



Course Objectives	Competencies
	<p>expression.</p> <p>c. Be able to implement logic functions using ladder logic.</p> <p>d. Create a functional PLC program from any of the following: Boolean Expression, Logic Gate Schematic, Truth Table or Ladder Diagram.</p> <p>e. Know differences between hard-wired logic and programmed logic.</p> <p>f. Know how to wire and program a seal-in circuit.</p> <p>g. Understand Word-Level Logic Instructions.</p>
<p>3. Understand common PLC Programming Instructions &amp; Techniques</p>	<p>a. Know XIO &amp; XIC implementations and avoid common mistakes.</p> <p>b. Know how to use an internal relay bit.</p> <p>c. Understand RUN and SINGLE STEP operation modes.</p> <p>d. Understand how to use LogixPro simulator to test PLC programs.</p> <p>e. Understand latching relays and the operation of latching PLC outputs.</p>
<p>4. Understand basic limit switch and sensor inputs.</p>	<p>a. Understand basic types of contact and limit switches.</p> <p>b. Understand operation of pressure, float, level &amp; temperature switches.</p> <p>c. Understand operation of flow switches, velocity &amp; position sensors.</p> <p>d. Understand concept of a proximity sensor.</p> <p>e. Understand operation of a capacitive sensor.</p> <p>f. Understand operation of an inductive sensor.</p> <p>g. Understand operation of through beam &amp; diffuse beam optical sensors.</p>
<p>5. Understand the operation of PLC Timer instructions.</p>	<p>a. Understand mechanical timers for ON-Delay and OFF-Delay.</p> <p>b. Understand both ON-Delay and OFF-Delay Timer PLC Instructions.</p> <p>c. Understand the operation of a Retentive Timer.</p> <p>d. Understand how to cascade times.</p>
<p>6. Understand the operation of PLC Counter instructions.</p>	<p>a. Understand the operation of UP-Counter instructions.</p> <p>b. Understand the operation of DOWN-Counter instructions.</p> <p>c. Understand how to cascade counters.</p> <p>d. Understand how to combine counters and timers.</p>