



SMT 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. It was designed 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.

Simplicity. Great efforts have been made to explain process issues in **simple terms** with diagrams. The emphasis is placed on **yield improvement** and an understanding of the process variables.

Terminology. **Communication** is one of the most fundamental limitations in many manufacturing environments today. Turnover and attrition make simple concepts difficult to maintain. This program explains technical terms in everyday words, enhancing communication at **every level.**

Designed for SMT production **operators, technicians, and engineers.** The course is foundational for SMT Engineers.

Includes the following Subjects:

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
Rework Methods
The Rework Process
BGA Rework

Material Handling:

ESD
Moisture Sensitive Devices
General Handling Criteria

The Process:

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

*Samples of the course material can be viewed on our web-site at www.process-sciences.com.

Duration: 16 Hours
Cost: \$1050/per student

Please contact Philip Prud'homme at Process Sciences, Inc. at (512) 259-7070, FAX (512) 259-7073 or pwp@process-sciences.com if you need further information or would like to register for a class.