

CLASS TITLE: FAILURE ANALYSIS TECHNICIAN COURSE

Qualification and Competencies to Address:

This course will equip students to become a knowledgeable on the Failure Analysis Techniques applicable for the Semiconductor and Electronics companies in the Philippines. They will be exposed to the various instruments and procedure for doing the Failure Analysis. They will also be taught of the other necessary basic skill sets and processes that are typical to enter the semiconductor companies and electronics companies

Industries to Fill: Semiconductors, Electronics, Failure Analysis Laboratories

DURATION	124 Hours – Within 3 Months
CLASS SCHEDULE	1. M/W/F 2. Lecture - 3 Hours/Day: a. (9:00 AM - 12:00 NN) b. (1:00 PM - 4:00 PM) 3. Hands-on Training - 8 Hours/Day: a. (9:00 AM - 12:00 NN & 1:00 PM - 6:00PM)
LOCATION	Lecture: Webinar via Zoom Hands-On Training: FA Division

COURSE STRUCTURE

UNIT OF COMPETENCY	TOPICS	LEARNING OUTCOMES	NO. OF HOURS - DAY
Basic	Overview of Semiconductor Assembly Process	<ul style="list-style-type: none"> Introduce the participants to the assembly process flow of Semiconductor Devices 	3 hours (1 day)
Basic	Overview of Semiconductor Wafer Fabrication	<ul style="list-style-type: none"> Introduce the participants to the semiconductor wafer fabrication process to which the starting material for components starts. 	3 hours (1 day)
EXAM 1			
Common	Overview of Quality Testing of Semiconductor Components	<ul style="list-style-type: none"> Understand the various quality assurance tools and techniques used for semiconductor processes 	30 hours (10 days)
EXAM 2			
Core	Introduction to Failure Analysis	<ul style="list-style-type: none"> Discuss the failure analysis flow Introduce the various electrical characterization techniques for semiconductor components 	3 hours (1 day)
Core	Non-Destructive Techniques	<ul style="list-style-type: none"> Learn the use, operation, and application of Scanning acoustic microscope Learn the use, operation, and application of Optical Microscope 	16 hours (2 days) (on-site)
Core	Destructive Techniques	<ul style="list-style-type: none"> Learn the metallographic preparation using grinding/polishing methods Learn how to use the Ion Milling equipment for sample preparation Learn the various decapsulation process 	30 hours (10 days)
EXAM 3			

Nanotech Analytical Services and Training (Corp.)

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Failure Analysis Laboratory
 G/F B136 L1 C. Arellano St., Katarungan Village
 (Daang Hari), Poblacion, Muntinlupa City 1776, Philippines

Water and Environmental Testing Laboratory
 G/F Unit 9 B7 L2 GPS Building, Southpoint Rd.,
 Southpoint Subdivision, Brgy., Cabuyao, Laguna, Philippines

Core	Fault/Failure Isolation	<ul style="list-style-type: none"> Learn the principles and process of various failure isolation techniques Operate the OBIRCH equipment 	6 hours lecture 8 hours hands-on (3 days)
PRACTICAL EXAM 4			
Core	Overview of Basic Imaging and Material Analysis	<ul style="list-style-type: none"> Learn the principles of optical and electron microscopy Operate the optical and electron microscope 	16 hours (2 days)
Common	Introduction to Reliability Testing and Reliability Testing Equipment	<ul style="list-style-type: none"> Introduce the concept of Reliability testing of semiconductor components and how it relates to failure analysis Introduction of industry standards 	9 hours (3 days)
FINAL EXAM			

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