Competences_Mechatronic_08_28_2012

Core Competencies for a Mechatronics Technician

Basic Requirements
- Language, grammar, sentence and paragraph structure
- Written & oral communication - documentation of activities
- Time management
- Physics + Math
- Environmental concern & waste disposal
- Root cause analysis and problem solving
- Computer Literacy (Microsoft Office)

General
- Technical writing (Read, Write and Understand Various Forms)
- TPM (Total productive maintenance) principles
- Machine safety
- Workplace Safety (OSHA)

Mechanical
- Fluid dynamics
- Fluid dynamics & statics
- Mechanical gears & linkages
- Basic fluid power schematic reading
- Fluid dynamics fitting and standards
- Material science, Material property fundamentals, Basic metallurgy principles
- Machine Operations
- Welding
- Fasteners and bolted connections
- Blue print reading - mechanical w/ basic GD&T (Geometric dimensioning and tolerancing)
- Basic Process flow diagramming
- Quality methods
- Diagnostic method approaches
- Basic Heat Exchange
- Mechanical Power Transmission
- Inspection and layout methods for mechanical components/details

Electric
- DC and AC electrical circuits and soldering
- Wire up simple CKT
- Electrical schematic reading
- Diagnostic method approaches
- Elect. CKT testing
- Wire harness fundamentals
- Wire code and standards
- Basic AC drive - understanding and integration
- Safety - Electrical
- Electrical lab equipment
- Quality methods

Electronic
- Electronic schematic reading
- Bus communications
- Programming/hardware fundamentals
- PLC (Programmable Logic Controller) applications - ladder logic+block logic
- Hardware Support
- Robotics
- Diagnostic method approaches
- Quality methods
- Measurement equipment
- Data acquisition equipment
- Calibration requirements and methods
- Sensors, transducers, signal conditioning
- Sensor technology & application
- Soldering/Desoldering
- Bar Code Fundamentals

Social Competencies/Behavior
- Professional Ethics & Work habits
- Effective Communication skills
- Ability to work in a team