



## PLBT 2100 SYLLABUS

<b>Course Number Course Name</b>	PLBT 2100 Basic Electricity and Electrical Controls
<b>Credit Value (Breakdown of theory and lab credits)</b>	2.5 (1 Theory and 1.5 Lab)
<b>Catalog Course Description</b>	This course provides apprentices with information on electrical devices, circuits, and electric measuring instruments as they relate to the installation of mechanical equipment and piping systems. In the coming weeks, students will learn more about theory and practice in Electrical safety; Fundamentals of electricity and electric circuits; Magnetism and electromagnetism; Direct and alternating currents; Circuits and transformers; Inductance and capacitance. The course will also include the topic of Electrical controls which are a critical part in the efficient operation of mechanical systems. Understanding how flow rates and velocities can be affected by the proper electrical control helps the apprentice better recognize characteristics of an inefficient system. Topics covered include Essentials of control systems; Fundamentals of measurement; Types of automatic controls; Auxiliary control equipment; Electrical diagrams; Capacitors and single-phase motors; Application of thermostats and actuators; Float, temperature and pressure controls; and Overview of controls of refrigerant systems. Pre-requisites: None
<b>Student Learning Outcomes/Objectives /Competencies of the Course</b>	<p>Student Learning Outcomes:</p> <ul style="list-style-type: none"> <li>• Identify basic electrical devices and materials.</li> <li>• Identify the relationship of volts, amps and ohms.</li> <li>• Demonstrate low voltage wiring of sensors from transformers to fixtures.</li> <li>• Demonstrate proficiency in calculating the conversion of watts to horsepower.</li> <li>• Demonstrate troubleshooting procedures for low voltage systems.</li> <li>• Identify the various needs of controls based on a particular system.</li> <li>• Determine flow rates and make adjustments to obtain peak performance.</li> <li>• Demonstrate successful interpretations of wiring diagrams for electrical controls.</li> <li>• Demonstrate troubleshooting procedures for electrical controls.</li> </ul>
<b>College-Wide Student Learning Outcomes</b>	<p><i>College Wide Student Learning Outcomes:</i></p> <p><i>Information Competency</i></p> <p><i>Critical Thought</i></p>