

## SC 101: Denim Washing and Finishing Techniques

**Course Duration:** 17 Weeks (4 months)

**Sessions per Week:** 2 (3.5 hours each)

**Total Hours:** 120

**Course Objectives:**

- Understand the fundamentals of denim fabric and its properties.
- Learn various denim washing, dyeing, and finishing techniques.
- Develop practical skills in applying these techniques.
- Understand environmental and sustainability considerations in denim processing.

Week	Session No	Session Title	Detailed Topics	Key Learning Methods
1	1	Course Introduction and Basics of Denim	<ul style="list-style-type: none"> <li>• Introduction to the course.</li> <li>• Overview of the denim industry.</li> <li>• Denim fabric types and structures.</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Q&amp;A</li> </ul>
	2		<ul style="list-style-type: none"> <li>• Characteristics and properties of denim fabric.</li> <li>• Introduction to denim manufacturing processes (weaving, dyeing).</li> </ul>	
2	3	Dyeing Techniques in Denim	<ul style="list-style-type: none"> <li>• History and chemistry of indigo dyeing.</li> <li>• Rope dyeing vs. Slasher dyeing processes.</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Q&amp;A</li> </ul>
	4		<ul style="list-style-type: none"> <li>• Practical demonstration: Indigo dye application.</li> <li>• Safety and handling of dyes.</li> </ul>	
3	5	Fundamentals of Denim Washing	<ul style="list-style-type: none"> <li>• Introduction to denim washing processes.</li> <li>• Objectives of denim washing (look, feel, and durability).</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Q&amp;A</li> </ul>
	6		<ul style="list-style-type: none"> <li>• Washing machine operations and equipment overview.</li> <li>• Safety protocols in denim washing facilities.</li> </ul>	
4	7	Stone Washing	<ul style="list-style-type: none"> <li>• Principles and process of stone washing.</li> <li>• Types of stones and their effects on denim.</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Q&amp;A</li> <li>• Practical</li> </ul>
	8		<ul style="list-style-type: none"> <li>• Practical demonstration: Stone washing techniques.</li> </ul>	

Week	Session No	Session Title	Detailed Topics	Key Learning Methods
5	9	Enzyme Washing	<ul style="list-style-type: none"> <li>Enzyme types and their role in washing.</li> <li>Environmental benefits of enzyme washing.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> <li>Practical</li> </ul>
	10		<ul style="list-style-type: none"> <li>Practical demonstration: Enzyme washing methods.</li> </ul>	
6	11	Acid Washing	<ul style="list-style-type: none"> <li>Introduction to acid washing: Process and safety considerations.</li> <li>Acid types and their impact on denim.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> <li>Practical</li> </ul>
	12		<ul style="list-style-type: none"> <li>Practical demonstration: Acid washing techniques.</li> </ul>	
7	13	Bleaching Techniques	<ul style="list-style-type: none"> <li>Chemistry of bleaching agents (hypochlorite, peroxide).</li> <li>Impact of bleaching on denim.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> <li>Practical</li> </ul>
	14		<ul style="list-style-type: none"> <li>Practical demonstration: Controlled bleaching techniques.</li> </ul>	
8	15	Abrasion and Distressing Techniques	<ul style="list-style-type: none"> <li>Manual vs. machine-based distressing techniques.</li> <li>Sandblasting, grinding, and laser distressing.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> <li>Practical</li> </ul>
	16		<ul style="list-style-type: none"> <li>Practical demonstration: Creating distressed effects on denim.</li> </ul>	
9	17	Tinting and Overdyeing	<ul style="list-style-type: none"> <li>Basics of tinting and overdyeing.</li> <li>Selecting colors for enhancing denim aesthetics.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> <li>Practical</li> </ul>
	18		<ul style="list-style-type: none"> <li>Practical demonstration: Tinting and overdyeing methods.</li> </ul>	
10	19	Softening and Texturing	<ul style="list-style-type: none"> <li>Role of softeners and lubricants in denim finishing.</li> <li>Mechanical and chemical softening processes.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> <li>Practical</li> </ul>
	20		<ul style="list-style-type: none"> <li>Practical demonstration: Application of softeners and texturing techniques.</li> </ul>	

Week	Session No	Session Title	Detailed Topics	Key Learning Methods
11	21	Coating and Special Effects	<ul style="list-style-type: none"> <li>Introduction to coating techniques (wax, resin).</li> <li>Creating special effects (metallic, leather-look).</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> <li>Practical</li> </ul>
	22		<ul style="list-style-type: none"> <li>Practical demonstration: Application of coatings and effects.</li> </ul>	
12	23	Laser and Ozone Treatments	<ul style="list-style-type: none"> <li>Sustainable treatments: Laser technology and ozone washing.</li> <li>Advantages over traditional techniques.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> <li>Practical</li> </ul>
	24		<ul style="list-style-type: none"> <li>Practical demonstration: Laser patterns and ozone washing.</li> </ul>	
13	25	Sustainability in Denim Processing	<ul style="list-style-type: none"> <li>Environmental impacts of denim washing and finishing.</li> <li>Reducing water and chemical use.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> <li>Practical</li> </ul>
	26		<ul style="list-style-type: none"> <li>Case studies: Sustainable denim brands and technologies.</li> </ul>	
14	27	Quality Control in Denim Washing and Finishing	<ul style="list-style-type: none"> <li>Inspection criteria for washed and finished denim.</li> <li>Common defects and troubleshooting.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> <li>Practical</li> </ul>
	28		<ul style="list-style-type: none"> <li>Practical session: Identifying and addressing defects.</li> </ul>	
15	29	Cost Management in Denim Finishing	<ul style="list-style-type: none"> <li>Cost analysis of various washing and finishing techniques.</li> <li>Optimizing resource use for cost efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> </ul>
	30		<ul style="list-style-type: none"> <li>Practical case study: Calculating cost for specific washes.</li> </ul>	
16	31	Final Project	<ul style="list-style-type: none"> <li>Planning and designing a denim finishing project.</li> <li>Hands-on project work: Applying multiple techniques.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> </ul>
	32		<ul style="list-style-type: none"> <li>Project continuation and guidance.</li> </ul>	
17	33	Final Presentation and Evaluation	<ul style="list-style-type: none"> <li>Presentation of final projects.</li> <li>Peer and instructor feedback.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> <li>Q&amp;A</li> </ul>
	34		<ul style="list-style-type: none"> <li>Course review and evaluation.</li> </ul>	

