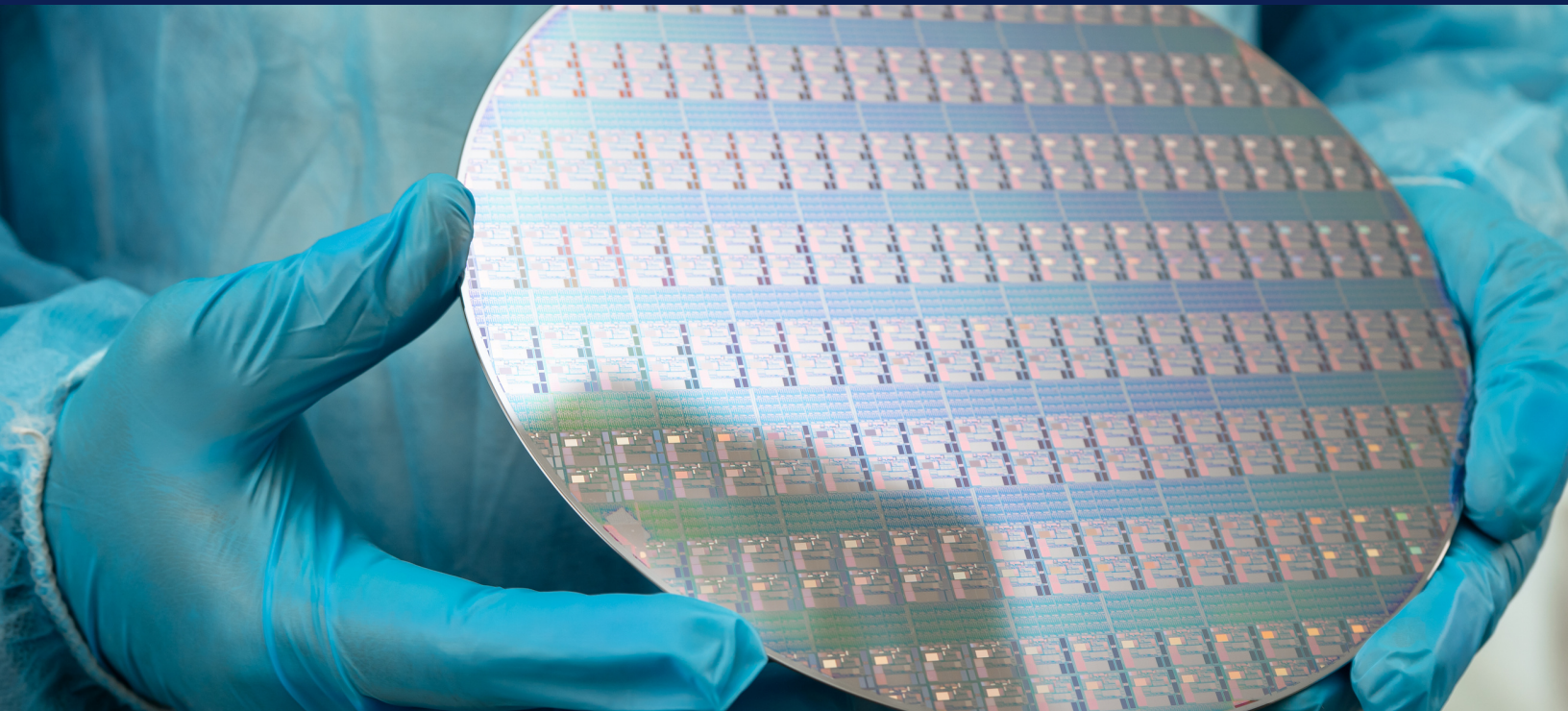




Semiconductor Fab Equipment Maintenance Technician Skill Training Pathway

From Classroom to Cleanroom

Theory & Practice. Curriculum & Fab Equipment.
Provided by Intelitek.



The Complete Learning Experience

Intelitek provides the curriculum and Fab Equipment for hands-on training, from foundations to advanced Fab operations.

From Classroom to Cleanroom

Fab Technical Fundamentals

Semiconductor Technical Launchpad

01

Foundations of Semiconductor Manufacturing

Electronics, Physics & Materials • Industry Structure and Global Ecosystem • Manufacturing Challenges & Geopolitics

Interactive Activities Provided

Microscope observations, material samples, physical demonstrations, and guided exploration of semiconductor manufacturing fundamentals.

02

Semiconductor Cleanroom Operator

Fundamentals • Processes & Practices • Structure and Fab Equipment • Maintenance and Safety

Cleanroom Practice Activities

Gowning exercises, equipment familiarization, process walkthroughs, and cleanroom behavior and safety training.

03

Safety for Semiconductor Manufacturing

Cleanroom Safety • Electrical, Mechanical, Chemical Safety • ERT (Emergency Response Teams) • COHE & LOTO

Safety Practice Activities

CoHE and LOTO exercises, chemical handling awareness, electrical safety practices, hazard identification, and emergency response fundamentals.

04

Advanced Production and Process Flow

Fab Process Overview & Wafer Lifecycle • All Fab areas from Photolithography to Metrology • Process Integration & Yield • Instrumentation and Measurement

Hands-On Lab / Fab Equipment Provided by Intelitek

Technicians analyze Fab processes using Fab Equipment and virtual simulations.

05

Industrial Vacuum Systems

Pressure Measurement Units • Vacuum System Components • Gas Flow Regimes • Basic Preventive Maintenance (PM) and Troubleshooting of Vacuum Systems

Hands-On Lab / Fab Equipment Provided by Intelitek

Fab Equipment introduces components and instrumentation. Technicians assemble and disassemble a vacuum circuit with a rough pump and a turbo pump.



Advanced Fab Operations

Semiconductor Advanced

06

Wafer Handling & Semiconductor Robotics

Robotics Introduction • Yaskawa EFEM • Pre-Aligner • Activate Real Pneumatic System

Hands-On Lab / Fab Equipment Provided by Intelitek

Real wafer handling using an EFEM system. Technicians learn safety procedures on Fab Equipment and operate manual and automated robotic and pneumatic systems, with emphasis on industrial safety protocols.

07

Advanced Vacuum & Pneumatic Systems

Vacuum Measurement & Contamination Control • Vacuum Systems with Pneumatic Control • Production Chambers Practicum

Hands-On Lab / Fab Equipment Provided by Intelitek

On a live system, technicians practice vacuum chamber pump-down, gauge reading and calibration, and a leak simulation exercise.

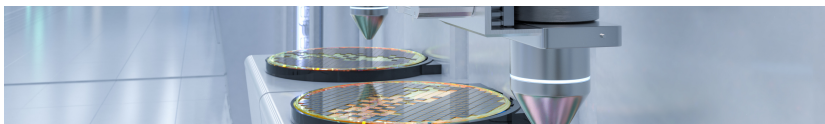
08

Fabrication Chambers Operation & Maintenance Practicum

Process Chamber Overview • Preparing for Maintenance • Chamber-Specific Safety & LOTO • Preventive Maintenance Execution

Hands-On Lab / Fab Equipment Provided by Intelitek

Technicians investigate, operate and troubleshoot an authentic chemical vapor deposition (CVD) process chamber, and execute operating and maintenance procedures used in an actual Fab.



Optional Supporting Skills

Industry 4.0 Training for Semiconductor Production

Foundations of Manufacturing

Math for Technicians I & II; Hand Tools; Power Tools; Mechanical Fasteners; Employability; Introduction to Lean Manufacturing.

Electrical Systems

Basic Power Electricity: Electrical Circuits; Resistors & Conductors; LCR Circuits; Motors & Generators. Electrical Control Systems: Overload/Overcurrent Protection & Monitoring; Transformers; Electric Motors; Electro-magnetic Motor Starters; Relays, Timers and Time Delay Relays; Pilot Devices; Solid-State Reduced Voltage Starters; Variable Frequency Drives (VFDs); DC Motor Control. Industrial Power Electronics: Oscilloscope; Digital Multimeter; Hand Held Digital Oscilloscope; DC Power Supplies; Single-Phase & Three-Phase Supplies; Thyristor Electric Motor Drives; Electronic Timers; Stepper Motor Drives; Servo Motor Drives.

Mechanical Systems

Level 1: Basic Mechanics; Machine Statics and Dynamics; Machine Shafts and Keys; Bearings. Level 2: Belt Drives; Chain Drives; Machine Shaft Couplings. Level 3: Gear Drives; Machine Speed Reducers; Electric Brakes. Advanced Mechanical System: Laser Alignment; Vibration Analysis; Bearing Maintenance.

Pneumatics

Fundamentals of Pneumatics; Advanced Pneumatics; Electro Pneumatics.

I4.0 Communication

Introduction to Industry 4.0; Advanced Manufacturing for Industry 4.0; Intro to IIOT and Connectivity for Industry 4.0; Smart Devices for Industry 4.0; Intro to Networking & Cyber-Security for Industry 4.0; Advanced IIOT and Connectivity for Industry 4.0; Advanced Networking & Cyber-Security for Industry 4.0; CBM for Industry 4.0.

Automation

Fundamentals of Ladder Logic; Advanced Ladder Logic; PLC-Controlled Pneumatic Systems.

Robotics

Fundamentals of Robotics; Advanced Robotics; Yaskawa Robot Operator Certification; Yaskawa Robot Programmer Certification.

Quality Assurance

Mechanical Measurement and Quality Control; Machine Vision & Quality Control 1 & 2; Vision Certification with Cognex.



We Provide the Theory. We Provide Fab Equipment.

**Flexible training solutions.
Built around your workforce.**

Intelitek provides the complete learning experience: semiconductor curriculum plus the Fab Equipment needed for hands-on training. Theory and practice, designed to work together.



Technology Partners

YASKAWA



SIEMENS

COGNEX



Curriculum & Fab Equipment
Industry-Aligned Credentials



Explore Intelitek

Let's Build the Classroom-to-Cleanroom Journey.

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