Course Description and Objectives

**CMP**

**Course Description:**
The program 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:

- Support staff, equipment operators, entry-level technicians, and new hire professional staff.
- Process and equipment maintenance technicians and entry-level engineers.

**Chapters**

**Introduction**
- Identify the processing steps required to fabricate an integrated circuit.
- Identify the purpose of CMP.

**Process and Equipment Fundamentals**
- Identify the key process parameters of CMP.
- Identify the key quality issues of CMP.
- Identify common CMP tools and consumables.

**CMP of Dielectrics**
- Identify the mechanism for oxide removal using CMP.
- Identify the factors of oxide CMP which affect removal rate and uniformity.
- Identify the purpose of shallow trench isolation (STI).

**CMP of Conductors**
- Identify the mechanism for metal removal using CMP.
- Identify the common slurry and pad combinations used for various metals.
- Identify the factors of metal CMP which affect removal rate and uniformity.

**Post CMP Cleanup**
- Identify the purpose of post-CMP cleanup.
- Identify the common methods of post-CMP cleaning.
- Identify the common cleaning mixtures used for oxides and tungsten.
- Identify some of the future issues which must be addressed in post-CMP cleaning.

**Metrology**
- Identify the importance of metrology to the CMP process.
- Identify the key quality issues monitored by CMP metrology.
- Identify the primary metrology techniques used in CMP.