Mechatronics – Basic Wiring Course 68 Hrs

Course Objective: This course is intended for workers with little or no formal training in mechatronics. At the end of the course, the student should be able to understand and control simple hardware with Python using a microcontroller.

Training Topics to include:

Fundamentals of Electricity

- Voltage, current, resistance
- Use of a power supply
- Decimal and Binary number systems
- Ohm's Law
- Resistors
- Series and parallel connections
- Breadboarding, schematics reading, use of a multimeter
- Capacitance, Inductance, Magnetism, Capacitive and Inductive Reactance
- Magnetism
- Power
- Diodes, transistors, voltage regulators: rectifier, LED, infrared diodes; small signal transistors
- Analog integrated circuits: Timers, OpAmps
- Digital integrated circuits: Logic Gates, Counters, BCD to 7 Segments Converters

Microcontrollers and Programming

- The Parallax and the MicroBit platforms
- Pulse Width Modulation
- Actuators: Servo motors, Stepper motors
- Movement: open-loop, closed-loop
- Sensors: analog to digital conversion. LEDS, infrared, and ultrasonic sensors

Who should attend? Technicians or anyone interested in learning how to control machines with Python.

ETI Instructors:

Samuel Bolanos has 25 years' experience teaching courses in electronics and in electronics related fields, computers, computer networks certification, soldering certification, etc. Sam has a Bachelor's Degree in Electronics Engineering and a Master's Degree in Electrical Engineering.

Robindra Mukherjee brings a wide range of experience. He has retired from 45 years in industry, having been a prototype machinist, design engineer and shop manager in the medical and aerospace industries.

***Employment Training Panel – State Funded Training: $350.00**
Non-ETP Cost: $2,254.00

WHEN:
Thursdays
February 4, 2027 – May 27, 2027
5:00 pm - 9:00 pm

WHERE:
College of the Canyons
Santa Clarita
Location TBD

For more information or to register, please contact Jocey Hogan at 661.362.5657 or jocey.hogan@canyons.edu

*For employees of eligible employers. Employees are not considered registered until all paperwork is received, the participant fee, per trainee, has been paid to the Santa Clarita Community College District and the Employment Training Panel has determined eligibility. State subsidy is contingent upon the trainee completing all the Employment Training panel requirements. Please contact the Employee Training Institute, 661.362.5657, for details on eligibility requirements.