figure shading – Double shading – Shaded development of figures. **Insertion of ground weaves -**Printed ground weaves – Joining of figure and ground – Crepe ground weaves – Stenciling ground weaves. Correct and incorrect design drafting **Composition of designs –**Methods of composing jacquard designs – Natural or artificial form – Geometrical form – Traditional form- Abstract form. Conditions to observe in designing figured fabrics - factors which influence woven design - Construction of sketch designs – design unit and design repeat -Geometric Ornamentation - Construction of Symmetrical Figures – Turn over , turn round designs- Reversing Inclined Figures.	14

III	**ARRANGEMENT OF DESIGNS** **Unit repeating designs** **The drop device –** Half-drop designs – Half-drop bases – The diamond base – The ogee base – The diagonal waved line base – The rectangular base – Drafting half-drop designs – Half-drop stripe designs – Defective half-drop designs – One-third and one quarter-drop designs. **Drop Reverse Designs -** Comparison of Half-drop and drop-reverse designs - drop-reverse base - diamond and ogee bases - the vertical waved line base - the rectangular base - systems of drafting drop-reverse designs - drop-reverse stripe designs - vertical reversing of figures - combination of half-drop and drop reverse systems. **Sateen Systems of Distribution -** Comparison of regular and irregular sateen arrangements – Advantages of sateen bases – Regular sateen arrangements – Methods of distributing the figures - Methods of reversing the figures – Size of repeat – Methods of drafting the sateen arrangements. **Irregular sateen bases -** Satinette arrangements – Irregular six-sateen arrangements – Irregular eight-sateen arrangements. Construction of design from incomplete repeats	14
IV	**FASHION RESEARCH AND DESIGN SOURCES** **Fashion Selection** – Aesthetic Appeal – Color – Texture – Style - Practical Considerations – Price – Fit – Comfort – Appropriateness – Brand or designer Label – Fabric performance and care – Quality – Convenience **Fashion Categories** – Women's wear – Clothing categories –Size Ranges –Styling and Price Ranges – Men's Wear – Clothing categories – Styling – Price ranges –Size ranges – Children's wear – Categories – Sizing – Styling – Pricing Ranges **Design Sources** – Historic and Ethnic Costume – Historic Inspiration – Folk Influences - – Vintage Clothing Shops and Services – Museums – Libraries and Bookstores – The Arts – Fabrics – Travel – Form follows function – The street Scene – The turn of the Century – Awareness. **Fashion in Apparel** – Fashion in apparel follows consumer needs – Fashion in industry – How fashion functions in the apparel industries – A new fashions first an idea – Sources of new ideas for clothing.	13

V	**SOFT FURNISHING** **Style** – Influences and Imagination – Making an Inspiration board – Classical Style – European Styles – International Designers – contemporary classic – Innovation and Inspiration – Color and Light – Pattern on pattern – An artists approach **Fabrics** – Color – Texture and Weave – Pattern – Choosing the right fabric – Where to begin – The effect of Light – Color and tone – Color emphasis – Color scheming – Walling and tenting – Linen and cotton – Wool and silk – Traditional prints – Furnishing with finished fabrics **Curtains and Drapes** – Curtains in context: their evolution – Window dressing – Special solutions – Making decisions and measuring up – Tracks and Poles – Headings and tapes – Hold backs – Tie backs – Tie on curtains – Unlined curtains – Hand- pleated headings – Swags and tails – Bed curtains – Sheers and voiles – Blinds – Braids and trims **Cushions and Pillows** – Setting the style – Trimmings – Shapes and fillings – Closures and Fastenings – Scatter Cushions – Piping and frills – Buttons and beads – Tied corner cushion – Bolsters – Boxed Cushions – Bed pillows – Bordered cushions – No sew cushions – Children's Cushions – Appliqué Cushions – **Soft Seating and Cover ups** – drop in chair seat cover – Over- Stuffed chair seat cover – Classic loose covers – Dressed up dining chair – Slip on chair cover – instant cover ups – Buying old chairs **Accessories** – Laundry bag – Lined basket – toweling mat – Original lampshades – Re covering an old lampshade – Desktop accessories – Templates .	13

TEXT BOOKS:

S.No	Title	Author	Publisher	Year of Publishing
1.	Watson's Advanced Textile Designing	Z.Crosiciki	Universal Publishing Corporation, Newnes, Butterworths,England	1989
2	Soft Furnishing	HAMLYN	REED INTERNATIONAL BOOKS	1997

REFERENCE BOOKS:

S. No.	Title	Author	Publisher	Year of publishing
1	The art of costume & personal appearance	Grace Margrait Morton	John valley & sons , London	2000
2	Color and design in apparel	Bernice G.chambers, M.A.	Prenticde – Hall ,INC	2001

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

V SEMESTER

2015 – 2016 onwards

TECHNICAL TEXTILES

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma In Textile Technology (Textile Design & Weaving)

Subject Code **:**36072

Semester **:**V Semester

Subject Title **:TECHNICAL TEXTILES, ELECTIVE– II**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
TECHNICAL TEXTILES	5	75	25	75	100	3 Hrs

Topics and allocation of hours:

S.No.	Topic	Time (hrs.)
1	**INTRODUCTION**	**14**
2	**MEDICAL TEXTILES**	**14**
3	**GEO TEXTILES**	**14**
4	**FUNCTIONAL CLOTHING**	**13**
5	**TRANSPORTATION TEXTILES**	**13**
6	**TEST & REVISION**	**07**
Total		**75**

OBJECTIVES

- To know about the Technical textiles and classification of technical textiles.

- .To know about the Medical textiles and classification of medical textiles, characteristics of material used.
- To know about the geo textiles and function of geo textiles.
- To know about the functional clothing and classification of protective clothing.
- To know about the Transportation textiles. Fibre and yarns used in the Transportation textiles.

V Semester
ELECTIVE 2
36072 - TECHNICAL TEXTILE
DETAILED SYLLABUS
CONTENTS

Unit	Name of the Topic	Hours
I	**INTRODUCTION:** Introduction to technical textiles – Definition – Difference between technical textiles and other textiles – classification of Technical textiles and applications (Agriculture, Horticulture, Construction, Medical, Geo Textrile, Transportation, Safety and sports) Types of fibres used and properties Ultra fine, Micro fibres, Nano fibres, Hollow fibres Aramid fibres, Carbon, Nomex, Kevlar and glass fibres.	14
II	**MEDICAL TEXTILES:** Definitions – characteristics of material used.- classification of surgical textiles – Application and Fibres used in Non-implantable materials like wound dressing, Bandage and gauze cloth. Application and Fibres used in implantable materials like vascular graft, sutures and heart valves. Fibre requirements for Extra corporeal devices such as skin, lever and kidney. Application and fibre requirements in healthcare and hygiene products such as surgical gowns, masks and wipes.	14
III	**GEO TEXTILES** Geo Textile: Definition – geo textile properties – physical, mechanical, hydraulic, environmental. Function of geo textiles (separation, Filtration reinforcement, drainage and protection) Types of Geo textiles:- Brief study of Geo grids, Geo membranes and woven and non woven geo textiles. Application of geo textiles – Road work, railway work, erosion control, Drainage systems.	14

IV	**FUNCTIONAL CLOTHING:** Definition – classification – safety and Protective Clothing (Environmental hazard) – Fibres used, properties and application of High temperature clothing **–** flame protective clothing – chemicalProtective Clothing – Electro Protective Clothing - High visibility clothing, - Defense clothing (Camouflage dress, Bullet proof, Non visibility clothing, tent and parachute) – Application and fibres uses in Sports wear .	13
V	**TRANSPORTATION TEXTILES** Introduction – Fibre requirement and applications seat belts, Air bags, seat cover. Applications, Fibres and Yarns used Conveyor and Transmission belt. Fibres and Yarns used in Tyre cods fabrics. Fibre and yarns used in industrial hoses, Textiles in car, Train, air craft and marine applications.	13

TEXT BOOKS:

S.NO	TITLE	AUTHOR	PUBLISHERS	YEAR
1	Fiber materials for Advanced Technical Textile	T. Matsuo	CRC publication,	2008
2	Industrial Application of Textiles for Filtration and coated fabrics	Pushpa B., and Sengupta, A.K	Textile progress, Vol.14,	1992

REFERENCE BOOKS:

S.NO	TITLE	AUTHOR	PUBLISHERS	YEAR
1	Hand book of Technical Textiles	A R Horrocks and S C Anand	The Textile Institute, Manchester, U.K., , Woodhead Publishing limited, Cambridge England.	2000
2	Handbook of Industrial Textiles	Sabit Adanur, Wellington sears	Technomic publishing company, Inc, Lancaster, U.S.A. ISBN:1-56676-340-1,	1995.
3	Geotextiles	N..M John	Blackie, London, ISBN: 0-216-91995-9,	1987
4	Medical Textiles	S. Anand	Text. Inst., , ISBN: 185573317X	1996

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

V SEMESTER

2015 – 2016 onwards

TEXTILE TESTING PRACTICAL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma In Textile Technology (Textile Design & Weaving)

Subject Code **:**36355

Semester **:** V Semester

Subject Title **: TEXTILE TESTING – PRACTICAL**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
TEXTILE TESTING PRACTICAL	5	75	Internal Assessment	Board Examination	Total	
			25	75	100	3 Hrs

Rationale:

- To enhance the practical knowledge of testing textile fibre, yarn and fabric and analyzing the data.
- To handle the various testing instruments for fibre, yarn and fabric.

Guidelines:

- All the 12 experiments given in the list of experiments should be completed and given for the end semester practical examination.
- In order to develop best skills in handling instruments / equipments and taking readings in the practical classes, every two students should be provided with a separate equipment set up for doing experiments in the laboratory.
- The external examiners are requested to ensure that a single experimental question should not be given to more than four students while admitting a batch of 30 students during Board Examinations.

OBJECTIVES

- To understand the working of various textile testing (fibre, yarn and fabric) instruments.

Fibre testing

- To have practical knowledge in the textile testing areas.
- Determination of fibre length using Baer Sorter.
- Determination of trash content by Trash Analyser.
- Determination of fibre fineness by Sheffield Micronaire.

Yarn Testing

- Determination of count by cutting and weighing method.
- Determination of single yarn twist by tension type twist tester.
- Determination of ply yarn twist by take up twist tester.
- Determination of single yarn strength.
- Determination of Lea strength and CSP.
- Determination of yarn appearance grade as per ASTM visual examination method.

Fabric testing

- Determination of fabric tensile strength by tensile strength tester
- (Warp way & Weft way).
- Determination of fabric tearing strength (Warp way & Weft way).
- Determination of bending modulus by stiffness tester for given sample of
- fabric (Warp way & Weft way).
- Estimation of bursting strength of a given fabric.
- Determination of crease recovery angle in warp way & weft way.

.

QUESTION PAPER PATTERN &ALLOCATION OF MARKS

Single experiment is to be given per student

Experiment	50 marks
Write up / diagram / calculations	20 marks
Viva	05 marks
Total	75 Marks

V Semester

36055 - TEXTILE TESTING PRACTICAL

LIST OF EXPERIMENTS

1. Determination of fibre length using Baer Sorter.
2. Determination of fibre fineness by Micronaire.
3. Determination of count ofyarn by cutting and weighing method.
4. Determination of single yarn twist by tension type twist tester.
5. Determination of ply yarn twist.
6. Determination of single yarn strength, Lea strength and CSP.
7. Determination of yarn appearance grade as per ASTM visual examination method.
8. Determination of fabric tensile strength by tensile strength tester (Warp way & Weft way).
9. Determination of fabric tearing strength (Warp way & Weft way).
10. Determination of fabric stiffness by stiffness tester (Warp way & Weft way).
11. Determination of crease recovery angle in warp way & weft way
12. Determination of crimp in warp & weft yarn for the given fabric sample.

List of equipment : - Baer Sorter, Fibre fineness tester, Wrap block, Tension type Twist tester, Lea strength tester, Yarn appearance winder, Fabric tensile strength tester, Elmendorf tearing strength tester, Ballistic tester, Fabric thickness tester, Quadrant balance, Crease recovery tester and Stiffness tester – each 1 no, physical balance – 2no.

Material required: - For a batch of 30 students.

1. Cotton fibre - 2.0 Kgs
2. Roving bobbin - 5 bobbins
3. Yarn - 100 cops any count
4. Fabric - 30 metres

Manual: Laboratory manual.

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

V SEMESTER

2015 – 2016 onwards

TEXTILE WET PROCESSTING PRACTICAL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma In Textile Technology (Textile Design & Weaving)

Subject Code **:** 36056

Semester **:** V Semester

Subject Title **:TEXTILE WET PROCESSING - PRACTICALS**

TEACHING AND SCHEME OF EXAMINATION:

NO OF WEEKS PER SEMESTER: 15 WEEKS

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
TEXTILE WET PROCESSING PRACTICAL	5	75	Internal Assessment	Board Examination	Total	
			25	75	100	3 Hrs

RATIONALE:

To get knowledge on the method of preparing the dye liquor to printing paste and dyeing and printing the yarn/ fabric. To know the different finishing treatment given to dyed fabric

OBJECTIVES:

*To get knowledge on the method of analyzing the blended yarn / fabric.

*To get the practical experience in preparing the liquor for the complete wet processing treatments.

*To get the practical experience in preparing the print paste and printing the fabric.

*To know the different finishing treatments given to the dyed fabric, depending on their end use.

*To know the different testing methods, to assess fastness of dyes to washing & rubbing.

GUIDELINES:

* All the 12 experiments given in the list of experiments should be completed and given for the end semester practical examination.

* In order to develop best skills in handling instruments / equipment and taking readings in the practical classes, every two students should be provided with a separate equipment set up for doing experiments in the laboratory.

* The external examiners are requested to ensure that a single experimental question should not be given to more than four students while admitting a batch of 30 students durong Board Examinations.

QUESTION PAPER PATTERN &ALLOCATION OF MARKS

Single experiment is to be given per student

Experiment	50 marks
Write up / diagram / calculations	20 marks
Viva - Voce	05 marks
Total	75 Marks

No. of students : 30
No. of students / Batch : 03
Total No. of batches : 10

LIST OF EQUIPMENTS REQUIRED FOR A BATCH OF 30 STUDENTS

1. Dye bath for dyeing, desizing, scouring, bleaching - 10 Nos.
2. Crockmeter for rubbing fastness testing - 01 Nos.
3. Launderometer for washing fastness testing - 01 Nos.
4. Printing table - 01 Nos.
5. Printing Screens - 02 Nos.
6. Padding Mangle - 01 Nos.

Manual **- Lab Manual**

V Semester

36056- TEXTILE WET PROCESSING PRACTICAL

LIST OF EXPERIMENTS

1. Desizing the fabric sample using enzyme.
2. Scouring& Bleaching the yarn / fabric using Hydrogen Peroxide.
3. Dyeing the cotton material with vat dyes.
4. Dyeing the cotton material with Bi-Functional reactive dyes.
5. Dyeing the polyester material with disperse dye.
6. Dyeing the wool sample with acid dye.
7. Dyeing the silk sample with basic dyes.
8. Printing the cotton fabric with reactive dye in direct style.
9. Printing the cotton fabric using Pigment by direct style.
10. Crease recovery finishingof cotton fabric with resin.
11. Testing the colour fastness of dyed textile materials to washing.
12. Testing colour fastness of dyed textile materials to rubbing.

M - SCHEME

2015 - 2016

LIFE AND EMPLOYABILIY SKILLS PRACTICAL

[Common paper for all Engineering Branch]

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU
DIPLOMA IN ENGINEERING – SYLLABUS – M Scheme
(Being implemented from the Academic Year 2016-2017 onwards)

Course Name : **All Branches of Diploma in Engineering and Technology and Special Programmes**
Subject Code : **30002**
Semester : **IV /V**
Subject Title : **LIFE AND EMPLOYABILITY SKILLS PRACTICAL**

Teaching and Scheme of Examination: **No. of Weeks per Semester: 15 Weeks**

Subject	Instruction		Examination			
			Marks			
	Hours/ Week	Hours/ Semester	Internal assessment	Board Examination	Total	Duration
Life and Employability Skills	4 Hours	60 Hours	25	75	100	3 Hours

Topics and Allocation of Hours:

Sl. No.	Section	No. of Hours
1	**Part – A** Communication	**30**
2	**Part – B** Entrepreneurship, Project Preparation, Productivity, Occupational Safety, Health, Hazard, Quality Tools& Labour Welfare	**20**
3	**Part – C** Environment, Global Warming, Pollution	**10**
TOTAL		**60**

RATIONALE

Against the backdrop of the needs of the Industries, as wells as based on fulfilling the expectations of the Industries, the Diploma Level students have to be trained directly and indirectly in toning up their competency levels. Proficiency in Communication only, equips them with confidence and capacity to cope with the employment. Hence, there is a necessity

to focus on these in the curriculum. At the end of the Course, the student is better equipped to express himself in oral and written communication effectively.

SPECIFIC INSTRUCTIONAL OBJECTIVES

1. **Emphasize and Enhance Speaking Skills**
2. **Increase Ability to Express Views & Opinions**
3. **Develop and Enhance Employability Skills**
4. **Induce Entrepreneurship and Plan for the Future**
5. **Expose & Induce Life Skills for Effective Managerial Ability**

LIFE AND EMPLOYABILITY SKILLS PRACTICAL SYLLABUS

Unit	Topics	Activity	Hours
I	**Communication, Listening, Training, Facing Interviews, Behavioural Skills**	-- instant sentence making – say expressions/phrases--self- introduction/another higher official in company – describe/explain product – frame questions based on patterns – make sentences based on patterns	**30**
II	**Entrepreneurship, Project Preparation, Marketing Analysis, Support & Procurement**	-- prepare an outline of a project to obtain loan from bank in becoming an entrepreneur – prepare a resume	**10**
III	**Productivity – comparison with developed countries, Quality Tools, Circles, Consciousness, Management, House Keeping**	-- search in the website -- prepare a presentation – discuss & interact	**05**
IV	**Occupational Safety, Health Hazard, Accident & Safety, First-Aid,Labour Welfare Legislation, Welfare Acts**	-- search in the website -- prepare a presentation – discuss & interact	**05**

V	**Environment, Global Warming, Pollution**	-- taking down notes / hints – answering questions -- fill in blanks the exact words heard	**10**

LEARNING STRUCTURE **100 Marks**

-- Focus more on Speaking & Listening Skills
-- Attention less on Reading & Writing Skills
-- Apply the skills in fulfilling the Objectives on Focused Topics

a) Listening **25 Marks**

1. Deductive Reasoning Skills (taking down notes/hints) **10**
2. Cognitive Skills (answering questions) **10**
3. Retention Skills (filling in blanks with exact words heard) **05**

b) Speaking Extempore/ Prepared **30 Marks**

1. Personality/Psychological Skills (instant sentence making) **05**
2. Pleasing & Amiable Skills (say in phrases/expressions) **05**
3. Assertive Skills (introducing oneself/others) **05**
4. Expressive Skills (describe/explain things) **05**
5. Fluency/Compatibility Skills (dialogue) **05**
6. Leadership/Team Spirit Skills (group discussion) **05**

c) Writing & Reading **20 Marks**

1. Creative & Reasoning Skills (frame questions on patterns) **05**
2. Creative & Composing Skills (make sentences on patterns) **05**
3. Attitude & Aim Skills (prepare resume) **05**
4. Entrepreneurship Skills (prepare outline of a project) **05**

d) Continuous Assessment (Internal Marks) **25 Marks**

(search,read, write down, speak, listen, interact & discuss)

1. Cognitive Skills (Google search on focused topics)
2. Presentation Skills& Interactive Skills (after listening, discuss)

Note down and present in the Record Note on any 5 topics **10 Marks**
Other activities recorded in the Record note **10 Marks**
Attendance **05 Marks**

INTERNAL MARKS **25 MARKS**

EXTERNAL MARKS AT END EXAMINATION **75 MARKS**

MODEL QUESTION

Time: 3 Hours **Maximum Marks: 75**

A. LISTENING **25 Marks**

1. Listen to the content and take down notes/hints 10
2. Listen to the content and answer the following questions. 10
3. Listen to the content and fill in the blanks the exact words heard. 05

B. SPEAKING **30 Marks**

1. Say in a sentence instantly on hearing the word(5 words, one after another). 05
2. Say any five expressions commonly used in communication. 05
3. Imagine, a consultant has come to your department.
   Introduce him to your subordinates. 05
4. Explain/describe the product you are about to launch in the market. 05
5. Speak with your immediate boss about the progress you have made. 05
6. Discuss within the group on the topic of focus in the syllabus. 05

C. WRITING & READING **20 Marks**

1. Frame new questions from the pattern given by changing sets of words with your own. 05

a.	When	do	you	return?
b.	How	is	his performance?	
c.	Where	has	the manager	gone?
d.	What	is	the progress	today?
e.	Why	are	the machines	not functioning?

2. Make sentences from the pattern given by changing sets of words with your own. 05

a.	The workers	are	on strike		
b.	The labourers	are paid	well	in this factory	
c.	There	is	a rest room	for the workers	
d.	These	are	the new products	launched	by our company
e.	Almost everyone	come	to the company	on motorbikes	

3. Prepare a resume for the post of Department Manager. 05

4. Prepare an outline of a project to obtain a loan. (Provide headings and subheadings) 05

I. Guidelines for setting the question paper:

A. LISTENING :

ONLY TOPICS related to
POLLUTION /
ENVIRONMENT /
GLOBAL WARMING are to be taken.
These topics are common for all the three types of evaluation.

B. SPEAKING :

1. WORDS of common usage
2. Fragments – expression of politeness, courtesy, cordiality
3. Introduce yourself as an engineer with designation or
   Introduce the official visiting your company/department

4. Describe/Explain the product/machine/department
5. Dialogue must be with someone in the place of work.
6. Group of six/eight
   Discuss the focused topic prescribed in syllabus

C. WRITING & READING:

1. Provide five different structures.
   Students are to substitute at least one with some other word/words
2. Provide five different structures.
   Students are to substitute at least one with some other word/words
3. Provide some post related to industries.
4. Outline of the project (skeleton/structure)
   Only the various headings and subheadings
   Content is not needed

II. Guidelines for recording the material on the Focused Topics in the Record note.

Write in the record note, **on any five topics**, from the list of topics given below. **10 Marks**
(5 topics x 10 marks = 50 marks. Thus, the **Average of 5 topics is 10 Marks)**

1. Productivity in Industries – Comparison with developed countries
2. Quality Tools, Quality Circles and Quality Consciousness
3. Effective Management
4. House Keeping in Industries

5. Occupational Safety and Hazard
6. Occupational Accident and First Aid
7. Labour Welfare Legislations
8. Labour Welfare Acts and Rights
9. Entrepreneurship
10. Marketing Analysis, Support and Procurement

LABORATORY REQUIREMENT:

1. An echo-free room
2. Necessary furniture and comfortable chairs
3. A minimum of two Computers with internet access
4.A minimum of two different English dailies
5. A minimum of Three Mikes with and without cords
6. Colour Television (minimum size – 29")
7. DVD/VCD Player with Home Theatre speakers
8. Smart board
9. Projector

Suggested Reading:

1. Production and Operations Management by S.N. Chary, TMH
2. Essentials of Management by Koontz &Weihrich, TMH
3. Modern Production / Operations Management by E.S. Buffa and R.K. Sarin, John Wiley &
Sons
4. Production Systems: Planning, Analysis and Control by J.L.Riggs, 3rd ed., Wiley.
5. Productions and Operations Management by A.Muhlemann, J.Oakland and K.Lockyer,
Macmillan
6. Operations Research - An Introduction by H.A.Taha, Prentice Hall of India
7. Operations Research by J.K.Sharma, Macmillan
8. Business Correspondence & Report Writing by R.C. Sharma and K.Mohan, TMH
9. How to prepare for Group Discussion & Interview (With Audio Cassette) by Prasad, TMH
10. Spoken English – A self-learning guide to conversation practice (with Cassette)
11. Introduction to Environmental Engineering by Mackenzie, L. Davis and A. David, Cornwell, McgrawHill, 3rd Ed.
12. Environmental Engineering by Peary, Rowe and Tchobanoglous, McgrawHill
13. Total Quality Management – An Introductory Text by Paul James, Prentice Hall
14. Quality Control and Applications by Housen&Ghose
15. Industrial Engineering Management by O.P. Khanna

VI SEMESTER

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

VI SEMESTER

2015 – 2016 onwards

TEXTILE MANAGEMENT

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **:**36061

Semester **:**VISemester

Subject Title **: TEXTILE MANAGEMENT**

TEACHING AND SCHEME OF EXAMINATION:

NO OF WEEKS PER SEMESTER: 15 WEEKS

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
TEXTILE MANAGEMENT	5	75	25	75	100	3 Hrs

TOPICS AND ALLOCATION OF HOURS:

Sl.No.	Topic	Time (hrs.)
1	**INTRODUCTION TO MANAGEMENT, SITE SELECTION, PLANT LAY OUTS**	14
2	**PRODUCTION AND FINANCIAL MANAGEMENT**	14
3	**HUMAN RESOURCE MANAGEMENT**	14
4	**SUPERVISORY AND SAFETY MANAGEMENT**	13
5	**EXPORT AND CONTEMPORARY MANAGEMENT**	13
6	**TEST & REVISION**	07
Total		75

Objectives

- To know about the fundamentals of management and the various functions of personnel management.
- To have knowledge about components and systems of wage payment.
- To know about the various labour welfare activities.in a textile mill.
- To know about the layouts and industrial buildings, factors influencing selection of site.
- To know about productivity, labour and machine productivity and the factors affecting them.
- To know about the role of supervisor in a textile unit, causes and precautions and prevention of industrial acc idents and safety devices used in textile mills..
- To know about inventory control and the methods adopted, material handling in textile mills.
- To know about financial management, cost and its components, calculation of Ex mill price and break even analysis.
- To know about export policy of India, export promoting agencies and their functions, export order processing and export pricing methods.

VI Semester

36061 - TEXTILE MANAGEMENT

DETAILED SYLLABUS

CONTENTS

UNIT	NAME OF TOPICS	Hours
1	**INTRODUCTION TO MANAGEMENT, SITE SELECTION, PLANT LAY OUTS** Definition of Management. Functions of management – Organising, Staffing, Directing, and Controlling. Organisation structure-line, staff, line and staff, committee organisation. Selection of site-advantage and disadvantages and various factors of site selection for various textile industries. Importance and types industrial buildings, lightings, ventilations and humidification. Control of air, water and land pollution in textile industry. Plant layout-process, product, combined and fixed layouts-their merits and demerits. Type of layout suitable for spinning, weaving, textile processing and garment industries	**14**
2	**PRODUCTION AND FINANCIAL MANAGEMENT** Factors affecting production. Productivity-Factors affecting productivity. Labour productivity and machine productivity. Work Study–Method Study and Work Measurement. Procedures of method study and work measurement. Importance of Material handling and various machineries of it in textile industry. Production Planning and Control (PPC) –Functions of PP&C. Inventory control - Economic Order Quantity(EOQ), ABC and VED Analysis. Financial Management – Capital Cost and Working Capital - Sources of Finance. Elements of Cost - Method of calculating Ex Mill Price. Break even analysis. Depreciation. Enterprise Resource Planning (ERP)	**14**
3	**HUMAN RESOURCE MANAGEMENT** Importance of Human Resource management in an industry. Man power planning –Definition of job analysis and job description – methods of job description and job analysis. Recruitment – Sources, merits and demerits. Selection process in recruitment. Training of Employees – advantages and types of training. Wages and its Components-Basic pay, DA, HRA, bonus, incentive. Method of wage payment- time rate, piece rate, combination of time and piece rate. Incentives – types and their merits and demerits. Labour Welfare activities – Role of Labour Welfare Officer. Labour grievances - causes and	**14**

	effects of grievances. Grievance handling procedures. Grievance handling mechanisms.	
4	**SUPERVISORY AND SAFETY MANAGEMENT** Define Supervision-Role of supervisor, characteristics of effective supervision. Role and characteristics of leadership. Difference between leader and manager. Motivation- need, importance and types of motivation-Maslow's theory, XYZ theory in motivation. Communication- Principle of effective communication - types of communication - barriers of communication. Labour welfare activities with respect to factories act. Industrial safety- Causes for accidents, preventive measures. Guards and safety devices in textile mill. Types of fire and fire prevention. Application of 5 S and Kaizen principles for effective supervision.	**13**
5	**EXPORT AND CONTEMPORARY MANAGEMENT** Importance and benefits of international marketing. World Trade Organisaiton (WTO)– functions of WTO. Various export promotion measures by government of India. Functions of TEXPROCIL, AEPC, PEDEXIL, HEPC, Textile committee, Textile commissioner's office. Export procedure-receipt of confirmed order-export production-export documentation-Export incentives. Importance of Shipping bill and bill of lading. Export finance –pre shipment finance and post shipment finance. Letter of Credit. Export price composition. Export pricing-Ex factory, Free Along Side (FAS), Free On Board (FOB), Cost Insurance Freight (CIF) and Franco pricing. Management Information System(MIS),Just In Time(JIT),Total Quality Management(TQM),	**13**

TEXT BOOKS:

S.NO	TITLE	AUTHOR	PUBLISHERS	YEAR
1	Principles Of Management	P.C.Tripathi	Tata Mcgrow Publishing Compny Ltd, New Delhi	2001
2	Management OfTextiles	Dudega.V.D	Trade Press, Textile Indistry ,Ahemadabad	1981

REFERANCE BOOKS:

S.NO	TITLE	AUTHOR	PUBLISHERS
1	Principles Of Management	P.C.Tripathi	Tata Mcgrow Publishing Compny Ltd, New Delhi
2	Management Of Textiles	Dudega.V.D	Trade Press, Textile Indistry ,Ahemadabad
3	Industrial Engineering	A P Verma	S K Kataria.
4	Personnel Management Of Humoun Resoures	Mamoria.C.B	Himalaya Pubishingh House, Mumbai
5	Orgisation Theory&Behaviour	Luthans.F	Printece Hall Of India
6	Management Of Textile	Ormerod.A	Butter Worth &Company
7	Industrial Eng. & Management Science	Bauga.T.R;Etal	Khanna Publisher, New Delhi
8	Business Management Theory	Singa. J.C & Mugali.V.N	R.Chand & Co, New Delhi
9	Costing In Textile Mills	SITRA	SITRA, Coimbatore
10	Export Management	T A S Balagopal	Himalaya Pubishingh House, Mumbai
11	Industrial Organisation and Engineering Economics	S C Sharma, T R Banga	Khanna PublisherNew Delhi

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

V SEMESTER

2015 – 2016 onwards

GARMENT MANUFACTURE

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma In Textile Technology (Textile Design & Weaving)

Subject Code **:** 36062

Semester **:**V Semester

Subject Title **:GARMENT MANUFACTURE**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
Garment Manufacture	5	75	Internal Assessment	Board Examination	Total	
			25	75	100	3 Hrs

Topics and Allocation of Hours:

Unit	Topic	Time (hrs.)
1	**MEASUREMENTS, PATTERNS AND TOOLS FOR GARMENT CONSTRUCTION**	14
2	**DRAFTING AND PATTERN LAYOUT**	14
3	**CUTTING AND GARMENT CONSTRUCTION**	14
4	**PACKING AND QUALITY REQUIREMENTS**	13
5	**FASHION DESIGN**	13
6	**TEST & REVISION**	07
Total		75

RATIONALE:

To understand the Textile industry and the market, an effort is made to equate the products' features with the requirement of the Markets. In order to achieve this objectives a broad sweep various subjects in the entire textile spectrum is elaboratedto the level of the diploma students..

OBJECTIVES:

1. To know about human anatomy, pattern making and garment making tools
2. To understand pattern layout & cutting
3. To familiarize with sewing, embroidery & clothing construction
4. To know about pressing, packing & quality control
5. To understand fashion design concept

VI SEMESTER

36062 - GARMENT MANUFACTURE

DETAILED SYLLABUS

CONTENTS

Unit	Name of the Topic	Hours
I	**MEASUREMENTS, PATTERNS AND TOOLS FOR GARMENT CONSTRUCTION** Flow chart for garment manufacturing process in garment industry. Eight head theory of human anatomy and its uses. Measurements – importance, Measurements to be taken for children's, Ladies, and Gent's. Paper patterns - importance – Types - Commercial patterns and personal patterns - Principles of pattern drafting – Principles of Pattern grading. Tools required for garment making – Measuring tools, Cutting tools - Pattern making tools - Pressing tools.	14
II	**DRAFTING AND PATTERN LAYOUT** Pattern making of 'A' line frock - Ladies skirt - Gent's half sleeve shirt - Ladies nightwear. Fabrics used in garment manufacture – Plain, Striped, Plaid, Printed and one way. Rules for pattern layout – types of Layout (length wise Cross wise, partial length wise, partial cross wise, combined fold and open layout). Special layouts for asymmetrical, striped, checked and one way designs – Types of Lay. Lay length and Marker planning.	14
III	**CUTTING AND GARMENT CONSTRUCTION** Objects of spreading & cutting - Importance of cutting - Brief study on types of cutting machines – Straight knife - Band knife - Round knife -LASER cutting. Cutting defects. Sewing Machine Parts and its function. Stitches – Brief study of Lock stitch, Chain stitch, 3 thread over lock, 5 thread flat lock. Brief study of different types of Seams – Plain, bound flat & Slot seam. Construction of 'A' line frock, Ladies skirt, Gent's half sleeve shirt and Ladies nightwear.	14

IV	**PACKING AND QUALITY REQUIREMENTS** Types of pressing and its objects. Packing materials, Different methods of Packing – Ratio pack, Assortment pack, Colour wise pack, Size wise pack. Methods of fabric inspection - Study of 4 point and 10 point system. Types of Inspection – Raw Meterial Inspection - Quality requirements for sewing thread, zippers, linings and buttons – Brief study of in process inspection and Final inspection. Brief study of Garment defects. Accepted Quality Level (AQL) – Sampling size and levels. Acquiring ISO certification for the Garment Industry. Objects of Organic cotton certification and GOTS	13
V	**FASHION DESIGNING** Elements of Design – Line, Shape, Texture, colour and value. Principles of design – Balance, Proportion, Emphasis, Rhythms and Harmony. Pigment theory of colours – Primary, Secondary and Tertiary colours. Color dimension (Hue, Intensity, value, tint, shade and tone) - Warm and Cool Colors. Design – Different types of structural designs and decorative designs on dress. Basic concepts of Fashion show.	13

TEXT BOOKS:

S.NO	Author	Title	Publisher	Edition	Year
1	Carr and Lathem	The Technology of Clothing Manufacture	Blackwell Publication Oxford UK	2nd Indian Reprint	2004
2	Gerry Cooklin	Introduction to Clothing Manufacture	Blackwell Publication Oxford UK	2nd Indian Reprint	2005
3	Pradip V.Metha & Satish.K. Bharadwaj	Managing Quality in the Apparel Industry	New Age International Publishing, New Delhi	1st Edition Reprint	2006

REFERENCE BOOKS:

S.NO	Author	Title	Publisher	Edition	Year
1	Anna Jacob Thomas	The Art of Sewing	UBS Publishers, New Delhi	6th Reprint	2001
2	Mary Mathews	Practical clothing constructions Part I & II	Paprinpack Printers, Chennai	Ist Edition	1985
3	Erwine Mabel.D	Clothing for Moderns	Macmillan Pub. Co., New York.	Ist Edition	1979
4	Virgin Stolpe Lewis	Comparative clothing construction Techniques	Surjeet Publications, Delhi	Ist Edition	1984

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

VI SEMESTER

2015 – 2016 onwards

MODERN WEAVING TECHNOLOGY

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **: 36381**

Semester **:**VI Semester

Subject Title **:MODERN WEAVING TECHNOLOGY (Elective 1)**

TEACHING AND SCHEME OF EXAMINATION

No of weeks per semester: 15

Subject Title	Instructions		Examination			
	Hours/Week	Hours/Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
MODERN WEAVING TECHNOLOGY	5 Hrs	75 Hrs	25	75	100	3 Hrs

Topics and Allocation of Hours:

Sl.No	Topic	Time (hrs.)
1	**MODERN WEAVING PREPARATION**	14
2	**PROJECTILE AND RAPIER WEAVING**	14
3	**JET LOOMS:**	14
4	**MULTIPHASE WEAVING, TERRY WEAVING & DENIM WEAVING**	13
5	**KNITTING ,NON WOVENS & TECHNICAL TEXTILES**	13
6	**TEST & REVISION**	07
	Total	75

RATIONALE:

To study the latest weaving preparatory, modern developments in weaving, knitting, non wovens and technical textiles are included in this scheme. To enhance the knowledge in auto cone winding ,modern warping and sizing , a detailed syllabus is given. To enhance the knowledge in modern weaving machines detailed syllabus in projectile, rapier, jet, multiphase, terry and denim weaving is given. Also to widen the scope of job opportunities technical textiles are also included .

OBJECTIVES:

1. To know about modern weaving preparation
2. To understand about the classification of shuttleless weaving machines
3. To Study about yarn quality requirements for shuttleless weaving.
4. To study in detail about Projectile, Rapier, Jet and Multiphase looms.

5. To understand about both terry and Denim weaving.
6. To study about different types of knitting machines and their structures.
7. To study about different types non-wovens and technical textiles

VI Semester
36381 - Modern Weaving Technology -Elective 1
Detailed Syllabus

CONTENTS

Unit	Name of the Topic	Hours
I	**MODERN WEAVING PREPARATION** **Winding**: Modern Automatic winding machines – Special features- Tension controls – Yarn clearers – Types – Features – Process control measures in winding - Yarn preparation for export quality – Yarn quality requirement for shuttle less looms. **Warping:** Direct driven beam warping machines – Computerized sectional warping – Salient features – passage of material. Beam warping – Salient features- passage of material .Modern warping Creels – Process control measures – Tension & Breakage controls. **Sizing:** Beam to beam sizing - Salient features of modern sizing machines - passage of material - Different types of Sensors used in modern sizing machine – Different types of creels and size boxes. Process control measures – measures to improve weavability of warp yarn.	14
II	**PROJECTILE AND RAPIER WEAVING** Classification of shuttle less weaving machines - Advantages and disadvantages of shuttleless weaving machines. Manufacturers of shuttle less weaving machines. **Projectile**: Sulzer projectile loom - Salient features -Loom timing diagram - Working elements – 8 Stages of weft insertion - Working of Torsion bar picking mechanism – receiving unit- Brief study of Cam shedding - Cam beat up mechanism- Tuck in selvedge – Projectile types and dimensions – projectile guide and brake –. **Rapier:** Loom timing diagram - Rigid / flexible and single / double rapiers – principles of tip and loop transfer - weft insertion cycle – Brief study of rapier drives – salient features. Leno selvedge- Working of Electronic take up mechanism – Working of Electronic let off mechanism. Comparison between projectile and rapier weaving machines.	14

III	**JET LOOMS** Different types of Jet looms – advantages and disadvantages of jet looms**.** **Air jet loom** Salient features of modern air jet looms - Weft insertion cycle with profile reed - Loom timing diagram – passage of material through air jet loom. – Passage of weft insertion - Yarn feeder – loop storage and drum storage – functions of main nozzle – Tandem nozzle – Relay nozzles - single hole and multiple hole relay nozzles – Relay nozzle for filament weaving – Air quality requirements. Air quantity requirement with respect to count, type of yarn , loom width & speed . – Air tank system for latest air jet looms. **Water jet loom:** Salient features of water jet looms -Comparison between water jet and air jet looms – working of water pump – system of weft insertion - Water quality requirement – Weft insertion cycle – Fused selvedge. Types of fabrics woven on air jet and water jet looms.	14
IV	**MULTIPHASE WEAVING, TERRY WEAVING & DENIM WEAVING** **Multiphase weaving*:*** Classification – circular machine – weaving principle – Passage of material through Sulzer M8300 loom – principle – shed formation – weft insertion – weft beat up – Passage of warp yarn in M8300 machine**.** Limitation and its usage. **Modern Terry weaving:** Passage of material through a modern terry weaving machine - Classic terry and fashion terry – Loom requirements for weaving terry fabric in projectile, rapier, and air jet looms. **Denim weaving**: Introduction – Warp preparation – Yarn quality requirements –– Passage of material through integrated sizing & dyeing machine - Indigo rope dyeing and indigo loop dyeing – Loom requirement for denim weaving.	13

V	**KNITTING, NON WOVENS & TECHNICAL TEXTILES** **Knitting:** Weft knitting – Classification – Modern weft knitting machine – Passage of material through single jersey weft knitting machine - Passage of material through double jerseyweft knitting machine. Warp knitting – Comparison between warp knitting and weft knitting - Types of warp knitting machines. **Non-Wovens:** Introduction to Non-wovens - classification - production of non-woven fabrics – Fibre web production - Rando feeder - Rando webber - Needle punching - Chemical bonding – Different types of Non- wovens – Applications. **Technical Textiles:** Introduction to Technical textiles – Classification – Field of applications – Production of medical textiles – Classification of medical textiles - Fibres used.	13

TEXT BOOKS				
S.No	**Title**	**Author**	**Publsiher**	**Year of publishing**
1	Hand Book of Weaving	Sabit Adhenur	Technomic Publishing Company, Inc. Year 2001	2001
2	Hand book of Technical Textiles	A R Horrocks and S C Anand	The Textile Institute, Manchester, U.K., , Woodhead Publishing limited, Cambridge England.	2000
3	Modern Weaving Technology	J.K.Arora	Abhishek Publications Chandigarh - 160017	2002
REFERENCE BOOKS				
1	Principles of Weaving	Marks & Robinson (ATC)	The Textile Institute, Manchester.	1976
2	Modern Preparation and Weaving	A.Ormerod	Wood Head Publishing Ltd, London	1983
3	Weaving machines, mechanisms and management	Talukdar , Sriramulu, Ajgonkar	Mahajan publishers (P) ltd Mumbai	1988
4	Knitting Technology	David J. Spencer	Pergamon Press Ltd, UK	2004
5	Non woven	Madhavamoorthi , Guru prasath & Sundar shetty	Mahajan Publishers Ahemedabad	2005
6	Medical Textiles	S. Anand	Text. Inst., , ISBN: 185573317X	1996

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

VI SEMESTER

2015 – 2016 onwards

APPLICATION OF ELECTRONICS IN WEAVING

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **:36382**

Semester **:**VI Semester

Subject Title **:APPLICATION OF ELECTRONICS IN WEAVING- ELECTIVE 2**

TEACHING AND SCHEME OF EXAMINATION

No of weeks per semester: 15

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
Application of Electronics in Weaving	5 Hrs	75 Hrs	25	75	100	3 Hrs

Topics and Allocation of Hours:

S.No	Topic	Time (hrs.)
1	**Sensors in Textile**	14
2	**Electronic in Measurements**	14
3	**Signal conditioning and data converters**	14
4	**Electronics in weaving preparatory machine**	13
5	**Electronics in modern weaving machine**	13
6	**TEST & REVISION**	07
	Total	75

RATIONALE:

The modern weaving machines are designed with many electronic instruments like microprocessor, sensor, PLC and date converters. To gain knowledge to handle the machines this subject is introduced. To study about the Sensors in Textile, Electronic in Measurements, Signal conditioning and data converters a detailed syllabus is given. To enhance the Electronics knowledge in modern weaving & weaving preparatory machines detailed syllabus is given.

OBJECTIVES:

1. To know about Sensors in Textile
2. To understand about the Electronic in Measurements
3. To Study about Signal conditioning and data converters.
4. To study in detail about Electronics in weaving preparatory machine.
5. To understand about Electronics in modern weaving machine

VI SEMESTER

36382 - APPLICATION OF ELECTRONICS IN WEAVING - ELECTIVE-2

DETAILED SYLLABUS

CONTENTS

Unit	Name of the Topic	Hours
I	**SENSORS IN TEXTILE** Introduction – classification of transducers – types – application of passive and active transducers in textile – sensors – types – selection of sensors – optical sensors – working principles of photo conductive… cell – photovoltaic cell – photo active devices – types – working principles of photodiode – photo transistor – light emitting diode (LED) – optical sensors – displacement and position sensors – potentiometer Sensors – (LVDT) linear variable differential transformers – (RVDT) Rotary variable differential transformers – rotary encoders –capacitive transducer – limit switches – proximity sensors.	14
II	**ELECTRONIC IN MEASUREMENTS** Force and weight measurement – strain gauge – temperature measurement devices – thermocouple – resistance temperature detector (RTD) – thermistors – pressure sensors – bourdon tube – diaphragm – bellow – flow measurement – orifice plate – venturi tube – electromagnetic flow meter – ultrasonic flow measurement – level measurement – float switch – capacitance method – radiation method – ultrasonic level detector – tachogenerators / tachometers – inductive tachometer – drag type tachometer – AC tachogenerators – DC tachogenerators – measurement of humidity – hygrometers – types - working resistive hygrometer – smoke detector – circuit of smoke detector - measurement of PH value	14
III	**SIGNAL CONDITIONING And DATA CONVERTERS** Textile instrumentation system – signal conditioning – principle – block diagram – bridge – bridge based instruments – bridges in control application – calibration and zero adjustment – amplifier – operational amplifier – OP-AMP in control applications – sample and hold circuits – data converters – digital to analog converters - data acquisition system – final control operation – elements – signal conversion – actuators – electrical actuators – relay – construction – latching relay – time delay relay – plug-in relay – reed relay – contactor – solenoids – construction – solenoid valves – spool valve – single solenoid valves – de-energized and energized double solenoid valve - de-energized and energized type – pneumatic actuators – main parts of pneumatic system – power supply – converters Microprocessor – introduction – salient features - programmable logic controller (PLC) – PLC replaced hard-wired control – comparison between relay logic control and PLC	14

IV	**ELECTRONICS IN WEAVING PREPARATORY MACHINE** **Winding :**Electronic yarn clearer – capacitive and optical type – automatic splicer – controlling yarn tension and winding speed – waxing control – auto doffing – monitoring of winding machines – uster conedata – schlafhorst informatory **Warping:** Warping – application of PLC in warping machine – various control and regulating functions in modern direct warping machine**.** **Sizing:** Detailed study of various sensors used in modern sizing machine Electronic application in drawing & denting machine.	13
V	**ELECTRONICS IN MODERN WEAVING MACHINE** Introduction - Electrical weft feeler – optical weft feeler – weft changing mechanism – adjustable brake accumulator – electronic warp let-off – electronic take-up – function of APS (automatic package switching) – EFT (Electronic filling tensioner) – ASP (automatic stop-mark prevention) – brief idea of microprocessor – controlled projectile brake – automatic pick finding and shed leveling – drive of selvedge formation – weaving machine cleaning system – detailed study of E-shed, electronic dobby and electronic jacquard – loom monitoring – automatic acquisition of data – automatic processing of data – storage of data – automatic output of data – loom data system Fabric inspection – Introduction – detailed study of Barco Off-loom and on-loom inspection system**.**	13

TEXT BOOKS				
S.No	**Title**	**Author**	**Publisher**	**Year of publishing**
1	Electronic controls for textile machines	Hiren joshi & Gauri	NCUTE	2003
REFERENCE BOOKS				
1	Hand Book of Weaving	Sabit Adhenur	Technomic Publishing Company, Inc.	2001
2	Principles of Weaving	Marks & Robinson (ATC)	The Textile Institute, Manchester.	1976
3	Modern Preparation and Weaving	A.Ormerod	Wood Head Publishing Ltd, London	1983
4	Weaving machines, mechanisms and management	Talukdar , Sriramulu, Ajgonkar	Mahajan publishers (P) ltd Mumbai	1988
5	Textile sizing	Bhuvanesh C.Goswami & Rajesh D Anand jiwala	Marshel dekker, INC New york	2004

.

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

VI SEMESTER

2015 – 2016 onwards

GARMENT MANUFACTURE PRACTICAL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **:**36364

Semester **:**VI Semester

Subject Title **:** GARMENT MANUFACTURE PRACTICAL

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
GARMENT MANUFACTURE PRACTICAL	5	75	25	75	100	3 Hrs

Rationale:

The diploma students should necessarily have basic practical skills and knowledge to get their work done in their carreer in the industry and trade, where they are going to get absorbed either as technicians or administrators or entrepreneurs. This is achieved by introducing practical experiments with hands on experience in the specified subjects.

GUIDELINES:

- All the experiments given in the list of experiments should be completed and given for the Board Practical Examination.
- To develop best skills in handling Instruments / Equipments and taking readings in the practical classes, every batch of students should be provided with a separate experimental setup for doing experiments in the laboratory.
- The external examiners are requested to ensure that a single experimental question should not be given to more than four students while admitting a batch of 30 students during Board Practical Examinations.

OBJECTIVES:

1. To learn the fundamentals of pattern drafting.

2. To understand the concepts of garment making.
3. To familiarize them with colour theory and fashion concepts.

QUESTION PAPER PATTERN &ALLOCATION OF MARKS

Single experiment is to be given per student

Experiment	50 marks
Write up / diagram	20 marks
Viva - Voce	05 marks
Total	75 Marks

EQUIPMENT LIST:

S.No.	Name of Equipments
1	Lock Stitch Pedal Sewing Machine – 10 Nos.
2	3-Thread Over lock – 1 No.
3	Steam Iron Box – 1 No.
4	Drafting & Cutting Table – 1 No.

VI Semester

36364 - GARMENT MANUFACTURE PRACTICAL

LIST OF EXPERIMENTS:

Drawing

1. Drawing Ladies high fashion dress and making it decorative.

Preparing Embroidery samples

2. Preparing hand embroidery samples with running, back & chain stitches.
3. Preparing embroidery samples with stem and satin stitches.

Pattern Drafting

4. Preparing pattern for Basic T-shirt using suitable software of garment CAD.
5. Preparing pattern for A-line frock using suitable software of garment CAD.
6. Preparing pattern for Ladies skirt
7. Preparing pattern for Ladies nightwear.
8. Preparing pattern for Gent's shirt with full sleeve.

Construction

9. Using the given paper pattern, construction of different types of necks.
10. Using the given paper pattern, construction of different types of seams.
11. Using the given paper pattern, construction of ladies nightwear.
12. Using the given paper pattern, construction of Gents shirt with full sleeve.

.

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY
(TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

VI SEMESTER

2015 – 2016 onwards

JACQUARD DESIGNS FOR HOME & APPAREL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma in Textile Technology (Textile Design & Weaving)

Subject Code **:**36365

Semester **:**VI Semester

Subject Title **: JACQUARD DESIGNS FOR HOME & APPAREL PRACTICAL**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
JACQUARD DESIGNS FOR HOME AND APPAREL PRACTICAL	5 Hrs	75 Hrs	25	75	100	3 Hrs

RATIONALE:

To enhance the practical knowledge in jacquard designs for home and apparel.

GUIDELINES:

- All the sixteen experiments given in the list of experiments should be completed and given for the end semester practical examination.
- In order to develop best skills every students should be provided with a separate computer for each mechanism for better understanding in the laboratory.
- The external examiners are requested to ensure that a single experimental question should not be given to more than two students while examining a batch of 30 students during Board Examinations

OBJETIVES:

To make the students understand the various jacquard designsand fashion basics.
To create and design the typical jacquard designs in point paper.
To make the student understand the method of creatingthe jacquard designs with the aid of Textile CAD.

QUESTION PAPER PATTERN &ALLOCATION OF MARKS

Single experiment is to be given per student

Design work	60 marks
Write up	10 marks
Viva	05 marks
Total	75 Marks

LIST OF EQUIPMENTS REQUIRED FOR A BATCH OF 30 STUDENTS

Tools required:

1. Drawing tables and boards - 30 Nos.
2. Instrument boxes - 1 per student.
3. 1 set of Poster colours, water colours, leather paperboards,
4. 0 No to 12 No brushes (round and flat brushes) - 1 per student

Equipment required:

Latest computers with Textile CAD Software for jacquard, 3D texture mapping, Adobe photo shop.

VI Semester

36365 -JACQUARD DESIGNS FOR HOME AND APPAREL PRACTICAL

LIST OF EXPERIMENTS

1. Drafting a sketch design and converting the same in point paper.

2. Drafting designs from the given jacquard woven fabrics and developing them in point paper.

3. Producing simple figure shading and double shading designs in point paper.

4.Creating a full shaded designs in point paper with 100 ends * 100 picks

5. Constructing a sketch designs in J.K board with colour media with following
Unit repeating / half drop / drop reverse / sateen bases for silk sarees.

6. Constructing designs from incomplete repeats for jacquard designs.

7.Creating a Simple jacquard design in Textile CAD Jacquard software with fabric simulation by learning step by step commands.

8. Showing graph information for the created jacquard designs in Textile CAD for different loom parameters.

9. Analyzing a Jacquard woven fabric and producing fabric simulation in Textile CAD Jacquard
Software.

10. Practising various print options for designs, graph information and fabric simulation with the
Knowledge of different file formats in textile CAD software.

11. Learning step by step commands of 3D Texture Mapping software and show Garment / Made- ups simulations in the computer.

12. Scanning a design and develop it on adobe photoshopsuitable to be woven on jacquard weaving.

DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

III YEAR

M - SCHEME

VI SEMESTER

2015 – 2016 onwards

MODERN WEAVING TECHNOLOGY PRACTICAL

CURRICULAM DEVELOPMENT CENTRE

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

DIPLOMA IN TEXTILE TECHNOLOGY (TEXTILE DESIGN & WEAVING)

M -SCHEME

(To be implemented to the student admitted from the year 2015-2016 onwards)

Course Name **:** Diploma In Textile Technology (Textile Design & Weaving)

Subject Code **: 36366**

Semester **:**VI Semester

Subject Title **:MODERN WEAVING TECHNOLOGY PRACTICAL**

TEACHING AND SCHEME OF EXAMINATION:

No of weeks per semester: 15 weeks

Subject Title	Instructions		Examination			
	Hours /Week	Hours /Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
MODERN WEAVING TECHNOLOGY PRACTICAL	5 Hrs	75 Hrs	25	75	100	3 Hrs

RATIONALE:

To enhance the practical knowledge in Projectile, Rapier and Air jet looms. The timing and settings also given for better understanding of each mechanism. These fundamentals help the students to acquire knowledge shuttleless weaving machines.

GUIDELINES:

- All the sixteen experiments given in the list of experiments should be completed and given for the end semester practical examination.
- In order to develop best skills every students should be provided with a separate machine for each mechanism for better understanding in the laboratory.
- The external examiners are requested to ensure that a single experimental question should not be given to more than three students while examining a batch of 30 students during Board Examinations**.**

OBJETIVES:

1.To make the students to understand the working principle of various modern shuttleless weaving machines
.

2.To identify the important mechanisms in each machine , observe and understand the working of them.

3.To make the student to operate the latest weaving machines**.**

QUESTION PAPER PATTERN &ALLOCATION OF MARKS

Single experiment is to be given per student

Experiment	50 marks
Write up / diagram / calculations	20 marks
Viva - Voce	05 marks
Total	75 Marks

LIST OF EQUIPMENTS REQUIRED FOR A BATCH OF 30 STUDENTS

Rapier weaving machine – 1 no

Air jetweaving machine – 1 no

Sample weaving machine, Sample warper and single end sizing machine – each 1 no

Electronic dobby – 1 no

VISemester

36366 - MODERN WEAVING TECHNOLOGY PRACTICAL

LIST OF EXPERIMENTS

1. With the aid the gearing plan & cross sectional view of a Projectile weaving machine identifying the function of each mechanism. Calculate the speed of the machine and weft insertion rate.
2. With the aid of cam beat up diagram and cam shedding diagram identifying the function of each element of mechanisms.
3. Draw the sketch of torsion rod picking mechanism and Calculatethe number of projectiles required for 3.9 metre wide loom.
4. Sketching the gearing plan & cross sectional view of a Rapier weaving machine and identifying the function of each mechanism.
5. Drawing the drive of a flexible rapier mechanism and measuring the dimension of rapier head.
6. Setting the microprocessor for different weft patterns & weave pattern in rapier loom.
7. Setting the electronic let-off mechanism for different beam diameter in rapier loom.
8. Setting the electronic take-up mechanism for different picks per unit length and Setting the leno selvedge for effective binding of selvedge threads in rapier loom.

09. Sketching the gearing plan & cross sectional view of a air jet weaving machine and

identifying the function of each mechanism.

10. Set the Electronic dobby for correct working of the given design in rapier loom.

11. Practising sample warp preparation sequence for the given design using sample warper and sizer.

12. Practising sample weaving machine operations and producing a sample fabric in loom.

M - SCHEME

2015 – 2016

PROJECT WORK

EVALUATION FOR BOARD EXAMINATION:

Details of Mark allocation	Max Marks
Marks for Report Preparation, Demo, Viva-voce	65
Marks for answers of 4 questions which is to be set by the external examiner from the given question bank consisting of questions in the following two topics Disaster Management and Environmental Management. Out of four questions two questions to appear from each of the above topics i.e. 2 questions x 2 topics = 4 questions 4 questions x 2 ½ marks = 10 Marks	10
Total	**75**

DETAILED SYLLABUS

ENVIRONMENTAL & DISASTER MANAGEMENT

1. ENVIRONMENTAL MANAGEMENT

Introduction – Environmental Ethics – Assessment of Socio Economic Impact – Environmental Audit – Mitigation of adverse impact on Environment – Importance of Pollution Control – Types of Industries and Industrial Pollution.

Solid waste management – Characteristics of Industrial wastes – Methods of Collection, transfer and disposal of solid wastes – Converting waste to energy – Hazardous waste management Treatment technologies.

Waste water management – Characteristics of Industrial effluents – Treatment and disposal methods – Pollution of water sources and effects on human health.

Air pollution management – Sources and effects – Dispersion of air pollutants – Air pollution control methods – Air quality management.

Noise pollution management – Effects of noise on people – Noise control methods.

2. DISASTER MANAGEMENT

Introduction – Disasters due to natural calamities such as Earthquake, Rain, Flood, Hurricane, Cyclones etc – Man made Disasters – Crisis due to fires, accidents, strikes etc – Loss of property and life..

Disaster Mitigation measures – Causes for major disasters – Risk Identification – Hazard Zones – Selection of sites for Industries and residential buildings – Minimum distances from Sea – Orientation of Buildings – Stability of Structures – Fire escapes in buildings - Cyclone shelters – Warning systems.

Disaster Management – Preparedness, Response, Recovery – Arrangements to be made in the industries / factories and buildings – Mobilization of Emergency

Services - Search and Rescue operations – First Aids – Transportation of affected people – Hospital facilities – Fire fighting arrangements – Communication systems – Restoration of Power supply – Getting assistance of neighbors / Other organizations in Recovery and Rebuilding works – Financial commitments – Compensations to be paid – Insurances – Rehabilitation.

LIST OF QUESTIONS

1. ENVIRONMENTRAL MANAGEMENT

1. What is the responsibility of an Engineer-in-charge of an Industry with respect to Public Health?
2. Define Environmental Ethic.
3. How Industries play their role in polluting the environment?
4. What is the necessity of pollution control? What are all the different organizations you know, which deal with pollution control?
5. List out the different types of pollutions caused by a Chemical / Textile / Leather / Automobile / Cement factory.
6. What is meant by Hazardous waste?
7. Define Industrial waste management.
8. Differentiate between garbage, rubbish, refuse and trash based on their composition and source.
9. Explain briefly how the quantity of solid waste generated in an industry could be reduced.
10. What are the objectives of treatments of solid wastes before disposal?
11. What are the different methods of disposal of solid wastes?
12. Explain how the principle of recycling could be applied in the process of waste minimization.
13. Define the term ‘Environmental Waste Audit’.
14. List and discuss the factors pertinent to the selection of landfill site.
15. Explain the purpose of daily cover in a sanitary landfill and state the minimum desirable depth of daily cover.
16. Describe any two methods of converting waste into energy.
17. What actions, a local body such as a municipality could take when the agency appointed for collecting and disposing the solid wastes fails to do the work continuously for number of days?
18. Write a note on Characteristics of hazardous waste.
19. What is the difference between municipal and industrial effluent ?
20. List few of the undesirable parameters / pollutants anticipated in the effluents from oil refinery industry / thermal power plants / textile industries / woolen mills / dye industries / electroplating industries / cement plants / leather industries (any two may be asked)

21. Explain briefly the process of Equalization and Neutralization of waste water of varying characteristics discharged from an Industry.
22. Explain briefly the Physical treatments “Sedimentation” and “Floatation” processes in the waste water treatment.
23. Explain briefly when and how chemical / biological treatments are given to the waste water.
24. List the four common advanced waste water treatment processes and the pollutants they remove.
25. Describe refractory organics and the method used to remove them from the effluent.
26. Explain biological nitrification and de-nitrification.
27. Describe the basic approaches to land treatment of Industrial Effluent.
28. Describe the locations for the ultimate disposal of sludge and the treatment steps needed prior to ultimate disposal.
29. List any five Industries, which act as the major sources for Hazardous Air Pollutants.
30. List out the names of any three hazardous air pollutants and their effects on human health.
31. Explain the influence of moisture, temperature and sunlight on the severity of air pollution effects on materials.
32. Differentiate between acute and chronic health effects from Air pollution.
33. Define the term Acid rain and explain how it occurs.
34. Discuss briefly the causes for global warming and its consequences
35. Suggest suitable Air pollution control devices for a few pollutants and sources.
36. Explain how evaporative emissions and exhaust emissions are commonly controlled.
37. What are the harmful elements present in the automobile smokes? How their presence could be controlled?
38. What is the Advantage of Ozone layer in the atmosphere? State few reasons for its destruction.
39. Explain the mechanism by which hearing damage occurs.
40. List any five effects of noise other than hearing damage.
41. Explain why impulsive noise is more dangerous than steady state noise.
42. Explain briefly the Source – Path – Receiver concept of Noise control.
43. Where silencers or mufflers are used ? Explain how they reduce the noise.
44. Describe two techniques to protect the receiver from hearing loss when design / redress for noise control fail.
45. What are the problems faced by the people residing along the side of a railway track and near to an Airport? What provisions could be made in their houses to reduce the problem?

2. DISASTER MANAGEMENT

1. What is meant by Disaster Management? What are the different stages of Disaster management?
2. Differentiate Natural Disasters and Man made Disasters with examples.
3. Describe the necessity of Risk identification and Assessment Surveys while planning a project.
4. What is Disasters recovery and what does it mean to an Industry?
5. What are the factors to be considered while planning the rebuilding works after a major disaster due to flood / cyclone / earthquake? (Any one may be asked)
6. List out the public emergency services available in the state, which could be approached for help during a natural disaster.
7. Specify the role played by an Engineer in the process of Disaster management.
8. What is the cause for Earthquakes? How they are measured? Which parts of India are more vulnerable for frequent earthquakes?
9. What was the cause for the Tsunami 2004 which inflicted heavy loss to life and property along the coast of Tamilnadu ? Specify its epicenter and magnitude.
10. Specify the Earthquake Hazard Zones in which the following towns of Tamilnadu lie: (a) Chennai (b) Nagapattinam (c) Coimbatore (d) Madurai (e) Salem.
11. Which parts of India are experiencing frequent natural calamities such as (a) heavy rain fall (b) huge losses due to floods (c) severe cyclones
12. Define basic wind speed. What will be the peak wind speed in (a) Very high damage risk zone – A, (b) High damage risk zone, (c) Low damage risk zone.
13. Specify the minimum distance from the Sea shore and minimum height above the mean sea level, desirable for the location of buildings.
14. Explain how the topography of the site plays a role in the disasters caused by floods and cyclones.
15. Explain how the shape and orientation of buildings could reduce the damages due to cyclones.
16. What is a cyclone shelter ? When and where it is provided ? What are its requirements ?
17. What Precautionary measures have to be taken by the authorities before opening a dam for discharging the excess water into a canal/river ?
18. What are the causes for fire accidents ? Specify the remedial measures to be taken in buildings to avoid fire accidents.
19. What is a fire escape in multistoried buildings ? What are its requirements ?
20. How the imamates of a multistory building are to be evacuted in the event of a fire/Chemical spill/Toxic Air Situation/ Terrorist attack, (any one may be asked).
21. Describe different fire fighting arrangements to be provided in an Industry.
22. Explain the necessity of disaster warning systems in Industries.

23. Explain how rescue operations have to be carried out in the case of collapse of buildings due to earthquake / blast / Cyclone / flood.
24. What are the necessary steps to be taken to avoid dangerous epidemics after a flood disaster?
25. What relief works that have to be carried out to save the lives of workers when the factory area is suddenly affected by a dangerous gas leak / sudden flooding ?
26. What are the difficulties faced by an Industry when there is a sudden power failure? How such a situation could be managed?
27. What are the difficulties faced by the Management when there is a group clash between the workers? How such a situation could be managed?
28. What will be the problems faced by the management of an Industry when a worker dies because of the failure of a mechanical device due to poor maintenance? How to manage such a situation ?
29. What precautionary measures have to be taken to avoid accidents to labourers in the Industry in a workshop / during handling of dangerous Chemicals / during construction of buildings / during the building maintenance works.
30. Explain the necessity of medical care facilities in an Industry / Project site.
31. Explain the necessity of proper training to the employees of Industries dealing with hazardous products, to act during disasters.
32. What type of disaster is expected in coal mines, cotton mills, Oil refineries, ship yards and gas plants?
33. What is meant by Emergency Plan Rehearsal? What are the advantages of such Rehearsals?
34. What action you will take when your employees could not reach the factory site because of continuous strike by Public Transport workers?
35. What immediate actions you will initiate when the quarters of your factory workers are suddenly flooded due to the breach in a nearly lake / dam, during heavy rain?
36. What steps you will take to avoid a break down when the workers union of your Industry have given a strike notice?
37. List out few possible crisis in an organization caused by its workers? What could be the part of the middle level officials in managing such crisis?
38. What types of warning systems are available to alert the people in the case of predicted disasters, such as floods, cyclone etc.
39. Explain the necessity of Team work in the crisis management in an Industry / Local body.
40. What factors are to be considered while fixing compensation to the workers in the case of severe accidents causing disability / death to them?
41. Explain the legal / financial problems the management has to face if safely measures taken by them are found to be in adequate.

42. Describe the importance of insurance to men and machinery of an Industry dealing with dangerous jobs.
43. What precautions have to be taken while storing explosives in a match/ fire crackers factory?
44. What are the arrangements required for emergency rescue works in the case of Atomic Power Plants?
45. Why residential quarters are not constructed nearer to Atomic Power Plants?

****