

Data Center Safety Technician Program Syllabus

Program Overview and Workforce Pathway

The Data Center Safety Technician Program is an advanced workforce development training pathway designed to prepare students for safety-focused careers within the critical infrastructure industry. This comprehensive program combines OSHA compliance, electrical safety, emergency response, and operational risk management into a structured curriculum tailored specifically for 24/7 hyperscale and mission-critical environments.

Instructor: Hines Staffing Solutions

Program Date: Continuing

Location: Online

Program Curriculum

Class 1: Foundations of Data Center Safety & OSHA Compliance

This module introduces the role of a safety technician in a data center environment, focusing on 24/7 uptime requirements and critical infrastructure. Students will cover OSHA rights, site safety plans, and emergency evacuation procedures unique to server rooms and raised floors.

- **Key Courses:** OSHA 10/30 General Industry, Introduction to OSHA, Recordkeeping & Reporting to OSHA, Site Safety Plans, Emergency Evacuation, and Effective Safety Committees.
- **Learning Objectives:** Understand the mission of OSHA, worker rights, and the core principles of reporting injuries and illnesses to meet federal requirements.

Class 2: Electrical & Arc Flash Safety (NFPA 70E)

Focused on high-capacity electrical systems including Uninterruptible Power Supplies (UPS), Power Distribution Units (PDU), generators, and busways.

- **Key Courses:** NFPA 70E Suite, Lockout/Tagout (LOTO), Electrical Safety (General Industry), and Electrocutation Hazards.
- **Content Focus:** Covers LOTO procedures, arc flash Personal Protective Equipment (PPE), energized work permits, and battery room safety involving hydrogen gassing and thermal runaway risks.

Class 3: Fire Suppression, Prevention & Emergency Response

Instruction on specialized data center fire systems, such as pre-action sprinklers and gaseous agents like FM-200 or Novec 1230.

- **Key Courses:** Fire Prevention, Fire Extinguisher, First Aid Suite, AED/CPR Essentials, and Emergency Evacuation.
- **Application:** Learning to respond to VESDA alarms and coordinate with local fire departments without compromising facility uptime.

Class 4: Confined Space & Physical Hazards

Addresses safety for unique physical environments such as underfloor cooling plenums, ceiling cable trays, and generator enclosures.

- **Key Courses:** Permit Required Confined Spaces, Ladder Safety, Fall Protection, Walking Working Surfaces, and Slips, Trips and Falls.
- **Scope:** Includes roles for entrants, attendants, and supervisors in permit-required spaces and fall protection when working above active IT equipment.

Class 5: Hazardous Materials & Spill Response (HAZWOPER)

Management of diesel fuel, battery acids, dielectric fluids for immersion cooling, and refrigerants.

- **Key Courses:** OSHA 8 Hour HAZWOPER Refresher, Hazard Communication (HazCom), DOT/EPA Hazardous Materials Suite, and Compressed Gas.
- **Skills:** Teaches spill containment, decontamination procedures, and chemical labeling under the Globally Harmonized System (GHS).

Class 6: Material Handling & Powered Industrial Vehicles (PIV)

Safe operation of equipment used to install heavy server racks, UPS batteries, and cooling units.

- **Key Courses:** Forklift Safe Operation and Hazards, Aerial Scissor Lifts, Pallet Jack Safety, Material Handling, Back Injury Prevention, and Ergonomics.
- **Focus:** Includes the stability triangle, load capacities, and ergonomic manual handling techniques.

Class 7: Personal Protective Equipment (PPE) & Health Hazards

Selecting and maintaining PPE for specific data center hazards, including electrical arc flash and noise in generator rooms.

- **Key Courses:** Personal Protective Equipment, Eye and Face Protection, Respiratory Protection, Heat & Cold Stress, and Health Hazards in Construction.
- **Environmental Safety:** Addresses heat/cold stress in hot and cold aisles and respiratory protection from particulates during renovations.

Class 8: Construction & Contractor Safety

Ensures safety technicians can oversee site build-outs and expansions without affecting live operations.

- **Key Courses:** OSHA 10/30 Construction, OSHA Focus Four (falls, struck-by, electrocution, caught-in), Welding/Cutting/Brazing, Scaffolding, and Crane Safety.
- **Oversight:** Focuses on contractor management during demolition, rigging, and hot work activities.

Class 9: Incident Investigation & Continuous Improvement

Development of a proactive safety culture through root cause analysis and hazard assessment.

- **Key Courses:** Accident/Incident Investigation, Job Hazard Analysis (JHA), Housekeeping Safety, Lone Working, Drug and Alcohol Awareness, and Workplace Violence (including active shooter).
- **Methodology:** Teaches the "5 Whys" for determining root causes and effective near-miss reporting.

Recommended Certification Path

Sequence	Certification / Suite	Description
1	OSHA 30 – General Industry	Primary foundational requirement for general safety.
2	NFPA 70E Suite	Mandatory for personnel exposed to electrical hazards.
3	HAZWOPER Refresher	Required for primary spill responders (8, 24, or 40-hour).
4	First Aid/CPR/AED	Essential emergency medical response competencies.
5	OSHA 10 Construction	Optional/Recommended for facilities with active expansions.

Program Competencies

Upon completion, graduates will be proficient in:

- Job Hazard Analysis (JHA) and Root Cause Analysis.
- Lockout/Tagout (LOTO) and PPE selection.
- Emergency preparedness and contractor coordination.
- OSHA recordkeeping and workplace risk mitigation.