



## IPC J-STD-001-D

### Certified IPC Application Specialist (CIS)

Operator training is divided into 5 modules so that training can be tailored to meet your needs. Operators must complete training in Module 1, then may be trained on any or all of the other modules. Inspectors need to attend only modules 1 and 5. The following subjects are covered during this course. Young & Associates will customize the modules if no certification is desired.

Module 1	Specification Review (Mandatory)	One Day	Exams: Open and Closed Book (Average 70%) Workmanship Samples NOT REQUIRED
Module 2	Wire Preparation & Terminals	One Day	Exam: Open Book (70%) Workmanship Samples REQUIRED
Module 3	Through-Hole Printed Wiring Board	One Day	Exam: Open Book (70%) Workmanship Samples REQUIRED
Module 4	SMT Printed Wiring Board	One Day	Exam: Open Book (70%) Workmanship Samples REQUIRED
Module 5	Inspection and Process Control	One Day	Exam: Open Book (70%) Workmanship Samples not REQUIRED

#### Course Requirements

Candidates will take a 25 Question closed book exam and a 25 Question open book exam for Module 1 and an open book exam for all other modules. The lab soldering demonstrations must meet minimum requirements of the J-STD-001 as determined by the Certified Instructor. An overall score of 70% or better, on the classroom exams, and an overall score of 70% or better on the soldering demonstrations is necessary to be awarded a Certified IPC Specialist certificate.

Candidates who pass the certification examination will receive an IPC Certificate of Proficiency, indicating the areas of the J-STD-001 that were taught.



## **Module 1: Specification Review (Mandatory)**

### **Electro-Static Discharge (ESD)**

#### Terms and Definitions

- Principles of Static Electricity
- Damage Caused by ESD
- Susceptibility of items to ESD

### **Tools & Equipment (Use and Care)**

#### Terms and Definitions

- Cleanliness
- Tool Selection

### **Materials**

#### Terms and Definitions

- Solder (J-STD-006)
- Forms (bar, wire, paste, pre-forms)
- Flux (J-STD-004)
- Cleaning Agents
- Temporary Maskants
- Conformal Coating
- Spacers (Permanent and Temporary)
- Adhesives

### **Localized Cleaning Introduction**

- When to clean
- What to clean
- What to clean with
- Proper techniques for localized cleaning
- Section Nine: Basic Rework Techniques



- Rework Vs. Repair
- Solder Wick
- Continuous Vacuum
- Demonstration (Basic Through hole/SMT rework)
- Inspection (IPC-A-610-D)

## **Module 2: Wire Preparation & Terminals**

### **Wire and Terminals**

- Component Identification
- Wire Properties
- Terminals and Pins
- Inspection (IPC-A-610-D)

### **Preparing to Solder**

#### Terms and Definitions

- Solderability
- Fundamental Requirements for a good solder joint
- Materials Selection
- Thermal mass

### **Wire and Terminals Strip / Soldering**

#### Terms and Definitions

- Component Preparation
- Set-up and Preparation
- Soldering
- Inspection (IPC-A-610-D)
- Cleaning

Demonstration / Hands on Kit build (Assembly and soldering)



## **Module 3: Through-Hole Printed Wiring Board**

### **Preparing to Solder**

#### Terms and Definitions

- Solderability
- Fundamental Requirements for a good solder joint
- Materials Selection
- Thermal mass

### **Component Identification**

#### Through Hole Component Identification

#### Terms and Definitions

### **Through Hole Soldering**

#### Terms and Definitions

- Component Preparation
- Soldering
- Lead free vs. Leaded solder comparison
- Inspection (IPC-A-610-D)
- Cleaning

Demonstration / Hands on Kit build (Through hole assembly and soldering)

## **Module 4: SMT Printing Wiring Board**

### **Preparing to Solder**

#### Terms and Definitions

- Solderability
- Fundamental Requirements for a good solder joint
- Materials Selection
- Thermal mass



## **Component Identification**

### Surface Mount Component Identification

Terms and Definitions

## **SMT Soldering**

Terms and Definitions

- Set-up and Preparation
- Site and Component Preparation
- Solder Feeding and Fluxing
- Lead free vs. Leaded solder comparison
- Required Solder Joint Attributes
- Inspection (IPC-A-610-D)
- Soldering Demonstration / Hands on Kit build (SMT Soldering)

## **Module 5: Inspection and Process Control**

### **Wire and Terminals**

- Component Identification
- Wire Properties
- Lead free vs. Leaded solder comparison
- Terminals and Pins
- Inspection (IPC-A-610-D)

## **Component Identification**

### Through Hole Component Identification

- Inspection (IPC-A-610-D)
- Lead free vs. Leaded solder comparison
  - Fundamental Requirements for a good solder joint

## **Component Identification**

### Surface Mount Component Identification



## Terms and Definitions

- Inspection (IPC-A-610-D)
- Lead free vs. Leaded solder comparison
  - Fundamental Requirements for a good solder joint