CTE Frameworks - Stationary Engineering Equipment List



## Suggested Equipment List

### Safety Equipment

* Safety Googles/Glasses
* Gloves
* Hard hats
* Ear Protection
* Lab Coats or Aprons
* Fire Extinguishers: Specifically rated for electrical fires (Class C)
* Fire Blankets
* First Aid Kits
* Safety Signage and Emergency Procedure Posters
* Safety Data Sheets (SDS)
* Emergency Shutdown Systems
* Fire Suppression Systems: A demonstration unit to teach fire safety in industrial environments

### Classroom Technology

* Desktop or Laptop Computers: Equipped with sufficient processing power
* Energy Management Systems Software
* Interactive Whiteboard or Smartboard
* Projector
* Document Camera
* Printer

### Fuel and Combustion Systems

* Fuel Burners (Gas and Oil)
* Combustion Analyzers

### Tools for Measuring and Testing

* Calipers
* Micrometers
* Pressure and Temperature Calibrators
* Leak Detection Equipment
* Flow Meters
* Infrared Cameras (Optional)

### Boiler and Steam System Small-Scale Equipment

* Small-Scale Boiler
* Steam Traps and Valves
* Feedwater Pumps
* Model Water Treatment Equipment and Water Testing Kits
* Boiler Simulators: Software or hardware-based
* Safety Valves
* Manometers
* Boiler Feedwater Treatment
* Blowdown Valves

### Electrical Systems and Controls

* Electric Wiring Kits
* Model Electrical Panels and Circuit Breakers
* Programmable Logic Controllers (PLCs)
* Motor Control Centers (MCC)
* Power Supply Units

### HVAC (Heating, Ventilation, and Air Conditioning) Systems

* HVAC Training Units
* Ductwork
* Chillers and Cooling Towers: Scaled-down
* Furnace and Heat Exchanger
* Thermostats and Controls
* Fans and Blowers
* Refrigeration Trainer Kit: A small-scale refrigeration system
* Compressor Models
* Heat Exchangers
* HVAC System Simulators: Software or hardware-based
* Air Quality Monitors

### Pumps, Valves, and Piping Systems

* Centrifugal and Positive Displacement Pumps
* Gear Pumps
* Motor Control Panels
* Various Valves (Globe, Gate, Ball, Butterfly)
* Piping Systems with Fittings and Flanges
* Electric Motors
* Vibration Monitoring Equipment
* Lubrication Systems

### Instrumentation and Control Systems

* Pressure Gauges and Transducers
* Temperature Sensors and Gauges (Thermocouples, RTDs)

### Hand Tools

* Wrenches, adjustable, pipe, etc.
* Pliers
* Screwdrivers
* Hammers
* Line and Diagonal Cutters
* Sawing tools, hacksaws, band saws
* Insulated Needle-Nose Pliers
* Soldering tools
* Soldering tip cleaner
* Crimping tools
* Hydraulic crimping tools
* Specialized gauges, Bourdon Tube Pressure Gauges, Vacuum Gauges
* Flare Tool Kit
* Adjustable Pipe Wrenches
* Chain Wrenches
* Torque Adapters
* Torque Wrenches
* Soap Solution Bottles
* Tube Brushes and Pipe Cleaners
* Blow Guns
* Hydraulic Jacks and Pullers
* Hydraulic Hose Crimpers
* Temperature Probes
* Clamp Meters
* Air Compressors
* Hydraulic Trainer Kit
* Pneumatic Trainer Kit
* Chain Hoists and Lifting Slings

### Welding and Fabrication Tools

* Arc Welding Equipment
* MIG Welders
* TIG Welders
* Welding Masks and Gloves
* Grinder, Angle Grinder, Bench Grinders
* Pipe Cutters
* Cutting Torches
* Metal Shears
* Soldering Stations

### Other Equipment

* Drill Press
* Pipe Benders
* Pipe Threaders
* Vices