

Intermediate Nonwovens Training Course  
 Instructor, Ed Thomas  
 Head of Research and Product Development,  
 First Quality, Fiberweb, (retired)

**COURSE AGENDA**

**Day 1**

**Tuesday**

8:30 am	Continental Breakfast	INDA
9:00 am	Introduction	DAVE ROUSSE, INDA
9:10 am	Welcome	DAVE NELSON, NCSU
9:20 am	Program Preview Video overview, nonwoven markets and product applications, information sources.	ED THOMAS, INSTRUCTOR
	The World of Nonwovens "Hands-on" examination of nonwoven fabric and end-use product samples as a means to illustrate the wide range of nonwoven usage. Establishment of "Analysis Teams and Tasks."	ED THOMAS, INSTRUCTOR
12:00 pm	LUNCH	INDA
1:00 pm	Nonwovens Technology Primer Definitions of nonwovens, short history of the technical evolution of the industry.	ED THOMAS, INSTRUCTOR
	Description of basic nonwoven manufacturing principles and systems. Fiber Fundamentals	ED THOMAS, INSTRUCTOR
	Generic types and characteristics, property comparisons, raw material-fabric property relationships.	
5:00 pm	Reception and "Analysis Team Bonding"	
6:00 pm	Adjournment (evening on your own)	

**Day 2      Wednesday**

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|----------|--|--------------------------------|
| 8:30 am  | Continental Breakfast<br>Analysis Team Work and Discussion Session   | INDA                           |
| 9:00 am  | Web Forming Technologies – Drylaid Nonwovens<br>Analysis of carding and staple fiber airlaid systems. Review of background, process technologies and recent developments.  | DAVE NELSON, INSTRUCTOR        |
|          | Web Forming Technologies - Wetlaid & Short Fiber Airlaid Nonwovens<br>Development of wetlaid nonwovens based on paper technology. Unique characteristics of cellulose fibers in wetlaid technology. Development of short fiber airlaid nonwovens and comparison of short fiber airlaid nonwovens technology with wetlaid nonwovens technology. | ED THOMAS, INSTRUCTOR          |
| 11:00 am | Travel to Nonwovens Institute  |                                |
| 11:30 am | Nonwoven Institute Welcome   | DAVE NELSON, INSTRUCTOR        |
| 11:40 am | Web Forming & Bonding Technologies - “Polymer to Fabric” Nonwovens<br>Basic principles associated with spunbond, meltblown and film-based nonwovens and the polymers used in their production.   | BEHNAM POURDEYHIMI, INSTRUCTOR |
| 12:30 pm | LUNCH  | NONWOVENS INSTITUTE            |
| 1:15 pm  | Web Forming and Bonding Technologies (con’t)<br>Systems for Spunlaced/ Hydro-entangled nonwovens.  | BEHNAM POURDEYHIMI, INSTRUCTOR |
| 3:00 pm  | Staple & Polymer Lab Discussion  | DAVE NELSON, INSTRUCTOR        |
| 3:20 pm  | Staple & Polymer Lab Tours & Demonstrations  | DAVE NELSON, INSTRUCTOR        |
| 5:25 pm  | Adjournment (evening on your own)  |                                |

**Day 3**

**Thursday**

8:30 am	Continental Breakfast Analysis Team Work and Discussion Session	INDA
9:00 am	Web Bonding Technologies I Mechanical bonding principles and systems.	ED THOMAS, INSTRUCTOR
	Web Bonding Technologies II Chemical and thermal bonding principles and systems.	ED THOMAS, INSTRUCTOR
	Nonwoven Fabric Finishing & Converting Principles, processes, and methods used to treat nonwoven fabrics to obtain enhanced physical and aesthetic properties for specific end-use.	ED THOMAS, INSTRUCTOR
12:00 pm	Travel to Nonwovens Institute	
12:30 pm	LUNCH	NONWOVENS INSTITUTE
1:15 pm 2:00 pm	Nonwoven Fabric Test Methods & Procedures Test Methods	AMY MINTON, LAB MANAGER
	Overview of nonwoven test methods and standardization of test procedures.	
3:00 pm	Test Lab Tours and Demonstrations	AMY MINTON, LAB MANAGER
5:25 pm	Adjournment (evening on your own)	

**Day 4**

**Friday**

8:15 am	Continental Breakfast	INDA
8:45 am	Future Trends Projection of future applications and developments in manufacturing materials, processes and products.	BEHNAM POURDEYHIMI, INSTRUCTOR



9:30 am	Analysis Team Presentations	ED THOMAS, INSTRUCTOR
10:30 am	BREAK	
10:45 am	Hot Topics Latest information regarding flushable wipes and single-use plastics.	DAVE ROUSSE, INDA
11:15 am	Nonwovens Markets Statistics, Trends & Directions	BRAD KALIL, INDA
12:15 pm	LUNCH/Course Adjournment Please exchange a completed evaluation for your certificate.	INDA