

## GTA Natural Gas Training Curriculum Map

This map is intended to provide guidance on how GTA courses can be implemented. It is only a suggestion to get you started, so you may implement them in any order or combination that suits your needs. They are grouped in 3 levels: Basic, Intermediate, and Advanced. The first column in each level provides a grouping order to suggest an order that courses might be taken. The second column identifies the WBT (web-based training) Certificate Program name for WBTs or a Topic name for ILTs (instructor-led training) or SBs (skill-builders, or on-the-job training). The final column is a list of the content in the order they are suggested to be taken.

### Basic

Courses **Highlighted Green** are **New**  
 Courses **Highlighted Red** have been **Retired**

Order 0= Any Order a, b, c= Order within group	WBT Certificate Program or ILT/SB Topic	Content ILT = Instructor Led Training SB = Skill Builders (On-the-Job Training) All others are WBTs
1a	Basic Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> <li>• Gas Industry Overview</li> <li>• Gas Properties 1</li> <li>• Gas Properties 2</li> <li>• Drawing Sets and Print Reading</li> <li>• Meter Station Drawings</li> <li>• Introduction to Instrumentation</li> <li>• Introduction to SCADA</li> <li>• Safety in Gas Measurement</li> <li>• Introduction to Gas Measurement</li> <li>• Introduction to Gas Measurement Standards</li> <li>• Gas Flow Measurement Fundamentals</li> <li>• Introduction to Lost-and-unaccounted-for Gas (LAUF)</li> </ul>
1b	Gas Flow Measurement Fundamentals	<ul style="list-style-type: none"> <li>• SB: Test Equipment Usage</li> <li>• ILT: Gas Measurement Systems</li> <li>• ILT: Gas Flow Measurement Fundamentals</li> <li>• ILT: Basic Measurement</li> <li>• ILT: Verification and Calibration of Gas Measurement Devices</li> <li>• SB: Secondary Element Verification and Calibration</li> </ul>
2a	Basic Gas Meters WBT Certificate	<ul style="list-style-type: none"> <li>• Introduction to Gas Flow Meters</li> <li>• Orifice and Cone Meters for Gas</li> <li>• AGA 3 Part 1</li> <li>• AGA 3 Part 2</li> </ul>

		<ul style="list-style-type: none"> <li>• AGA 3 Part 3</li> </ul>
2b	Orifice Meters	<ul style="list-style-type: none"> <li>• ILT: Orifice Meters for Gas</li> <li>• SB: Orifice Meter Operation</li> </ul>
2b	Cone Meters	<ul style="list-style-type: none"> <li>• ILT: Cone Type Meters for Gas</li> </ul>
2b	Gas Sampling	<ul style="list-style-type: none"> <li>• ILT: Natural Gas Sampling</li> <li>• SB: Natural Gas Sampling</li> </ul>
3a	Basic Gas Meters WBT Certificate	<ul style="list-style-type: none"> <li>• Coriolis Meters Operation and Purpose for Gas</li> <li>• Coriolis Meters Theory and Design for Gas</li> <li>• <b>Introduction to Ultrasonic Meters</b> retired in 2024</li> <li>• Ultrasonic Meter Definitions &amp; Components for Gas</li> <li>• Ultrasonic Meter Theory of Operation for Gas</li> <li>• Ultrasonic Meter Design for Gas</li> <li>• <b>Ultrasonic Meter Calibration for Gas</b></li> <li>• <b>Ultrasonic Meter Installation for Gas</b></li> <li>• <b>Ultrasonic Meter Inspection, Maintenance and Diagnostics for Gas</b> replaced <b>Ultrasonic Meters Maintenance and Troubleshooting</b> in 2024</li> </ul>
3b	Ultrasonic Meters	<ul style="list-style-type: none"> <li>• ILT: Ultrasonic Meters for Gas</li> <li>• SB: Ultrasonic Meter Operation for Gas</li> </ul>
3b	Coriolis Meters	<ul style="list-style-type: none"> <li>• ILT: Coriolis Meters for Gas</li> <li>• SB: Coriolis Meter Maintenance</li> </ul>
0	Basic Operations and Safety	<ul style="list-style-type: none"> <li>• ILT: Drawing Sets and Print Reading</li> <li>• ILT: Fire and Gas Detection Systems</li> </ul>
0	Basic Electronics WBT Certificate	<ul style="list-style-type: none"> <li>• Basic Electronics: Power Supplies, Rectifier Circuits, and Power Supply Filters</li> <li>• Basic Electronics: Power Supplies, Voltage Regulators and Integrated Circuits</li> <li>• Basic Electronics: Switching Power Supplies</li> <li>• Basic Electronics: Bipolar Transistor Fundamentals</li> <li>• Basic Electronics: Diodes</li> <li>• Basic Electronics: Operational Amplifiers</li> <li>• Basic Electronics: Special Semiconductor Devices</li> </ul>
0	Electric Power Fundamentals WBT Certificate	<ul style="list-style-type: none"> <li>• Electric Power Fundamentals: Electrical Safety</li> <li>• Electric Power Fundamentals: Basic Electrical Theory</li> <li>• Electric Power Fundamentals: Test Equipment</li> <li>• Electric Power Fundamentals: AC Generation</li> <li>• Electric Power Fundamentals: Grounding Practices</li> </ul>

		<ul style="list-style-type: none"> <li>• Electric Power Fundamentals: AC and DC Motors</li> <li>• Electric Power Fundamentals: Controlling Motor Starting</li> <li>• Electric Power Fundamentals: Motor Control Fundamentals</li> <li>• Electric Power Fundamentals: RLC Circuits and Transformers</li> </ul>
0	Electrical Systems	<ul style="list-style-type: none"> <li>• ILT: Electrical Power Fundamentals</li> <li>• SB: Electrical Systems</li> </ul>
0	Applied Physics WBT Certificate	<ul style="list-style-type: none"> <li>• Applied Physics: An Introduction</li> <li>• Applied Physics: Dynamics</li> <li>• Applied Physics: Nature of Matter</li> <li>• Applied Physics: Energy, work and Power</li> <li>• Applied Physics: Heat and Heat Transfer</li> <li>• Applied Physics: Mechanics</li> </ul>
0	Math WBT Certificate	<ul style="list-style-type: none"> <li>• Industrial Math: Whole Numbers and Fractions</li> <li>• Industrial Math: Decimals, Percentages, and Square Roots</li> <li>• Industrial Math: Algebraic Operations, and Equations</li> <li>• Industrial Math: Exponents, Radicals, and Scientific Notation</li> <li>• Industrial Math: Geometry 1</li> <li>• Industrial Math: Geometry 2 and Trigonometry</li> <li>• Industrial Math: Statistics and Uncertainty Principles</li> </ul>

## Intermediate

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4a	Introduction to Electrical and Instrumentation WBT Certificate	<ul style="list-style-type: none"> <li>• Introduction to Electrical Concepts for Measurement</li> <li>• Signal Types</li> <li>• Instrumentation - Field Devices, Flow Computers and PLCs</li> <li>• Wiring, Loops, Diagrams and Local Power Distribution</li> <li>• Multimeters, Process Calibrators &amp; HART Communicators</li> </ul>
4a	Intermediate Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> <li>• Gas Measurement Standards API 21.1 All Meter Types</li> <li>• Gas Turbine Meter Standards</li> <li>• Gas Turbine Flow Meters</li> <li>• Gas Positive Displacement Meters</li> <li>• Basics of Gas Chromatography Part 1</li> <li>• Basics of Gas Chromatography Part 2</li> </ul>
4b	Turbine Meters	<ul style="list-style-type: none"> <li>• ILT: Gas Turbine Meters</li> <li>• SB: Gas Turbine Meter Operation</li> </ul>
4b	Positive Displacement Meters	<ul style="list-style-type: none"> <li>• ILT: Gas Positive Displacement Meters (PD)</li> <li>• SB: Gas Positive Displacement Meter Maintenance and Inspection</li> </ul>
4c	Chromatographs	<ul style="list-style-type: none"> <li>• ILT: Intro to Gas Chromatography</li> <li>• SB: Gas Chromatography</li> </ul>
5a	Intermediate Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> <li>• Gas Quality Instrumentation</li> <li>• Gas Odorization Facilities</li> </ul>
5b	Gas Quality Measurement	<ul style="list-style-type: none"> <li>• ILT: Gas Quality Measurement</li> <li>• SB: Gas Quality Analyzers</li> <li>• SB: Remote Terminal Unit (RTU) Configuration</li> </ul>
6a	Intermediate Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> <li>• Basics of Electronic Flow Measurement (EFM) for Gas 1</li> <li>• Basics of Electronic Flow Measurement (EFM) for Gas 2</li> </ul>

6b	Electronic Flow Measurement (EFM)	<ul style="list-style-type: none"><li>• ILT: Basics of Electronic Flow Measurement for Gas</li><li>• ILT: Gas Flow Computers</li></ul>
0	Prevention of Hydrate Formation	<ul style="list-style-type: none"><li>• SB: Supplemental Heating of Gas Pipeline Systems</li></ul>

## Advanced

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Order 0= Any Order a, b, c= Order within group	WBT Certificate Program or ILT/SB Topic	Content ILT = Instructor Led Training SB = Skill Builders (On-the-Job Training) All others are WBTs
7a	Advanced Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> <li>• Communication and Protocols 1</li> <li>• Communication and Protocols 2</li> <li>• Instrumentation Systems</li> </ul>
7b	SCADA Instrumentation and Control	<ul style="list-style-type: none"> <li>• ILT: Supervisory Control and Data Acquisition (SCADA)</li> <li>• ILT: Basic Programmable Logic Controllers (PLCs)</li> <li>• ILT: Control Systems Process and Instrumentation Diagrams (PID) Control</li> <li>• ILT: Instrumentation Systems</li> <li>• ILT: Basic Instruments and Control Loops</li> </ul>
8a	Advanced Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> <li>• Basics of Control Valves</li> </ul>
8b	Regulators and Valves	<ul style="list-style-type: none"> <li>• ILT: Basics of Control Valves</li> <li>• ILT: Basics of Pressure Regulators</li> <li>• SB: Bypassing Regulators</li> <li>• SB: Regulator and Relief Valve Inspection</li> </ul>
9	Overpressure Protection (OPP)	<ul style="list-style-type: none"> <li>• ILT: Basics of Overpressure Protection</li> <li>• ILT: Department of Transportation (DOT) Considerations</li> </ul>
10a	Advanced Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> <li>• Fluid Mechanics Fundamentals</li> </ul>
10b	Fluid Mechanics	<ul style="list-style-type: none"> <li>• ILT: Fluid Mechanics Fundamentals</li> </ul>
10b	Measurement Equipment Installation	<ul style="list-style-type: none"> <li>• ILT: Installation Practices of Gas Measurement Equipment</li> <li>• SB: Gas Orifice Meter Tube Fabricator Inspection</li> <li>• SB: Gas Meter Tube Inspection</li> <li>• SB: Tube Bending and Manifold Installation</li> <li>• SB: Tube Bending Guide</li> </ul>
11	Advanced Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> <li>• Basic Troubleshooting 1</li> <li>• Basic Troubleshooting 2</li> </ul>