Gyanmanjari Innovative University

Course Syllabus
Gyanmanjari Institute of Design
Semester-3

Subject: Textile Science - Fiber, Yarn, Fabric- BDEFD13322

Type of course: Major Core

Prerequisite: Basic knowledge of natural and synthetic materials, an understanding of general science concepts (especially physics and chemistry), and an interest in textiles or fashion are helpful prerequisites for studying Textile Science – Fiber, Yarn, Fabric.

Rationale: The subject Textile Science is fundamental for understanding the structure, properties, and processing of textiles from raw fiber to finished fabric. It equips students with essential knowledge about different types of fibers, yarns, and fabric construction techniques, helping them make informed choices in design, production, and quality control. This understanding is crucial for innovation, sustainability, and functionality in the textile and fashion industries.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
CI	T	P	C	Theory Marks		Practical Marks (E)		CA (I)	
				ESE	MSE	V	P	ALA	
2	0	0	2	60	30	10	00	50	150

Legends: CI-Classroom Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester *Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.*

CourseContent :

Sr. no.	Course content
1	**Unit-1 – Introduction to Textile & Classification** 1.1 Key Terms related to fiber, Yarn & Fabric 1.2 Classification of Fiber

2	**Unit -2 - Properties of Textile fibers – Natural and Manmade** 2.1 Introduction to Textile Fiber 2.2 Properties of Fiber 2.3 Difference between Natural & Manmade
3	**Unit-3 – Yarn Classification & Manufacturing** 3.1 Classification of Yarns 3.2 Yarn Types & Functions 3.3 Numbering System
4	**Unit -4 – Fabric Manufacturing** 4.1 Weaving a. Introduction to weaving b. Types of weaves and applications 4.2 Knitting a. Introduction to knitting b. Warp knitting & Weft knitting 4.3 Nonwoven a. Introduction to Nonwoven Types and applications of nonwovens

Continuous Assessment:

	Active Learning Activities	Marks
1	**Fabric Presentation** Do research and make a PPT on sustainable fabric and Upload the PPT on the GMIU portal.	10
2	**Swatch Collection** Collect a different fabric swatches other than common fabric, Make a fabric board and upload the photo of board on the GMIU portal.	10
3	**Manmade & Handmade** Find the sampler of manmade & handmade fabric, further do as per faculty instruction and Upload the PPT of Difference analytic on the GMIU portal.	10
4	**Visit Company** Visit manufacturing company, know their types of fabric make a report on visiting and Upload the Word file on the GMIU portal.	10
5	**Attendance**	10
	Total	**50**

Suggested Specification table with Marks (Theory): 60%

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance(R)	Understanding(U)	Application(A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	40%	40%	20%	-	-	-

Note: This specification table shall be treated as a general guideline for students and teachers.
The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course, the students should be able to:	
CO1	Impart basic understanding of the different fibers, their properties and end use application.
CO2	Enlighten about the different yarns used in apparel manufacturing
CO3	Select fabrics for different end uses based on their properties
CO4	Impart practical knowledge of fiber and fabric identification

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Reference Books:

[1] Bukayev, (1984) General Technology of Cotton Manufacturing Mir Publication.
[2] Collier, B. J. (2012). Understanding textiles (7th ed.). Pearson.
[3] Wilson, S. L. (2012). Textiles: Fiber to fabric (7th ed.). Pearson.
[4] Sinclair, K. R. (2011). Sustainable textiles: Life cycle and environmental impact. Woodhead Publishing.