

Lesson Plan

Name of Faculty: Sanjay Sigger, Lecturer (GF)

Discipline: Textile Processing

Semester: 5th

Subject: Technical Textiles

Lesson Plan Duration: 15 weeks

Work load (Lecture /Practical) per week (in hours): Lectures—03, Practical—03

Week	Theory		Practical	
	Lecture Day	Topic (Including Assignment/ Test	Practical Day	Topic
1 st	1	Introduction: Definition, classification of technical textiles. (2 hrs)	1	Draw the chart of classification of technical textiles and its applications.
	2	Introduction: Definition, classification of technical textiles.		
	3	Geo-Textiles: Introduction, definition, fibers used for Geo-textiles and their properties. (10 hrs)		
2 nd	4	Geo-Textiles: Introduction, definition, fibers used for Geo-textiles and their properties.	2	Collect and analyze sample of geo-textiles (any one) w.r.t to its composition material, construction and any other relevant properties.
	5	Characteristics of Geo-Textiles: Woven.		
	6	Characteristics of Geo-Textiles: Non-Woven.		

3 rd	7	Application of Geo-Textiles: Geo-grids, Geo-nets, Geo-composite.	3	Collect and analyze samples of (any one) medical textiles w.r.t to its composition material, construction and any other relevant properties.
	8	Application of Geo-Textiles: Geo-membranes, Geo-Cell, Geo-mattress.		
	9	Medical Textiles: Introduction, definition and Characteristics of fibers used for medical textiles.		
4 th	10	Medical Textiles: Introduction, definition and Characteristics of fibers used for medical textiles.	4	Collect and analyze samples of (any one) automotive textiles w.r.t to its composition material, construction and any other relevant properties.
	11	Application of Medical Textiles: Based on their use Outside the body (pressure garments, bandages, dressings, gowns, masks, caps, shoe covers etc.)		
	12	Application of Medical Textiles: Inside the body (bifurcated arterial prosthetic graft, artificial kidneys, joints, tendon, vascular grafts & artificial heart valve etc.)		
5 th	13	Automotive Textiles: Introduction, Definition. (9 hrs)	5	Collect and analyze samples of (any one) sports textiles w.r.t to its

				composition material, construction and any other relevant properties.
	14	Fibers used for automotive textiles and their specific properties.		
	15	Applications of Automotive Textiles: Upholstery, carpets,		
6 th	16	Applications of Automotive Textiles: Tyres, safety.	6	Collect and analyze samples of (any one) industrial textiles w.r.t to its composition material, construction and any other relevant properties.
	17	Applications of Automotive Textiles: Filters and engine compartment items.		
	18	Protective Textiles: Introduction, Definition,.		
7 th	19	Fibers used for protective textiles and their specific properties.	7	Collect and analyze a sample of non-woven carpet w.r.t material used, construction, extension, compactness, wettability and bonding property.
	20	Application of Protective Textiles: Bullet Proof fabric, fire proof fabric, high visibility fabric.		

	21	Application of Protective Textiles: Protection from electromagnetic radiations, protection against micro-organisms, chemicals and pesticides.		
8 th	22	Industrial Textiles: Introduction, Definition. (10 hrs)	8	Draw flow chart of production cycle of non woven process.
	23	Fibers used for industrial textiles and their specific properties.		
	24	Application of Industrial Textiles: Cords and ropes, belts.		
9 th	25	Application of Industrial Textiles: Filter fabrics.	9	Draw line diagram and explain the dry-laid web formation method.
	26	Sports Textiles: Introduction, Definition.		
	27	Fibers used for sports textiles and their specific properties.		
10 th	28	Application of Sports Textiles: Sports clothing, waterproof breathable materials.	10	Draw line diagram and explain the wet-laid formation method.
	29	Application of Sports Textiles: Sports surfaces and equipments.		
	30	Textiles for Packaging: Introduction, Definition, Fibers used in packaging and their specific		

		properties.		
11 th	31	Application of Packaging Textiles: Fabrics for bags and luggage, food packaging.	11	Draw sketch and explain the spun bond system.
	32	Coating and laminating Textiles: Introduction and Definition. (5 hrs)		
	33	Applications of coating and laminating textiles.		
12 th	34	Applications of coating and laminating textiles.	12	Draw sketch and explain the melt blown system.
	35	Polymeric materials and fabric substrates for coating.		
	36	Fabric lamination process and resins used for it.		
13 th	37	Non Woven Textiles: Introduction and Definition.	13	Draw sketch and explain the needle punching bonding method.
	38	Raw Material (fibers) used in non-woven textiles.		
	39	Fibre properties for consideration - Crimp, count, length, finish etc.		
14 th	40	Resultant fabric properties (positive and negative) of non- woven textiles made from different fibers.	14	Draw sketch and explain the thermo-bonding method.

	41	Flow chart of production cycle of non- woven textiles.		
	42	Flow chart of production cycle of non- woven textiles.		
15 th	43	Web formation methods: Purpose of web formation methods. Dry laid system.	15	Checking of files and Viva Voce
	44	Wet laid system, spun bond system and melt blown system.		
	45	Web Bonding Methods: Purpose of bonding methods. Mechanical bonding.		
16	46	Thermal bonding.		Checking of files and Viva Voce
	47	Chemical bonding.		
	48	Applications of non-woven textiles.		