



TRAINING

- Expert Training in the Latest Technologies
- Industry-Demanded Certifications

PCB TECHNOLOGY

Quality & Inspection

- IPC-A-610 Instructor & Operator Certification

Soldering & Assembly

- IPC J-STD-001 Instructor & Operator Certification

Bare Board Inspection

- IPC-A-600 Instructor & Operator Certification

Rework & Repair

- IPC-7711 & IPC-7721 Instructor & Operator Certification

Hand Soldering Skills

- Soldering Basics, Wires & Terminals, Through-Hole and Surface Mount Training

PCB Fundamentals

- Component Identification
- Electrostatic Discharge

PCB Design

- IPC Designer & IPC Advanced Designer Certification

COUNTERFEIT COMPONENTS

IDEA-STD-1010

- Seminars & Workshops
- IDEA-STD-1010 Essentials
- SAE AS5553 Counterfeit Electronics

CABLE & WIRE

HARNESST TECHNOLOGY

Quality & Inspection

- IPC-A-620 Instructor & Operator Certification

Hands-On Labs

- Crimping & Harness Assembly Training

TECHNICAL SUPPORT

- Manufacturing Start-Up
- Process Evaluation
- Subcontractor Qualification
- Equipment Evaluation
- Lead-Free, ESD, Process and Quality Audits

IPC ADVANCED DESIGNER CERTIFICATION (CID+)

IPC's Interconnect Designer Certification

IPC-2221 / IPC-2222 / IPC-T-50

COURSE DESCRIPTION

Continuing the educational series for PCB Design, the IPC Advanced Designer Certification or CID+ (Advanced Certified Interconnect Designer) is the ultimate professional industry certification for a designer looking to obtain what we would consider the highest possible PCB Design status in the industry. This certification gains you instant recognition in the industry as a designer that has obtained, executed and applied the concepts of design from schematic capture to production of a final product.

This 4-day, lectured course delves into design and fabrication issues that go beyond the fundamentals of layout, component placement and routing consideration to understanding fabrication materials, testing of not only electrical, but physical aspects of boards, electrical and signaling issues, complex component mounting strategies and requirements, and fabrication considerations for high end designs and circuitry.

Taught by recognized industry professionals, this program enhances your experience by exposing you to instructors that have a broad expertise and appreciation for the process.

Upon successful completion of the course and passing of the exam, you will receive a certification that is recognized throughout the industry, bringing additional credentials to your technical expertise.

Class materials are sent out upon enrollment. Participants are expected to be familiar with course materials prior to class.

Although not required, enrollment as a member in the IPC Designer Council is encouraged and the best part is, it's FREE.

WHO SHOULD ATTEND

This course would benefit anyone involved in the development, design and fabrication—at any level from sales, management, procurement, or quality—in printed circuit board production, however it is primarily taken for the advancement of the designer.

WHAT STUDENTS RECEIVE

Everyone who attends will receive the following:

- Advanced Designer Certification Study Guide

Everyone who successfully completes the program will receive:

- IPC Advanced Designer CID+ Certification
- Publication of your certification as an IPC Certified Advanced Designer
- Registered certification with the IPC for future validation

PREREQUISITES

All attendees must hold an active IPC Designer CID Certification and be registered with the IPC as a Designer in good standing prior to enrolling in this program.

CLASS SIZE

Maximum number of students is limited to ten (10) in order to provide greater instructor interaction. Call early to reserve your space.

COURSE OUTLINE

DAY 1

DESIGN CONSIDERATIONS

- Board Material Properties
- Plating Characteristics for Conductors and Holes
- Surface Finish and Treatment Characteristics
- Solder Mask/Coating Material Properties and Compatibility
- Homogeneous Material Performance Capability
- Statistical Process Control (SPC) with Test Coupons
- Reliability and Stress Test Evaluations
- Quality Life Cycle Tracking
- Materials and Compliance
- Solder Joint Reliability

PRINTED BOARD CHARACTERISTICS

- Design Standards to meet Fabrication and Assembly Goals
- Manufacturing Equipment Size Limitations
- Printed Board Length to Width Relationships
- Balanced Construction and Copper Balance
- Printed Board Thermal Management Techniques
- Controlled Expansion Constructions Using Special Cores
- Non-Standard Mechanical Outline (Case) Integration
- Individual Board Tooling Considerations
- HDI - Interconnect Vias Types and Strategies

DAY 2

ELECTRICAL PARAMETERS

- Physical Board Dielectric Parameters
- Shielding Techniques to Prevent Signal Emission
- EMI and EMC Emissions/Susceptibility
- General Principles of Impedance Control
- Signal Integrity Analysis
- Electrical Clearance and Dielectric Spacing
- Power and Ground Routing Techniques
- Conductor Current Carrying Capacity vs. Temperature Rise
- Layout Approaches for Crosstalk Minimization

DAY 3

COMPONENT AND ASSEMBLY ISSUES

- Component Comparison Between Area and Peripherals Arrays
- Component Types and Mounting Strategies
- Component Placement Strategy and Assembly Sequence
- Component Mounting Shock and Vibration Requirements
- Evaluation of Component Attachment Methods

DOCUMENTATION AND DIMENSIONING

- Parts List Development - BOM (Bill of Materials)
- Printed Board Tolerance Analysis
- Document to Facilitate Design to Fabrication Interface
- Printed Board & Assembly Data Format Standardization
- Assembly, Repair & Modification Tools and Techniques

DAY 4

Q & A

CERTIFICATION TESTING

REGISTRATION For pricing and more information, or to enroll, please call us toll free or visit eptac.com.

Toll Free: 1-800-64-EPTAC

Fax: 603-296-2377

email: register@eptac.com

Web: eptac.com

ON-SITE TRAINING Ask about customized course content, on-site training and training around your production schedules.