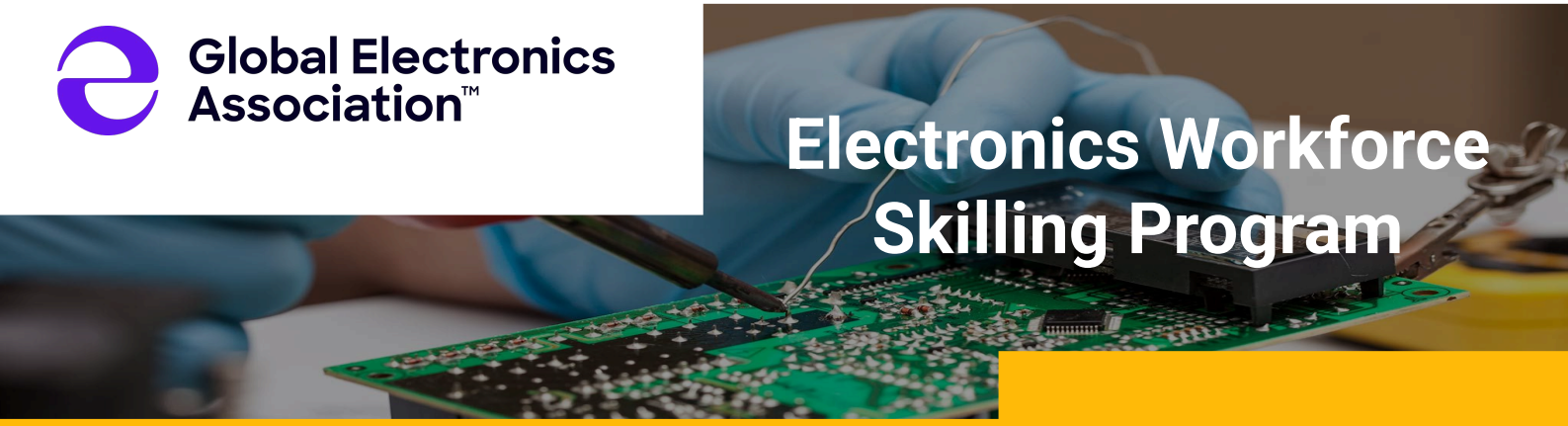
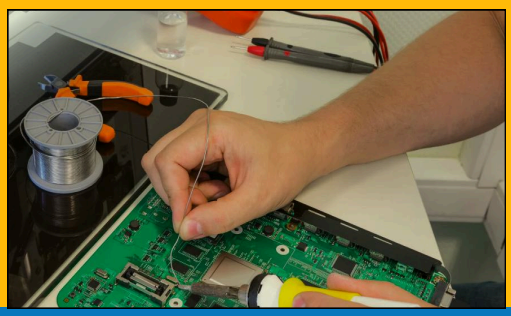
Global Electronics Association™



# Electronics Workforce Skilling Program

# Hand Soldering Fundamentals



**Details:** One of the significant processes in printed circuit board assembly is the hand soldering. Working on a circuit board, one may have to solder a through hole component or an SMT component. It is important to know that these solder joints require exact precision. Improper techniques can cause defective solder joints which many times may not be visually detectable. The soldering process varies based on the components being soldered and the specific technique used, but the core of the procedure is largely the same. Adhering to procedure, standards & best practices are the basic concepts for producing high quality and reliable solder joints.

## Who can participate

Operators/Newcomers engaged in electrical & electronics assembly/manufacturing process

## Mode of Training

Instructor-led hands-on practical Training available through Global Electronics Association

## Instructor

**Master IPC Trainer (MIT)** or
**Certified IPC Trainer (CIT)**

## Benefits of participation

This course will highlight hand soldering best practices. Whether the final product is used in telecommunications or aerospace, every step in the electronics manufacturing process is critical. Global Electronics Association supports industry in achieving world class high-quality end products and helps to ensure superior quality, reliability and consistency in electronics manufacturing.

## Syllabus: Hand Soldering

The workshop is organized into Theory, Video presentations and hands on practical

### Session 1: Safety and Handling

- Personnel and equipment safety
- Physical damage and contamination of electronic assemblies
- General Overview of ESD and its prevention

### Session 2: Hand soldering- Through Hole

- Necessity for hand soldering
- Materials, tools and equipment used for soldering
- Selection and setting of tools and equipment
- Soldering process

### Session 3: Hand soldering-SMT

- Selection and setting of tools and equipment
- Soldering process

### Session 4: Practical

- Tips on soldering iron tip care
- Hand soldering demonstration by Instructor
- Hand Soldering of sample through hole an SMT components by students
- Quiz & Inspection of soldered connections

**Maximum no of candidates:** 7 Per Batch | **Duration:** 1 Full Day (7 - 8 Hours)

# Schedule for Hand soldering workshop

| Session No | Session Name | | Duration | Time | Description |
|---|---|---|---|---|---|
| 1 | Introduction | | 0:15 | 9:00 - 9:15 AM | Registration and Introduction of Participants |
| | Overview | | 0:15 | 9:15 – 9:30 AM | General overview of the Course |
| | Safety and Handling | | 1:00 | 9:30 - 10:30 AM | Video, Review and Q&A |
| **Break 0:15 mins** | | | | | |
| 2 | Hand soldering – Through-hole | | 1:00 | 10:45 - 11:45 AM | Video, Review and Q&A |
| 3 | Hand soldering – SMT | | 1:15 | 11:45 - 1:00 PM | Video, Review and Q&A |
| **Break 0:45 mins** | | | | | |
| 4 | Practical | Demo | 0:15 | 1:45 – 2:00 PM | Tip care Hand soldering demo by instructor |
| | | Student Practice | 1:00 | 2:00 – 3:00 PM | Hand soldering Practice |
| | Review Q | | 0:30 | 3:00 – 3:30 PM | Review Questions |
| | **Break 0:15 mins** | | | | |
| | Practical | Evaluation | 0:30 | 3:45 – 4:15 PM | Visual Inspection by Students |
| | Conclusion | | 0:15 | 4:15 – 4:30 PM | Q&A and Summarizing |

**For more information, please reach out to:** ed@electronics.org