

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 suites 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"> • Gas Industry Overview • Gas Properties I • Gas Properties II • Drawing Sets and Print Reading • Meter Station Drawings • Introduction to Instrumentation • Introduction to Electrical Concepts for Measurement • Introduction to SCADA • Safety in Gas Measurement • Introduction to Gas Measurement • Introduction to Gas Measurement Standards • Gas Flow Measurement Fundamentals • Introduction to LAUF
1b	Gas Flow Measurement Fundamentals	<ul style="list-style-type: none"> • SB: Test Equipment Usage • ILT: Gas Measurement Systems • ILT: Gas Flow Measurement Fundamentals • ILT: Basic Measurement • ILT: Verification and Calibration of Gas Measurement Devices • SB: Secondary Element Verification and Calibration
2a	Basic Gas Meters WBT Certificate	<ul style="list-style-type: none"> • Introduction to Gas Flow Meters • Orifice and Cone Meters for Gas • AGA 3 Part 1

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

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

Intermediate

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
4a	Intermediate Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> • Gas Measurement Standards API 21.1 All Meter Types • Gas Turbine Meter Standards • Gas Turbine Flow Meters • Gas Positive Displacement Meters • Basics of Gas Chromatography Part 1 • Basics of Gas Chromatography Part 2
4b	Turbine Meters	<ul style="list-style-type: none"> • ILT: Gas Turbine Meters • SB: Gas Turbine Meter Operation
4b	Positive Displacement Meters	<ul style="list-style-type: none"> • ILT: Gas Positive Displacement Meters (PD) • SB: Gas PD Meter Maintenance and Inspection
4c	Chromatographs	<ul style="list-style-type: none"> • ILT: Intro to Gas Chromatography • SB: Gas Chromatography
5a	Intermediate Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> • Gas Quality Instrumentation • Gas Odorization Facilities
5b	Gas Quality Measurement	<ul style="list-style-type: none"> • ILT: Gas Quality Measurement • SB: Gas Quality Analyzers • SB: Remote Terminal Unit (RTU) Configuration
6a	Intermediate Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> • Basics of Electronic Flow Measurement for Gas • Electronic Flow Measurement Models for Gas
6b	Electronic Flow Measurement (EFM)	<ul style="list-style-type: none"> • ILT: Basics of Electronic Flow Measurement for Gas • ILT: Gas Flow Computers
0	Prevention of Hydrate Formation	<ul style="list-style-type: none"> • SB: Supplemental Heating of Gas Pipeline Systems

Advanced

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
7a	Advanced Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> • Communication and Protocols I • Communication and Protocols II • Instrumentation Systems
7b	SCADA Instrumentation and Control	<ul style="list-style-type: none"> • ILT: SCADA • ILT: Basic Programmable Logic Controllers • ILT: Control Systems PID Control • ILT: Instrumentation System • ILT: Basic Instruments and Control Loops
8a	Advanced Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> • Basics of Control Valves
8b	Regulators and Valves	<ul style="list-style-type: none"> • ILT: Basics of Control Valves • ILT: Basics of Pressure Regulators • SB: Bypassing Regulators • SB: Regulator and Relief Valve Inspection
9	Overpressure Protection (OPP)	<ul style="list-style-type: none"> • ILT: Basics of Overpressure Protection • ILT: DOT Considerations
10a	Advanced Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> • Fluid Mechanics Fundamentals
10b	Fluid Mechanics	<ul style="list-style-type: none"> • ILT: Fluid Mechanics Fundamentals
10b	Measurement Equipment Installation	<ul style="list-style-type: none"> • ILT: Installation Practices of Gas Measurement Equipment • SB: Gas Orifice Meter Tube Fabricator Inspection • SB: Gas Meter Tube Inspection • SB: Tube Bending and Manifold Installation • SB: Tube Bending Guide
11	Advanced Gas Measurement Technician WBT Certificate	<ul style="list-style-type: none"> • Basic Troubleshooting 1 • Basic Troubleshooting 2