

2009 Course Tour

Day One

8:15 – 9:00	Registration, then coffee and continental breakfast
9:00 – 9:15	Introduction of participants, their interests, & Dr. Durkee
9:15 – 9:35	How ALL cleaning processes are supposed to work
HOW AQUEOUS AND SOLVENT TECHNOLOGY ARE SUPPOSED TO WORK	
9:35 – 10:10	<p>How aqueous cleaning should be done, right, the first time:</p> <ul style="list-style-type: none"> ◆ The three fundamental components of every aqueous cleaning process: chemistry, temperature, and force ◆ What a surfactant is and what it does; and why ◆ How aqueous cleaning products are formulated ◆ Why cleaning can't (more or less) be done at room temperature ◆ What happens to your aqueous cleaning agents as they are used ◆ How should soil (dirt, oil, etc.) be separated from your cleaning machine ◆ How oil skimmers work and what commercial types there are
10:10 – 10:25	Q&A discussion, including examination of attendee-supplied parts
10:25 – 10:45	<p>Continued –</p> <ul style="list-style-type: none"> ◆ The role of mechanical force in aqueous cleaning, and how it is applied by spray nozzles ◆ Application of mechanical force through ultrasonic transducers
11:45 – 11:00	Q&A discussion, including examination of attendee-supplied parts
11:00 – 11:30	<p>How Solvent Cleaning Should Be Done, Right the First Time:</p> <ul style="list-style-type: none"> ◆ The three components of every solvent cleaning process ◆ How cleaning solvents remove soils ◆ How to separate soil from used cleaning solvents, and recover the soil ◆ How to choose the right cleaning solvent ◆ The role of force in solvent cleaning technology ◆ The role of temperature in solvent cleaning technology ◆ When to use solvent cleaning technology, and when not to
11:30 – 11:45	Q&A discussion, including examination of attendee-supplied parts
11:45 – 12:00	Written quiz on material presented
12:00 – 13:00	Break for lunch and conference affairs
HOW TO DO RINSING AND DRYING, AND MANAGE CLEANING PROCESSES	
13:00 – 13:20	Review and discussion about material presented earlier, and the quiz about it
13:20 – 13:45	How Good Rinsing Should Be Done, for Either Type of Process:

	<ul style="list-style-type: none"> ◆ What is to be done, and expected, in every rinsing process ◆ There are two types of rinsing processes ◆ Why more rinsing (and cleaning and drying) is not always better ◆ How rinsing is different than cleaning ◆ What happens when rinsing isn't done right ◆ What DI water is and why it is sometimes used ◆ The key factor (and it's free) in managing rinsing processes – drainage ◆ How a cycle of cleaning and rinsing should be managed ◆ Why and how multistage operations can bring better quality and value
13:45 – 14:00	Q&A discussion, including examination of attendee-supplied parts
14:00 – 14:25	<p>How Drying Should Be Done for Aqueous Cleaning Processes:</p> <ul style="list-style-type: none"> ◆ Why it is so difficult to dry water from parts ◆ What should be done before drying of any parts (hint, it's what's done before rinsing) ◆ Just how much drying is needed ◆ Why evaporative drying is popular, and shouldn't be so ◆ Why non-evaporative drying schemes deserve the consideration of you and your organization ◆ How to get the last molecule of water off complex parts
14:40 – 14:55	Q&A discussion, including examination of attendee-supplied parts
14:55 – 15:10	Break
15:00 – 15:30	<p>How to Recognize and Manage Good (And Bad) Cleaning Work:</p> <ul style="list-style-type: none"> ◆ Simple and low cost methods of cleanliness measurement ◆ Why the water-break test is a disaster ◆ Surface energy methods are used in the printing industry, and not in the finishing industries; why? ◆ Fooling cleaning tests
15:30 – 15:50	Q&A discussion about cleanliness measurement in the finishing industries
15:50 – 16:20	<p>Stop Wasting Money! Use Statistics:</p> <ul style="list-style-type: none"> ◆ Class poll: is your cleanliness sampling program to take ONE sample, and then compare it to ONE other result? ◆ The folly of a single point comparison of values ◆ Statistics doesn't have to be managed by the IRS (instructor's story) ◆ What the "t-test" has to do with beer ◆ Use of the "t-test" to develop a sampling plan ◆ Use of the "t-test" to make a decision about surface cleanliness ◆ Who doesn't have a computer with a spreadsheet? Discuss... ◆ This material is just the start of your savings with statistics
16:20 – 16:35	Q&A discussion, including examination of attendee-supplied parts
16:35 – 17:00	Discussion on the day's learnings, questions, commentary; and written quiz

Day Two

09:00 – 09:20	<p>Review and discussion about material previously presented, and the written quiz about it:</p> <ul style="list-style-type: none"> ◆ Requests for supplementary topics to be briefly covered this afternoon
<p>HOW TO SELECT, PURCHASE, AND USE CLEANING MACHINES; AND MANAGE CHANGE IN A FINISHING ORGANIZATION</p>	
09:20 – 09:45	<p>What a Good Cleaning Machine Should Look like:</p> <ul style="list-style-type: none"> ◆ A cleaning machine is just a pile of metal (plastic) parts ◆ What you're buying is a design ◆ Just how much cleaning machine does your organization need? ◆ Useful lives of cleaning machines, and other fossils
09:45 – 10:00	<p>Discussion about machines used by attendees, and the above</p>
10:00 – 10:25	<p>Is the Cleaning Industry Cleaner than the Inside of a Cleaning Machine?</p> <ul style="list-style-type: none"> ◆ Nature of the industry ◆ The nature of competition ◆ The effect and extension of price competition ◆ Integration, it's what you're buying ◆ What suppliers of iron want from you ◆ What suppliers of juice want from you ◆ The effect of the internet ◆ About the used cleaning machine market
10:25 – 10:40	<p>Discussion Q&A, including any supplier attendees</p>
10:40 – 10:50	<p>Break</p>
10:50 – 11:05	<p>About Organizations:</p> <ul style="list-style-type: none"> ◆ They are stronger than are you ◆ How to manage change in your organization ◆ Devise, publish, progress, and manage against metrics you set ◆ Remember the "true change process"
11:05 – 11:20	<p>Q&A discussion, including examination of attendee-supplied parts</p>
11:20 – 11:50	<p>About Purchasing a New Cleaning Machine</p> <ul style="list-style-type: none"> ◆ Is one needed, and why? ◆ Four different types of user needs ◆ What you're buying – the solution to some problem ◆ Needs of the organization ◆ Needs for information
11:50 – 12:00	<p>Written quiz on material presented</p>
12:00 – 13:00	<p>Break for lunch and conference affairs</p>
13:00 – 13:15	<p>Review and discussion about material presented earlier, and the quiz</p>

	about it
13:15 – 13:30	<p>How to Make Your Purchase Choice</p> <ul style="list-style-type: none"> ◆ First, consider contract cleaning ◆ Secondly, use the standard "needs," "wants," and "likes" ◆ Choose a supplier who "thirsts" for your business, and has previously done it well before ◆ Your team drives this train ◆ Make the decision for your management
13:30 – 13:45	Discussion Q&A, including any supplier attendees
13:45 – 14:05	<p>How to Implement Your Team's Choice of Machines</p> <ul style="list-style-type: none"> ◆ Recall / reorganize your team ◆ Strongly consider the supplier as a member ◆ Get management to define success ◆ Have your team build a plan to produce that success ◆ Implement your plan ◆ Tell management you did so ◆ Document nearly everything ◆ Teach / report how your machine worked
14:05 – 14:15	Q&A discussion, including examination of attendee-supplied parts
14:15 – 14:35	<p>How to Fix a Broken Cleaning Line</p> <ul style="list-style-type: none"> ◆ FIRST, know that it's broken ◆ SECOND, know where it's broken and how ◆ THIRD, use your book and this course ◆ Use your skills; fix the problem ◆ Consider preventive measures ◆ Report success to management, and tell them why
14:35– 14:45	Q&A discussion, including examination of attendee-supplied parts
14:45 –15:00	Break
15:00 – 15:10	<p>How to Clean Without Cleaning Chemistry</p> <ul style="list-style-type: none"> ◆ A confession ◆ Using ultrasonic energy closely-focused on parts ◆ Using very hot water under pressurized spray
15:10 – 15:15	Q&A discussion, including examination of attendee-supplied parts
15:15 – 15:25	<p>Bioremediation Parts Washers – a Good Idea, or Not Useful in Finishing Operations?</p> <ul style="list-style-type: none"> ◆ A confession ◆ Single-stage batch hand-scrub cleaning ◆ No rinsing, no drying ◆ Sink-on-a-drum machines ◆ Microorganisms in cleaning fluid bio-oxidize non-synthetic oils to CO₂ and H₂O ◆ No aqueous waste, no attention, little replenishment

15:25 – 15:30	Q&A discussion, including examination of attendee-supplied parts
15:30 – 15:10	<p>Blast Cleaning – an EPA Favorite; Your Favorite?</p> <ul style="list-style-type: none"> ◆ US EPA views this as waste-free cleaning ◆ Like "Bowling for Cleanliness" ◆ Any solid can be blast ◆ Equipment can be rented, leased, purchased ◆ Short cycle times ◆ Can't access confined spaces ◆ Almost certain to generate a dust and noise problem ◆ And a disposal problem ◆ Can be low cost, but robotics are recommended
15:10 – 15:15	Q&A discussion, including examination of attendee-supplied parts
15:15 – 15:30	Is Nanotechnology the Future of Metal Finishing?
15:30 – 15:40	Q&A discussion, including examination of attendee-supplied parts
15:40 – 16:00	Managing Chemical Hazards
16:00 – 16:10	Q&A discussion, including examination of attendee-supplied
16:10 – 16:45	<p>Attendee-nominated topics, possibly including from course book:</p> <ul style="list-style-type: none"> ◆ Use of spreadsheets to do real process control and experimental design ◆ Myths and truths about flammability ◆ Global environmental regulations, and background about them ◆ Particle removal technology ◆ ?????
16:45 – 17:00	Oral quiz about overall course material