

ELEMENTS OF TEXTILE TECHNOLOGY.

1. RATIONALE :

This course provides knowledge regarding process of Textile Technology. The course also develops knowledge of ginning, spinning, weaving & fabric structure. The basic knowledge of spinning and weaving processes develop the understanding to apply various processes on fabric.

2. SCHEME OF TEACHING

SR NO	NAME OF TOPICS	NO.OF HOURS.		
		LECT.	PRACT.	TOTAL
1	GINNING	03	03	06
2	SPINNING	10	10	22
3	WEAVING	10	10	22
4	FABRIC STRUCTURE	08	05	13
5	KNITTING & TEXTURISING	04	--	--
6	CALCULATION	07	--	07
TOTAL		42	28	70

3. OBJECTIVES:

1. Understand the yarn manufacturing process from cotton fiber.
2. Define ginning & identify different parts of macarthy gin.
3. Know the objects of blowroom and identify different parts of following-
 - hopper bale opener
 - Rieter automixer
 - Scutcher
4. Know the objects and identify different parts of carding, drawing, comber, canfed inter and ring frame.
5. Explain a fabric manufacturing process from yarn.
6. Know the objects and identify the different parts of autoconer winding, super speed pirn winding, B.C. warping, Multicylinder sizing & plain power loom.
7. Identify the fabric structure of following weaves.
 - a) Plain,
 - b) Simple twill
 - c) Simple satin and sateen
 - d) Simple crepe

8. Calculate yarn number :
9. Define the yarn numbering systems.
 - i.e. Direct & indirect yarn numbering system & Know the calculation of yarn numbering.
 - a) English count.
 - b) Tex count.
 - c) Denier count.
10. Understand the principles of Knitting & Texturising processes:
11. Know principles of knitting & texturising.
12. Describe types of texturised yarn & texturising process.

4. COMMUNICATION SKILLS:

1. Deliver a talk on a topic fluently and confidently for five minutes (Or more)
2. Counsel people in work situation.
3. Write assignment (Classroom, Library, Home).

5. TOPICS AND SUBTOPICS:

Topic-1 Ginning:

(Introduction to Ginning)

- 1.1 Object of ginning & passage of material through macarthy gin list the important parts.

Topic-2 Spinning:

(INTroduction to Spinning)

- 2.1 Objects of Blowroom & passage of material through
 - hopper bale opener
 - reiter automixer
 - scutcher above machine
- 2.2 Objects of carding & passage of material through carding machine with its important parts.
- 2.3 Objects of drawing & passage of material through drawing frame Machine with its important parts

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- 2.4 Objects of comber & passage of material through comber machine with its important parts.
- 2.5 Objects of canfed inter & passage of material through it along with important parts.
- 2.6 Objects of ring frame & passage of material through it with its important parts.

Topic-3 Weaving:

(Introduction to Weaving)

- 3.1 Objects of winding passage of material through autoconer winding machine and important parts of machine.
- 3.2 Objects of warping passage of material through B.C. warping machine & the important parts of machine.
- 3.3 Objects of sizing passage of material through multicylinder sizing machine & the important parts of machine.
- 3.4 Objects of pirn winding passage of material through any one super speed machine & list the important parts.
- 3.5 Objects of loom passage of materials through the powerloom its important parts.
- 3.6 Classification of shuttle-less weaving machines.

Topic-4 Fabric structure:

(Representation weave structure on graph paper)

- 4.1 introduction to basic weaves and its construction.
Simple plain, twill, & satin (ordinary weaves only).
- 4.2 Quality particulars of special fabrics related with basic weaves like long cloth, poplin, loan, voil, denim, gaberdian etc.

Topic-5 Knitting & Texturising:

(Outline of knitting & Texturising)

- 5.1 Principle of knitting.
- 5.2 Principle of texturising.
- 5.3 Types of texturised yarn.
- 5.4 List the different texturising process.

Topic-6 Calculation:

(Introduction to yarn numbering system)

6.1 English count.

6.2 Tex count.

6.3 Denier count

6. LABORATORY EXPERIENCES:

1. Prepare a sketch and identify important parts of Ginning machine.
2. Prepare a sketch and identify important parts of Hopper bale opener.
3. Prepare a sketch and identify important parts of Porcupine opener.
4. Prepare a sketch and identify important parts of Rieter automixer.
5. Prepare a sketch and identify important parts of Scutcher.
6. Prepare a sketch and identify important parts of Autoconer winding machine.
7. Prepare a sketch and identify important parts of Super speed pirn winding machine.
8. Demonstration of B.C. warping machine.
9. Demonstration of Multi cylinder sizing machine.
10. Prepare a passage of yarn & cloth on plain power loom.
11. Construct design draft & pegplan of simple twill, simple satin, sateen and crepe weave and identify the weave of given fabric sample.
12. Prepare scatch of simple warp & weft knitted structures.
13. Prepare a sketch and label the important parts of texturising machine.

7. SUGGESTIVE INSTRUCTIONAL STRATEGIES:

No.	TRS EO's	Instructional Strategies	Key Resources needed	Remarks
1	1 1.1.1	Discussion	Chart	
2	1 1.1.2	Lab-Experience	Industrial visit	
3	1 1.1.3	Lab-Experience	Industrial visit	
4.	2 2.1.1	Lab-Experience	Industrial visit	
5.	2 2.1.2	Discussion	Chart, sample	
6.	3 3.1.1	Discussion	Chart, sample	

8. REFERENCES

Sr.No	Name of Books	Authors
1.	Cotton spinning	Butterworth series
2.	Cotton spinning	Gilbert Merrill
3	Cotton spinning	Teggart
4.	Aritho spin-weave	T.C.Shah
5.	Yarn preparation Vol-I	R. Sengupta
6.	Yarn preparation Vol-II	R. Sengupta
7.	Weaving mechanism	Banerjee
8.	Sizing	Ajgoankar

9. ASSESSMENT SCHEME :

TOPIC NO.	NAME OF TOPIC	PERCENTAGE WEIGHTAGE
1.	Ginning	05
2.	Spinning	25
3.	Weaving	25
4.	Fabric Structure	20
5.	Knitting & Texturising	10
5.	Calculation	15
	Total	100