

Lesson Plan

Name of Faculty: Jitender Kumar, Lecturer

Discipline: Textile Technology

Semester: 5th

Subject: Technical Textiles

Lesson Plan Duration: 15 weeks

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

Week		Theory
	Lecture Day	Topic (Including Assignment/ Test
1 st	1	Introduction: Definition, classification of technical textiles. (2 hrs)
	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.
	5	Characteristics of Geo-Textiles: Woven, Non-Woven.
	6	Application of Geo-Textiles: Geo-grids, Geo-nets, Geo-composite.
3 rd	7	Application of Geo-Textiles: Geo-membranes, Geo-Cell, Geo-mattress.
	8	Medical Textiles: Introduction, definition and Characteristics of fibers used for medicaltextiles.
	9	Medical Textiles: Introduction, definition and Characteristics of fibers used for medicaltextiles.
4 th	10	Application of Medical Textiles: Based on their use Outside the body (pressure garments, bandages, dressings, gowns, masks, caps, shoe covers etc.)
	11	Application of Medical Textiles: Inside the body (bifurcated arterial prosthetic graft, artificial kidneys, joints, tendon, vascular grafts & artificial heart valve etc.)
	12	Automotive Textiles: Introduction, Definition. (9 hrs)
5 th	13	Fibers used for automotive textiles and their specific properties.
	14	Applications of Automotive Textiles: Upholstery, carpets,

	15	Applications of Automotive Textiles: Tyres, safety.
6 th	16	Applications of Automotive Textiles: Filters and engine compartment items.
	17	Protective Textiles: Introduction, Definition,.
	18	Fibers used for protective textiles and their specific properties.
7 th	19	Application of Protective Textiles: Bullet Proof fabric, fire proof fabric, high visibility fabric.
	20	Application of Protective Textiles: Protection from electromagnetic radiations, protection against micro-organisms, chemicals and pesticides.
	21	Industrial Textiles: Introduction, Definition. (10 hrs)
8 th	22	Fibers used for industrial textiles and their specific properties.
	23	Application of Industrial Textiles: Cords and ropes, belts.
	24	Application of Industrial Textiles: Filter fabrics.
9 th	25	Sports Textiles: Introduction, Definition.
	26	Fibers used for sports textiles and their specific properties.
	27	Application of Sports Textiles: Sports clothing, waterproof breathable materials.
10 th	28	Application of Sports Textiles: Sports surfaces and equipments.
	29	Textiles for Packaging: Introduction, Definition, Fibers used in packaging and their specific properties.
	30	Application of Packaging Textiles: Fabrics for bags and luggage, food packaging.
11 th	31	Coating and laminating Textiles: Introduction and Definition. (5 hrs)
	32	Applications of coating and laminating textiles.
	33	Applications of coating and laminating textiles.
12 th	34	Polymeric materials and fabric substrates for coating.
	35	Fabric lamination process and resins used for it.
	36	Non Woven Textiles: Introduction and Definition, Raw Material (fibers) used in non-woven textiles.

13 th	37	Fibre properties for consideration - Crimp, count, length, finish etc.
	38	Resultant fabric properties (positive and negative) of non- woven textiles made from different fibers.
	39	Flow chart of production cycle of non- woven textiles.
14 th	40	Web formation methods: Purpose of web formation methods. Dry laid system.
	41	Wet laid system, spun bond system and melt blown system.
	42	Web Bonding Methods: Purpose of bonding methods. Mechanical bonding.
15 th	43	Thermal bonding, Chemical bonding.
	44	Applications of non-woven textiles.
	45	Revision