DIPLOMA IN APPAREL DESIGN AND FABRICATION TECHNOLOGY

SECOND SEMISTER

	**Course Title: FIBER SCIENCE-I**		
	Credits (L:T:P) : 4:0:0	**Total Contact Hours: 52**	**Course Code: 15FT22T**
	Type of Course: Lectures, Self Study & Quiz	**Credit :04** **SEE- 100 Marks** **CIE- 25 Marks**	**Core/ Elective: Core**

Prerequisites: Knowledge of basic fibers

COURSE OBJECTIVES

COURSE OBJECTIVES:

1. **To know the Classification of Textile Fibers**
2. **To understand the manufacturing process of natural Textile fibers**
3. **To know the properties of various textile fibers**
4. **To acquire the knowledge of uses of Textile Fibers**
5. **Apply tests to identify the Textile Fibers ,properties and fiber use**
6 **Analyze sources of textile fibers**

At the end of the course the students should be able to:

Course Outcomes	
CO1	**Ability to understand various types of textile fibers and their properties**
CO2	**Ability to choose fiber as required for end use**
CO3	**Ability to understand manufacturing process**
CO4	**To analyze the evaluate structure of fibers**
CO5	**Analyze source of textile fibers and their manufacturing**
C06	**Gain proficiency in fiber identification by different tests**

Course Outcomes		CL	Linked PO	Teaching hrs
CO1	Ability to understand various types of textile fibers and their properties	U/A	1,2,5,9	6
CO2	Ability to choose fiber as required for end use	U/R/A	1,2,4,5,8	08
CO3	Ability to understand manufacturing process	U/R/A	1,4,5,8,9,10	20
CO4	To analyze the evaluate structure of fibers	U/R/A	1,4,5,9,10	08
CO5	Analyze source of textile fibers	U/R	3,6,7,10	04
CO6	Gain proficiency in fiber identification by different tests	U/R/A	1,3,8,10	06
	Total			52

COURSE-PO ATTAINMENT MATRIX

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
FIBER SCIENCE	3	2	1	3	3	1	1	3	3	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If ≥40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If < 5% of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

COURSE CONTENT AND BLUE PRINT OF MARKS FOR SEE

Unit No	Unit Name	Hour	Questions to be set for (5marks) PART - A			Questions to be set for (10marks) PART - B			Marks weightage (%)
			R	U	A	R	U	A	
1	INTRODUCTION TO TEXTILES	6	1	-	-	-	1	-	11.53
2	COTTON	10	-	1	1	1	-	1	19.23
3	LINEN	10	1	1	-	-	1	1	19.23
4	WOOL	10	-	1	1	1	-	1	19.23
5	SILK	10	1	-	1	-	1	1	19.23

6	VISCOSE RAYON,NYLON,POLYSTER	6	-	1	-	-	-	1	11.53
			09(45marks)			10(100 marks)			100
	TOTAL	52							

Legend: R; Remember, U: Understand A: Application

Unit	Major Topics	Hours Allotted
1	INTRODUCTION TO TEXTILES	6
2	COTTON	10
3	LINEN	10
4	WOOL	10
5	SILK	10
6	VISCOSE RAYON,NYLON,POLYSTER	6
	TOTAL	52

UNIT : I **6hours**

INTRODUCTION TO TEXTILES

1.1 Classification of Textile Fibers their Sources and their properties

1.2 Natural fibers – Vegetable, Animal, Mineral

1.3 Manmade Fibers --cellulosic

1.4 Non Cellulosic Polymers -Protein, Rubber, Metallic

1.5 Study of fibers -- Staple, Filament and their properties

UNIT II **10 hours**

COTTON

2.1 Introduction Cultivation and Harvesting, Ginning
2.2 Mill process of cotton
2.3 Types of Cotton

2.4 Physical Properties
2.5 Chemical Properties
2.6 By products of Cotton
2.7 Uses of Cotton
2.8 Identification of cotton - Feeling test, Burning test ,Chemical test, Microscope test, tearing test, Breaking test

UNIT :III

LINEN **10 hours**

1. **Introduction to Linen**
2. **Cultivation of Linen Fiber**
3. **Manufacturing process of Linen fiber**
4. **Physical properties**
5. **Chemical Properties**
6. **Uses of linen**
7. **Feeling test, Burning test ,Chemical test ,Microscope test ,Breaking test , Tearing test**

UNIT IV

WOOL **10 hours**

1. **Introduction to Wool**
2. **Wool Producing countries**
3. **Classification of Wool by Fleece and Breed**
4. **Manufacturing process of Wool**
5. **Manufacturing Process of Worsteds**
6. **Difference between wool and worsteds-Fiber, Yarn, Fabric**
7. **Wool labeling, Recycled Wool**
8. **Physical properties**
9. **Chemical Properties**
10. **Uses**
11. **Identification - Feeling test, burning test ,chemical test ,microscope test , Breaking test , Tearing test**

UNIT : V

SILK **10 hours**

5.1 History of Silk

5.2 Silk producing Countries

5.3 Sericulture, Life cycle of Silk Worm

5.4 Reeling Throwing of Cocoons

5.5 Different types of silk-Degummed, Spun, Weighted, Wild, Raw Silk

5.6 Physical Properties

5.7 Chemical Properties

5.8 Uses

5.9 Identification , - Feeling test, burning test ,chemical test ,microscope test , Breaking test , Tearing test

UNIT VI **06 hours**

VISCOSE RAYON,NYLON,POLYSTER

6.1 Manufacturing Process of Viscose Rayon

6.2 Physical properties of Viscose Rayon, Nylon and polyester

6.3 Chemical Properties of Viscose Rayon, Nylon and polyester

6.4 Uses of above fibers

6.5 Identification of above fibers - Burning test ,chemical test ,Microscope test Tearing Test,

TWO HOURS OF SEMINARS

Every student to select one of the following topic for the seminar.

1**. INDIAN COTTON - VARITIES AND COTTON PRODUCING STATES**

2. SILK FABRICS

Reference books

1. **Fibre to fabric – Bernad .p corbmen**

2. **Introduction textile –Kanver veerendra pal singh**
3. **House hold textile and laundry work –Durga delkar**

COURSE ASSESSMENT AND EVALUATION

	What		To Whom	Frequency	Max. Marks	Evidence Collected	Course Outcomes
DIRECT ASSESSMENT	CIE- Continuous Internal Evaluation	I A Tests	Students	Three IA (Average marks of three IA tests are considered)	20	Blue Books	1 to 5
		Class room Assignments		Class room Assignments	05	Log of Activity	1&2
				TOTAL	25		
	SEE -SEMESTER END EXAMINATION	End Exam		End Of the Course	100	Answer Scripts	ALL CO's
INDIRECT ASSESSMENT	Student Feedback on course		Students	Middle Of The Course	Feed Back Forms		
	End of Course Survey			End Of The Course	Questionnaire		ALL CO's

Note: I.A. test shall be conducted for 20 marks. Average marks of three tests shall be rounded off to the next higher digit.

Note to I A Verifier : The following documents to be verified by CIE verifier at the end of semester

1 Blue books
2 Student suggested activities report for 05 marks
3 student feedback on course regarding Effectiveness of Delivery of instructions and Assessment Methods.

- **MODEL OF RUBRICS FOR ASSESSING STUDENT ACTIVITY**

Dimension	Scale					Students Score				
	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	1	2	3	4	5
1.Research & gather information	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; most refer to the topic	Collects a good information; all refer to the topic	Collects a excellent deal of information; all refer to the topic	Ex: 2				
2.Fulfil team's roles & duties	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; most refer to the topic	Collects a good information all refer to the topic	Collects a excellent deal of information; all refer to the topic	3				
3.Shares work equally	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; most refer to the topic	Collects a good information all refer to the topic	Collects a excellent deal of information; all refer to the topic	4				
4.Listen to other Team mates	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; most refer to the topic	Collects a good information; all refer to the topic	Collects a excellent deal of information; all refer to the topic	5				
Grand Average/Total=(2+3+4+5)=14/4=3.5=4						4				

Note: The above rubric is only an example. The concerned Course Coordinator may devise appropriate rubrics for the assigned activity.

MODEL QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks
Ex: I test/6 th weak of sem 10-11 a m	II SEM	FIBER SCIENCE	20
	Year: 2015-16	Course code:15FT 22T	

Name of Course coordinator : **Units:1,2 Co: 1,2**

Note: Answer all questions

Question no	Question	CL	CO	PO
1	Classify natural cellulose fibres	A	1	1,2
2	write the Properties of Textile Fibers	U	1	1,2
3	What is Ginning Explain OR write the by-products of Cotton	A	2	1,2
4	OR Describe types of cotton	R/u	2	1,2

MODEL QUESTION PAPER

DIPLOMA IN APPAREL DESIGN AND FABRICATION TECHNOLOGY

SECOND SEMESTER

COURSE TITLE: PATTERN ILLUSTRATION-II

PART-A

ANSWER ANY SIX QUESTIONS.EACH QUESTION CARRIES FIVE MARKS

Q NO 1 write the Properties of Textile Fibers

Q NO 2 What is Ginning Explain

Q NO 3 Describe the Physical Properties of Cotton

Q NO 4 Write the Cultivation Process of Linen Fiber

Q NO 5 Explain the Burning test of Wool Fiber

Q NO 6 Describe Chemical Test of silk fiber

Q NO 7 write the Physical Properties of Viscosr Rayon

Q NO 8 Explain the Feeling and Tearing Test of Cotton fiber

Q NO 9 write the by-products of Cotton Fiber

PART-B

ANSWER ANY SEVEN QUESTIONS.EACH QUESTION CARRIES TEN MARKS

Q NO 10 Explain the manufacturing Process of Cotton Fibre

Q NO 11 What is Retting explain different Types of Retting processes

Q NO 12 Explain the following Tests of Wool Fibre

A) Burning b) Feeling c)Chemical d)Microscope test

Q NO 13 Define Sericulture Explain the Life Cycle of Silk Worm with neat sketch

Q NO 14 Explain the Physical and Chemical properties of Nylon and Polyster fibre

Q NO 15 Explain the manufacturing process of Wool Fibre

Q NO 16 Distinguish Between Wool and Worsteds Fiber

Q NO 17 Explain the following

a) Degummed Silk b) Raw Silk C) Pure Silk e) Spun Silk

Q NO 18 Explain the Manufacturing process of Viscose Rayon

Q NO 19 Write the classification of Textile fibers.

MODEL QUESTION BANK

FIBER SCIENCE-I

FIVE MARKS QUESTIONS

REMEMBER

1. Classify natural cellulose fibres
2. Classify non cellulosic polymers
3. Write the essential properties of textile fibres
4. Explain staple and filament
5. Describe the cultivation of cotton
6. What is Ginning process explain
7. Explain carding process of cotton
8. Explain combing and drawing out process of cotton
9. Describe types of cotton
10. Write the physical properties of cotton
11. Write the l chemical properties of cotton
12. Write the by-products of cotton
13. Write the burning test of cotton
14. Write the chemical test of cotton
15. Write the Microscope test of cotton
16. Write the tearing and breaking test of cotton
17. How do you identify cotton under feeling test
18. Describe the cultivation of Linen fibre
19. Explain types of retting process
20. Explain hackling
21. Explain combing process
22. Explain breaking and scotching
23. Write the physical properties of linen
24. Write the chemical properties of linen
25. Write the uses of linen fibre
26. Write the burning test of linen
27. Write the chemical test of linen
28. Write the Microscope test of linen
29. Write the tearing and breaking

UNDERSTAND

30. Write wool producing countries
31. Classify wool by fleece
32. classify wool by breed
33. Write wool sorting and scouring
34. Write the qualities 0f woollens
35. Write the properties of worsteds
36. Explain carbonizing and gilling process of wool fibre
37. What is wool labeling? Describe
38. Describe recycled wool
39. Write physical properties of wool fibre
40. Explain chemical properties of wool fibre
41. Describe the uses of wool fibre
42. Explain microscopic test of wool fibre with neat sketch
43. Write the burning test of wool fibre
44. Write the feeling test of wool fibre
45. Write the history of silk
46. Write silk producing countries
47. What is Sericulture explain
48. Describe lifecycle of silkworm

APPLICATION

49. Explain silk reeling
50. Explain the Physical properties of Silk
51. Explain the chemical properties of silk
52. Describe the uses of silk
53. Explain the burning test of silk
54. Describe the microscopic test of silk
55. Explain the chemical test of silk
56. Explain the Physical properties of Nylon
57. Explain the chemical properties of Nylon
58. Describe the uses of Nylon
59. Explain the burning test of Nylon
60. Describe the microscopic test of nylon
61. Explain the chemical test of nylon
62. Explain the Physical properties of Polyster
63. Explain the chemical properties of Polyster
64. Describe the uses of Polyster

65. **Explain the burning test of Polyster**
66. **Describe the microscopic test of polyster**
67. **Explain the chemical test of Polyster**
68. **Explain the Physical properties of Viscose Rayon**
69. **Explain the chemical properties of Viscose Rayon**
70. **Describe the uses of viscose Rayon**
71. **Explain the burning test of viscose Rayon**
72. **Describe the microscopic test of Viscose rayon**
73. **Explain the chemical test of viscose Rayon**

EACH QUESTION CARRIES TEN MARKS

REMEMBER

1. **Describe the classification of textile fibres and their source**
2. **Explain the essential and desirable properties of Textile fibres**
3. **Describe vegetable fibres and their sources**
4. **Describe non cellulosic polymers and their sources**
5. **Explain the manufacturing / Mill process of cotton fibre**
6. **Describe the types of cotton fibres and write their uses**
7. **Write the properties of cotton fibre**

UNDERSTAND

8. **Describe the by products and uses of cotton**
9. **Explain microscopic and chemical test of cotton fibre**
10. **Explain cultivation and Retting process of linen fibre**
11. **Describe the Manufacturing process of Linen fibre**
12. **Write the properties of Linen Fibre**
13. **Describe the different tests used to identify Linen fibre**
14. **Differentiate between Wool and Worsteds**
15. **Explain the Manufacturing process of wool fibre**
16. **Describe the properties of Wool fibre**

APPLICATION

17. **Describe the different tests used to identify Wool fibre**
18. **Explain Sericulture and Life cycle of silk worm with neat sketch**
19. **Describe different types of Silk**
20. **Write the properties and uses of silk**

21. Describe the different tests used to identify Linen fibre
22. Explain the manufacturing process of viscose Rayon
23. Explain the properties of nylon
24. Explain the properties of Polyster
25. Explain the properties of viscose rayon
26. Write the uses of Textile fibres

Feeling test, burning test, chemical test, microscope test , Breaking test, Tearing test