

CENTER FOR PROFESSIONAL DEVELOPMENT**WIND ENERGY PROFESSIONAL**

240 Hours/6 Months/Instructor-Facilitated
Course Code: **CPD131** || Course Cost: **\$2195**

OVERVIEW

Wind energy companies are growing exponentially to meet America's demand for clean, renewable, domestic energy. In this program, you'll learn the basics of wind energy principles, including wind technology, wind energy anatomy, wind farm design, wind business, and characteristics of energy sources. This program covers the fundamentals of hydraulics and the basic theory and practice of electrical circuits, including calculations as applied to alternating and direct currents.

OBJECTIVES

Upon successful completion of this program, you'll be able to:

- Describe the evolution of wind turbine technology
- Discuss air flow characteristics and blade efficiencies
- Assess human resources and business planning policies, procedures, and processes
- Explain contract management, fulfillment, and liability to the landowner and manufacturer
- Discuss wind business policies and procedures
- Explain atomic structure and basic values such as voltage, current, resistance, and power
- Summarize the principles of magnetism
- Utilize electrical measuring instruments
- Display competence in principles and operation of basic hydraulic systems
- Interpret schematics and troubleshoot both open- and closed-center hydraulic systems

OUTLINE**I. Wind Energy Principles**

- Wind History
- Wind Turbine Components
- Aerodynamics
- Meteorological Factors
- Wind Farms
- CRM, Six Sigma, Root Cause Analysis, and SWOT
- Inventory Chain and Supply Chain Management
- Lease Agreements
- HR and Company Policies

II. Basic Electrical Theory

- Program Introduction
- Fundamentals of Electricity
- Principles of Magnetism

- Circuits
- The Mathematics of Electricity
- Using Electrical Measuring Instruments
- Inductance and Capacitance

III. Hydraulics and Pneumatics

- Safety
- The Principles of Hydraulics
- Symbology
- Pumps
- Flow Control Valves
- Solenoid Two-way Valves
- Spool and Directional Valves
- Logic Valves
- Pressure Control Valves
- Pressure Relief Valves
- Pressure-Reducing Valves
- Cylinders
- Motors
- Actuators
- Storage
- Hydraulic Plumbing
- Fluids (Petroleum-based)

COMPUTER REQUIREMENTS

This program can be taken on a PC (Windows XP or later) or Mac (OS X or later). You will also need an Internet connection (high-speed recommended) and an active email account.

INSTRUCTOR BIO

Keith Plantier is the program director for the Texas Wind Energy Institute at Texas State Technical College (TSTC). Keith began his career in the U.S. Navy as a nuclear mechanic and received an Associate of Science degree in nuclear technology from Thomas Edison State College. Keith left the Navy after nine years of service and continued his education at Texas Tech University where he received both his Bachelor's and Master's degrees in mechanical engineering.

After graduation, Keith became a design and project engineer at Northrop Grumman, working with manned and unmanned undersea systems. Keith returned to west Texas to become program director for the Texas Wind Energy Institute at Texas State Technical College. He has over nineteen years of experience in power plant operation, maintenance, and design.