

**Table: Service Program Outline**

PROGRAM YEAR	SEMESTER	CURRICULUM
<b>1st Year</b>	1st Semester	<ol style="list-style-type: none"> <li>1. OSHA Certification</li> <li>2. Use and Care of Tools</li> <li>3. Basic Refrigeration and Basic Science</li> <li>4. Basic Related Trade Math</li> </ol>
	2nd Semester	<ol style="list-style-type: none"> <li>1. First Aid &amp; CPR, EPA Section 608</li> <li>2. Basic Rigging and Basic Electrical Fundamentals</li> <li>3. Soldering and Brazing</li> <li>4. HVAC Preventative Maintenance procedures</li> </ol>
<b>2nd Year</b>	1st Semester	<ol style="list-style-type: none"> <li>1. R-410A Safety &amp; Training, Pressure Enthalpy, Metering Devices</li> <li>2. Water cooled and Evaporative condensers, Cooling Towers.</li> <li>3. Fundamentals of Electricity, Ohms Law, Electrical Diagrams</li> <li>4. Electrical Conductors, hands on wiring projects, Multimeters.</li> </ol>
	2nd Semester	<ol style="list-style-type: none"> <li>1. TXV Trouble shooting, System Diagnostics, Capacity Control.</li> <li>2. Semi-hermetic Compressors, Tare-Down &amp; Repair, Heat Pumps.</li> <li>3. Customer Service, A/C Motors, Circuit Protection, Impedance.</li> <li>4. Motor Controls, Capacitors, Transformers, Circuit Brakers.</li> </ol>
<b>3rd Year</b>	1st Semester	<ol style="list-style-type: none"> <li>1. Basic HVAC Controls, Symbols, Diagrams, Components</li> <li>2. High &amp; Low Voltage Wiring, 3-phase Motors, Pump Down Circuits.</li> <li>3. Controlling Head Pressure, System Accessories, Valves</li> <li>4. Hot Gas Bypass, Bearings, Compressors &amp; Heat Exchangers</li> </ol>
	2nd Semester	<ol style="list-style-type: none"> <li>1. Pressure controls, Lead/ Lag Systems, Smoke Detectors.</li> <li>2. Basic Pneumatic Controls, Dampers, Controllers, Thermostats.</li> <li>3. VRF Systems, Medium &amp; Low Temp, Refrigeration, Ice Machines</li> <li>4. Piping Design, Refrigeration accessories, Food &amp; Product Storage.</li> </ol>
<b>4th Year</b>	1st Semester	<ol style="list-style-type: none"> <li>1. Electronic Components, Wiring, Speed Control &amp; Safeties, Alarms</li> <li>2. VFD Terminology, Building Automation, Programming Parameters</li> <li>3. Pumps &amp; Chiller Maintenance, Pump Alignment, Centrifugal Theory</li> <li>4. Centrifugal &amp; Screw Compressors, Chilled Water Flow</li> </ol>
	2nd Semester	<ol style="list-style-type: none"> <li>1. Start, Test &amp; Balance; Instruments; Psychometrics, Hydronic Systems</li> <li>2. Indoor Air Quality, Air Distribution, Fluid Flow, Automatic Controls</li> <li>3. Digital Controls, Sequence of Operation, Thermistors, Transducers</li> <li>4. Chiller Control Panel Navigation, Automation Software</li> </ol>
<b>5th Year</b>	1st Semester	<ol style="list-style-type: none"> <li>1. Industrial Motor Controls, 3-phase Transformers, Magnetism</li> <li>2. DC Power Supplies, Rectifiers, Diodes, Triacs, Digital Inputs/outputs</li> <li>3. Industrial chiller service and maintenance, Centrifugal Tare Down</li> <li>4. Laser Alignment Technology, Rotary Screw Compressor Tare Down</li> </ol>
	2nd Semester	<ol style="list-style-type: none"> <li>1. Types of Industrial Starters (wye-delta, part-winding, solid state)</li> <li>2. Variable Speed Motors, 2-speed Motors, Wiring Projects</li> <li>3. Magnetic Compressor Technology, Industrial Chiller Controls</li> <li>4. Digital Scroll Compressors, Chiller Control Panel Navigation</li> </ol>