EFSP Auxiliary ESL Curriculum

Semiconductor English Participant Workbook

Practice pages for realistic field-specific meetings, pushback, documentation, and role-play preparation

Audience: semiconductor process engineers, yield engineers, product engineers, equipment engineers, fab supervisors, quality teams, test and packaging teams, foundry coordinators, supply planners, applications engineers, and technical program managers

Focus: A semiconductor English curriculum for wafer fabrication, lithography, process integration, deposition and etch, metrology, yield learning, cleanroom discipline, equipment uptime, packaging, reliability qualification, foundry communication, and customer pressure.

Designed for advanced ESL learners who already use professional English and need industry-specific terminology, realistic meetings, role-play pressure, careful pushback, and polished workplace outputs.

Teaching stance: this is language and workplace-communication training, not legal, medical, financial, safety, or regulatory advice. Instructors should connect every scenario to the learner's current company policies, local rules, and approved procedures.

How to Use This Workbook

For each module, define the terms, identify the decision pressure, write a careful response, and practice the conversation aloud. Strong answers are specific, calm, evidence-aware, and tied to owner and next step.

Module 1. Wafer Fabrication Flow and Process Integration

Situation

A program manager asks why one wafer lot cannot skip a hold and move directly to the next module.

Stakeholder pressure: Release the lot to protect the customer schedule.

Constraint: Process flow, route control, layer dependency, and integration risk must be confirmed before movement.

Terms to use

- wafer
- fab
- process flow
- node

Evidence, owner, or policy boundary

Pushback sentence

Draft the lot-disposition recommendation

Module 2. Lithography, Reticles, and Critical Dimensions

Situation

A customer asks whether a critical-dimension trend is only a measurement artifact.

Stakeholder pressure: Tell them the lithography module is under control.

Constraint: Reticle status, photoresist behavior, exposure conditions, metrology repeatability, and control limits need review.

Terms to use

- lithography
- photoresist
- reticle
- critical dimension

Evidence, owner, or policy boundary

Pushback sentence

Draft the lithography risk update

Module 3. Deposition, Etch, CMP, and Process Windows

Situation

A team wants to widen an etch recipe to improve throughput.

Stakeholder pressure: Approve the recipe because cycle time improves.

Constraint: Deposition uniformity, etch selectivity, CMP margin, and the qualified process window must be protected.

Terms to use

- deposition
- etch
- CMP

- process window

Evidence, owner, or policy boundary

Pushback sentence

Draft the process-window tradeoff memo

Module 4. Metrology, SPC, and Yield Learning

Situation

A dashboard shows yield loss after a new metrology sampling plan.

Stakeholder pressure: Call it a bad lot and move on.

Constraint: SPC trends, sampling change, tool history, defect signatures, and product mix must be separated.

Terms to use

- metrology
- SPC
- yield
- excursion

Evidence, owner, or policy boundary

Pushback sentence

Draft the yield-learning brief

Module 5. Defect Density and Cleanroom Contamination

Situation

A particle excursion appears after maintenance in a critical bay.

Stakeholder pressure: Restart production and watch the next few lots.

Constraint: Defect density, cleanroom protocol, contamination source, containment, and affected-lot traceability require action.

Terms to use

- defect density
- particle
- cleanroom
- contamination control

Evidence, owner, or policy boundary

Pushback sentence

Draft the contamination containment note

Module 6. Equipment Uptime, Recipes, and Tool Matching

Situation

A high-demand tool is repeatedly down and a second tool is almost matched.

Stakeholder pressure: Move all lots to the second tool immediately.

Constraint: Tool uptime, preventive maintenance status, recipe qualification, tool matching evidence, and bottleneck risk must be balanced.

Terms to use

- tool uptime
- preventive maintenance
- recipe
- tool matching

Evidence, owner, or policy boundary

Pushback sentence

Draft the tool-qualification escalation

Module 7. Packaging, Test, and Reliability Qualification

Situation

A product team wants to ship early units before reliability stress testing is complete.

Stakeholder pressure: Ship the units because electrical test passed.

Constraint: Package interaction, binning criteria, burn-in results, qualification status, and customer-use conditions are not interchangeable.

Terms to use

- package
- binning
- burn-in
- qualification

Evidence, owner, or policy boundary

Pushback sentence

Draft the qualification readiness update

Module 8. Foundry, Tape-Out, PDK, and Capacity Communication

Situation

A customer asks for a guaranteed tape-out and wafer-start date despite capacity constraints.

Stakeholder pressure: Promise the date to protect the relationship.

Constraint: Foundry allocation, PDK readiness, mask schedule, change freeze, and capacity allocation need documented assumptions.

Terms to use

- foundry
- tape-out
- PDK
- capacity allocation

Evidence, owner, or policy boundary

Pushback sentence

Draft the foundry customer update

Capstone Simulation

Lead a cross-functional meeting in semiconductor. Choose four modules from this workbook, connect the risks, and prepare a five-minute update with decision, evidence, constraint, owner, and next step.