

ESSENTIALS FOR ESD PROGRAMS AND INARTE CERTIFICATION EXAM

ESSENTIALS FOR ESD PROGRAMS

FACTORY: TECHNOLOGIES • CONTROLS • PROCEDURES

Instructors: Ted Dangelmayer, Dr. Terry L. Welscher, Dangelmayer Associates, L.L.C.

This two-day seminar consists of concentrated versions of the ten ESDA tutorials which comprise the ESDA Program Manager (PrM) Certification Program:

- ESD Basics for the Program Manager
- Ionization and Answers for the Program Manager
- Packaging Principles for the Program Manager
- System Level ESD/EMI: Testing to IEC and Other Standards
- Cleanroom Considerations for the Program Manager
- How To's of In-Plant ESD Survey and Evaluation Measurements
- Device Technology and Failure Analysis Overview
- Electrostatic Calculations for the Program Manager and the ESD Engineer
- ESD Standards Overview for the Program Manager
- ESD Program Development & Assessment (ANSI/ESD S20.20 Seminar)

Key concepts and information from the above courses have been selected for this two-day seminar. Many of the demonstrations and videos from ESD Basics Tutorial are included in this seminar. Examples of electrostatics and ESD calculations are included where appropriate throughout the seminar.

*This Seminar offers a broad exposure to the essentials of ESD programs. It offers a two-day comprehensive set of factory technologies and procedures designed for managers, technicians, and specialists desiring ESD control program training and information. This course serves as a refresher class to those taking the PrM Certification exam. In addition, the course can be used as preparation for those interested in taking the iNARTE Engineering or Technician Certification exam, which will be offered on the day following this two-day course.

ESDA SEMINAR

PENANG

NOVEMBER 9-11, 2010

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TAIWAN

NOVEMBER 15-17, 2010

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ESSENTIALS FOR ESD PROGRAMS FACTORY: TECHNOLOGIES • CONTROLS • PROCEDURES

DAY 1

PART I (8:00 AM-Noon)

This section reviews the fundamentals of electrostatics, charge flow, electric field and voltage. The concept of capacitance and the fundamental relationship, $Q = CV$, is introduced and explored with demonstrations and videos. The practical application of these concepts to the measurement of resistance, fields and voltages, and the relevant standards are reviewed and demonstrated.

PART II (1:00 PM-5:00)

The principles from Part I are then applied to grounding principles and standards, measurement of charge, standard models for ESD (i.e., human-body model and charged device model), and static induction with demonstrations and videos. Very simple and basic ESD protection circuit concepts and relevant failure analysis techniques are introduced and reviewed.

DAY 2

PART III (8:00 AM-Noon)

Key ESD technical areas are reviewed such as air ionization, ESD-safe packaging, cleanroom principles and electrostatic attraction. Standards relevant to these areas are described.

PART IV (1:00 PM-5:00)

The final section includes charge generation test methods, additional ESDA standards, system-level ESD standards and testing, practical auditing techniques and strategies, and ESD event detection. The tutorial concludes with a review of ESD Protected-Areas (EPAs), ESD Program Management and the application of ANSI/ESD S20.20.

INSTRUCTORS

Ted Dangelmayer

Ted Dangelmayer is the president of Dangelmayer Associates, L.L.C. and has assembled an ESD consulting team consisting of the foremost authorities in numerous ESD areas of both product design and manufacturing. He received the "Outstanding Contributor" award, The ESD Association Founders Award, was President of the ESD Association, Chairman of the ESDA Standards Committee, and General Chairman of the EOS/ESD Symposium. He has published two editions of his book, ESD PROGRAM MANAGEMENT, numerous magazine articles, and technical papers. Ted holds three patents and is iNARTE Certified. He is currently President of the Northeast Chapter of the ESD Association and a member of the national ESD Association's Standards Committee, and Education Committee.

Dr. Terry L. Welscher

Dr. Terry L. Welscher is currently Senior Vice President of Dangelmayer Associates. He began his career in Bell Labs in 1978 where he worked on electrolytic corrosion failure mechanisms in electrical interconnection materials. In 1986 he began directing Bell Laboratories' core expertise in electrostatic discharge (ESD). The newly formed group proceeded to produce a string of ground-breaking contributions to the field and played a key role in advancing industry standards. At his retirement from Lucent Bell Labs in 2001, he was Director of the Quality, Reliability and Test Center of Excellence. Dr. Welscher has served as Chairman of the ESDA Standards Committee and Technical Program and General Chair of the EOS/ESD Symposium. He is currently a member of the ESDA Boards of Directors serving as Vice President responsible for ESDA Technical Operations. He has also been active in the JEDEC Quality and Reliability Committee and Board of Directors. Most recently he has co-lead the effort to harmonize and merge JEDEC and ESDA device testing standards. He holds a B.S. in Chemistry from Florida State University and Ph.D. in chemical physics from the University of Texas at Austin.

ESSENTIALS FOR ESD PROGRAMS AND iNARTE CERTIFICATION EXAM

PENANG

Nov 11, 2010

TAIWAN

Nov 17, 2010

CERTIFICATION EXAM

8:00 a.m. - 5:00 p.m. iNARTE Certification Exam

iNARTE offers Certification to both ESD Engineers and Technicians. This is an internationally recognized, independent validation of professional excellence, according to the guidelines of ISO 17024. There are no required tutorials or courses to be completed prior to attempting the iNARTE Certification exam. Applicants must complete an application form and include the iNARTE application/exam fee with their registration. Application forms will be available at each course location and may also be downloaded in advance at the iNARTE web site <http://www.narte.org/d/esdapp.pdf>. All information on the requirements for iNARTE Certification may be found at <http://www.narte.org/h/esd.asp>. You may also contact iNARTE by email at Lawrence@inarte.us.

The iNARTE ESD Certification exams are open book. Computers and Calculators are allowed. We do not guarantee to provide power or internet connection, but if available at the examination room, candidates may connect. Applicants should note the following:

Bring these items with you:

- Standards
- Tutorial notes
- Reference books
- Calculator
- Computer

Not allowed:

- Talking on cell phones
- Talking or sharing of reference materials
- Using an email or internet connection to confer with another person

ESDA SEMINAR

ESSENTIALS FOR ESD PROGRAMS AND iNARTE CERTIFICATION EXAM

First Name: _____ Last Name: _____

Company Name: _____

Street: _____

City: _____ State/Province: _____ Country: _____ Zip/Postal Code: _____

Is Address (please circle the one that applies) Home or Company

Phone: _____ Fax: _____ Email: _____

Course Selection

Essentials for ESD Programs Factory:
Technologies • Controls • Procedures

PENANG

Nov 9-10, 2010

EXAM Nov 11, 2010

iNARTE Exam

TAIWAN

Nov 15-16, 2010

EXAM Nov 17, 2010

iNARTE Exam

FEES

On or before Oct. 19, 2010

After Oct. 19, 2010

Essentials for ESD Programs
iNARTE Application and Exam

\$600.00 USD

\$700.00 USD

\$250.00 USD

\$250.00 USD

Registration Information

For credit card payments:

Register online at:

ESD Association

<http://esda.org/onlineregistrations.html>

Phone: 315-339-6937

For all other forms of payment:

Contact:

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