



PROCESS SCIENCES
INCORPORATED

presents

SMT Master Training Bootcamp



This course was designed to provide in-depth practical process understanding to those individuals interested in ensuring quality in electronic assemblies. This course was *developed from a need to improve yields* on the production floor, and to provide practical process understanding to the individuals who produce SMT products daily. Students will leave this program with a *deeper technical understanding* of SMT processes, and the *confidence* to know how and where they fit in.

This is *not* a "how to" class that describes which button to push... and it's *not* a purely theoretical course that is difficult to apply to reality... It *is* a program which answers the question "why" the surface mount process works the way it does.

Simple. Communication is one of the most fundamental limitations in many manufacturing environments today. Turnover and attrition make simple concepts difficult to maintain. Great efforts have been made to explain process issues in simple terms with diagrams, with an emphasis on yield improvement and an understanding of process variables.

Systematic. This program provides a solid technical foundation, and a systematic understanding of SMT processes – promoting excellence, accelerated problem-solving, and enhanced communication at every level.

Targeted. This course was designed with *you* in mind. It is suited for SMT operators, technicians and engineers. Quality managers – particularly those with limited experience in SMT production environments – will also benefit greatly from this material.

Course covers the following subject matter:

SMT History & General Theory:

History of SMT
Technical Issues
SMT Types Defined
SMT Process Defined
SMT Components
Substrates

Screen Printing & Solder Paste:

Solder Paste Rheology
Solder Paste and Stencil Handling
Screen Printing Process and Variables
Common Problems and Solutions

Adhesive Dispensing:

Adhesive Defined
Adhesive Selection Objectives
Dispensing Methods
Adhesive Cure Profile
Handling Adhesives
Common Problems and Solutions

Pick & Place:

Pick and Place Equipment
Math Review
How Pick and Place is Accomplished
Common Problems and Solutions
Pick and Place Inspection Criteria

Soldering:

Basic Principles of Soldering
Heat Transfer
Flux Classification
Cleaning Criteria

Reflow Soldering:

Reflow Soldering Equipment
The Reflow Profile
The Optimized Profile
Reflow Defect Mechanisms
Common Problems and Solutions
Reflow Inspection Criteria

Wave Soldering & Cleaning:

Wave Solder Equipment
Wave Solder Process
Cleaning Equipment
Cleaning Process
Wave Soldering Inspection Criteria

Rework:

Rework Philosophies
Methods
The Rework Process
BGA Rework

Material Handling:

ESD
Sensitive Devices
General Handling Criteria

The Process:

Pareto's Law
The Yield Equation
Problem Solving Tools
The Operators Role
Engineers Role

Duration: 16 Hours
Cost: \$895/per student

**For more information or to register for a class, please contact Alan
Couchman at 512-259-7070 x305, or email alan@process-sciences.com.**