

# ESD Control for Electronics Manufacturing

This course introduces participants to the causes of ESD and the steps you can take to mitigate its effects when handling, storing, or transporting ESD sensitive components in a manufacturing facility. These preventive measures and their application are based on ANSI/ESD S20.20 and other relevant standards.

## COURSE OBJECTIVE

After completing this course, you will be able to employ the key tools, materials, and processes designed to prevent and control the effects of ESD within a manufacturing facility.

## LEARNING OBJECTIVES PER COURSE MODULE

### MODULE 1: INTRODUCTION TO ESD

- Define Electrostatic discharge
- Explain what causes an electrostatic discharge
- Define triboelectric charging (triboelectric effect)
- Explain the difference between conductive and insulative materials
- Explain catastrophic vs. latent failure
- Describe typical static charge sources
- Explain the benefits of controlling ESD

### MODULE 2: HOW PEOPLE PREVENT AND CONTROL ESD

- Explain the use of grounding for controlling ESD in the workplace
- Identify common types of personnel grounding devices
- Describe the proper use of ESD wrist straps, ESD shoes, shoe grounders, and constant monitoring devices
- Explain the testing procedure for personnel grounding devices
- Describe safe handling and transportation procedures for ESDS items

### MODULE 3: HOW FACILITIES PREVENT AND CONTROL ESD

- Explain how facilities employ ESD Protected Areas (EPAs) to mitigate the effect of ESD
- Identify the tools and best practices for maintaining an ESD safe workstation
- Explain the purpose, function, and strategies for using ESD safe packaging

## FINAL EXAM & CERTIFICATE OF COMPLETION

Once you have completed all 3 modules, you can take the final exam. You will have 25 minutes to complete 20 multiple-choice and true or false questions. The passing score for this exam is 80%. Students may attempt the exam up to three (3) times. Please note that a third and final attempt is permitted after 24 hours of the second attempt. Participants who attain the minimum score of 80% can access and download their Global Electronics Association Certificate of Completion.

## COURSE RESOURCES

Everything you need to successfully complete the ESD Control for Electronics Assembly course is included and available on the Electronics U Learning Management System.

## ELECTRONICS U LEARNING MANAGEMENT SYSTEM

Upon accessing the course for the first time, make sure to take a moment to update your personal profile. Electronics U supports the most recent versions of Google Chrome, Firefox, Safari, Internet Explorer, and Microsoft Edge. Courses can be accessed on desktops, laptops, tablets, and mobile phones. Please refer to Browser Settings under the Start Here! Tab on your dashboard to make sure your browser is set to function seamlessly with the Electronics U Learning Management System. If you need further technical assistance, please send an email to [support@electronicsu.org](mailto:support@electronicsu.org) or call Global Electronics Association Member Support at +1 847-597-2862.