

*Metallization*

**Course Description:**

This course is developed for the Semiconductor Processing Industry to provide professional development for a broad audience of employees working for semiconductor manufacturers and suppliers. The intended audiences are those who require a more in-depth overview of the specific process to understand in general terms the potential relationship of this particular process both to upstream and downstream processes. While this course is technical in nature, it does not focus on specific process related information, merely, on general principles of the specific process. This course is intended for technicians and those requiring a more in-depth coverage than the overview course.

**Chapters**

Introduction to Metallization

- Identify the steps to fabricate an integrated circuit.
- Identify the purpose of metallization.
- Identify the two basic types of metallization processes.
- Identify the two most common metals used in metallization and where each is typically used.

Basic Chemistry

- Identify an atom, its components, and structure.
- Identify the elements used in semiconductor industry from the periodic table.
- Identify the concept of chemical bonding.
- Identify the purpose of chemical reactions.
- Identify the use of chemical equations and principles.
- Identify the use of different chemical reaction principles.
- Identify the concept of chemical kinetics.

Deposition Techniques

- Identify the primary techniques for depositing a metal film.
- Identify the advantages and disadvantages of each technique.
- Identify the metals most commonly deposited by each technique.
- Identify the key process parameters that affect each technique.
- Identify the key quality issues of metal deposition.
- Define the fundamental processes involved in plasma.

Equipment Subsystems

- Identify the major subsystems of a deposition tool.
- Identify the major components of a gas distribution system.
- Identify the types of sensors used in deposition tools.

Metallization Processes

- Identify the eight qualities desired in metals used for IC fabrication.
- Identify the metals and alloys most commonly used in IC fabrication.
- Identify the most common process related problems encountered during metallization.
- Identify the importance of chemical mechanical planarization (CMP) in metallization.

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- ◆ MANAGEMENT TRAINING
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