

### Overview

Lead-Free Manufacturing is a new initiative to eliminate lead from the electronics assembly process. Pending legislation, as well as commercial market pressure from Asia and Europe, is forcing electronic manufacturers to consider new processing materials and techniques to meet this challenge.

ACI, as the National Center of Excellence in Electronics Manufacturing, has developed a program that provides a combination of lecture and hands on factory experience, all housed in the same facility. The objective is to introduce participants to the technical challenges of developing and implementing Lead-Free Soldering in a production environment.

### Who Should Attend

Engineering managers, manufacturing engineers, process engineers, quality engineers, and technicians who are responsible for developing and implementing manufacturing and rework production processes.

### Course Content

- ◆ **Legislative Status:**  
Europe  
Asia/Japan  
United States
- ◆ **Materials Issues:**  
Solder Alloys Available  
Board Finishes Available  
Component Finishes Available
- ◆ **Reliability Topics:**  
Components  
Boards  
Solder Joints  
Microsectioning  
Failure Analysis
- ◆ **State of the Market Concerns:**  
Commercial vs  
Military/Aerospace Market
- ◆ **Manufacturing Processes:**  
Screen Printing/Component  
Placement  
Reflow & Wave Soldering  
Hand Soldering/Rework & Repair
- ◆ **Additional Considerations:**  
Environmental Issues  
Configuration Management  
Program Sustainment

### Benefits

- ◆ Participants will gain an understanding on the technical issues surrounding the Lead-Free soldering process.
- ◆ Through hands on experience in ACI's demonstration factory and fully equipped classrooms, participants will learn how to manufacture Lead-Free hardware, using production quality equipment.
- ◆ Participants are encouraged to bring samples of their own hardware, to determine how it will respond when Lead-Free solders are used.



### Duration

16 hours

### Registration

Contact the EMPF Learning Center at:  
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