



SAMSUNG AUSTIN
SEMICONDUCTOR

PEOPLE | TECHNOLOGY | A BRIGHTER TOMORROW

CMP Equipment Technician 2 Training & Lesson Plan

Build Knowledge > Develop Skills > Support Fab Operations



From Fundamentals
to Fab Readiness

Learn > Practice > Apply > Grow

Your Journey

Step by Step
to Success

1

Orientation
Week 1

2

Semiconductor
Fundamentals
Weeks 2–3

3

Technical Foundations
Weeks 4–6

4

CMP Equipment
Knowledge
Weeks 7–10

5

Hands-On Training
& OJT
Weeks 11–14

6

Qualification
& Continuous Growth
Weeks 15+



1. New Employee Orientation



**Welcome to
Samsung Austin**
Culture, Values, and Expectations



Site Safety & ESH
Safety Rules, Emergency
Response, LOTO Awareness



Security & Access
Badge, Areas, Data Security



HR & Benefits
Policies, Timekeeping, Leave,
Support Resources



Introduction to Fab
Overview of Austin Site
and Products



Tools for Success
IT Systems, Training Platforms,
Communication Channels



2. Semiconductor Fundamentals



**Semiconductor Industry
Overview**
Market, Products, Applications



Semiconductor Devices
Wafer, Die, IC Basics



Manufacturing Process Flow
Front End, Back End, Where
CMP Fits



Cleanroom Fundamentals
Gowning, Contamination
Control, Behavior



Fab Terminology
Common Acronyms and Terms



Yield, Quality & Reliability
Why It Matters



**Introduction to Equipment
Roles**
Lithography, Etch, Deposition,
CMP, Metrology, etc.



3. Technical Foundations



Basic Electronics

- Voltage, Current, Resistance
- Ohm's Law
- DC vs AC
- Series vs Parallel Circuits
- Power Supplies (24VDC, 120/208VAC)
- Multimeter Use & Troubleshooting
- Fuses, Breakers, Relays, Sensors



Basic Mechanics

- Mechanical Systems & Motion
- Bearings, Belts, Gears, Couplings
- Pneumatics (Air Systems)
- Vacuum Systems
- Hydraulics (if applicable)
- Mechanical Drawings
- Torque, Alignment, Preventive Maintenance



Instrumentation & Controls

- Sensors (Pressure, Flow, Level, Temperature)
- Actuators (Pneumatic, Electric)
- PLC Basics
- Interlocks and Safety Circuits
- Introduction to PID Control



4. CMP Equipment Knowledge



CMP Process Overview
Purpose, Outcomes, Where It Fits



CMP Equipment Architecture
Main Modules and Functions



Key CMP Components

- Platen & Carrier
- Conditioner
- Slurry Delivery System
- Pad System
- Wafer Handling/Transfer
- Sensors and End Point Monitor



Utilities & Subsystems

- DI/UPW (Deionized Water)
- Slurry System
- Chemical Delivery
- Vacuum
- Pneumatic
- Exhaust and Ventilation



Maintenance & Troubleshooting

- PM Procedures
- Common Failures and Alarms
- Log Review and Documentation
- Parts Handling and Replacement



Safety & Environmental

- Chemical Safety (Slurry, DIW)
- Hazardous Materials
- Spill Response
- Waste Systems
- LOTO for CMP Equipment



5. Hands-On Training & OJT



Equipment Walkdown
Identify and Locate Components



**Standard Operating
Procedures (SOPs)**
Startup, Shutdown, PM



Troubleshooting Practice
Guided and Independent



Use of Diagnostic Tools
Tool Software, Alarm Logs,
Trending



Hands-On Maintenance
PMs, Part Replacement,
Alignment, Calibration



Cross-team Collaboration
Process, Integration, and
Handoffs



OJT Checklist
Demonstrate Competency
Sign-off by Mentor



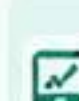
6. Qualification & Continuous Growth



Skills Assessment
Written, Practical, and
Scenario-based



Certification
Internal Qualification for
Technician 2



Independent Troubleshooting
Handle Assigned Tools/Modules



Continuous Learning
Advanced Topics, New Tool Installs,
Process Changes



Career Development
PMs to Senior Technician,
Specialization Opportunities



Stay Current
Read Manuals, Tech Updates,
Industry Trends



Digital I/O (DIO)

- Digital Signals and Logic
- Inputs (Switches, Sensors)
- Outputs (Relays, Solenoids)
- PLC I/O Modules
- Wiring and Troubleshooting
- Use of Schematics
- Interlocks and Safety I/O



Analog I/O (AIO)

- Analog Signals (4–20mA, 0–10V)
- Sensors and Transmitters
- Signal Conditioning
- A/D and D/A Conversion
- PLC Analog Modules
- Troubleshooting Analog Loops
- Calibration and Verification



Pumps & Fluid Systems

- Pump Types (Centrifugal, Diaphragm, Peristaltic)
- Principles of Operation
- Slurry Pumps
- DIW Pumps
- Chemical Pumps
- Flow, Pressure, and NPSH
- Maintenance and Troubleshooting
- Associated Piping and Valves



Recommended Reading & Resources

- Equipment Manuals (OEM)
- Process Guides
- Safety Data Sheets (SDS)
- Internal Training Materials
- SEMI Standards (e.g., E10, E37, E84)
- Basic Electricity and Electronics Texts
- Pneumatics and Hydraulics Fundamentals
- PLC and Industrial Controls Basics
- CMP Technology and Process Integration Articles



Training Methods



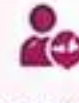
Classroom
Training



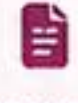
eLearning
Modules



Hands-On
Practice



OJT with
Mentor



Assessments
& Quizzes



Real Equipment
Experience

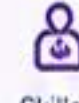


Success Metrics

- Knowledge Checks
- Practical Skills Demonstration
- OJT Sign-off
- Qualification Test
- Readiness for Independent Work



Your Future



Skilled
Technician 2



Greater
Opportunities



Contribute to
World-Class Manufacturing



Be Part of
Innovation



Our Goal

Develop a safe, skilled, and confident CMP Equipment Technician 2
who contributes to Samsung Austin's mission of advancing semiconductor technology.



Better Chips



A Brighter Tomorrow



Together

hub.gravelcloud.com
Rigel G Arcayan, 2026.