An Overview of the Northwest State Electrical Course Sequence, 4/11/17

The purpose of this document is to show the typical sequence the students would take the electrical courses in at NSCC. The bullet points to the right of the course explains what is taught in the course, as well as the type of equipment taught on. The course overview sheets will get in depth into what skills the student must demonstrate to pass the course.

IND120
Industrial Electrical I
3 Credit Hour

*Basic DC & AC Electricity
*Capacitors & Inductors
*Basic relays and switches
*Basic JIC symbols and electrical control circuit
*Basic electrical troubleshooting

IND121
Industrial Electrical II
3 Credit Hour

*OSHA safety, arc flash, PPE, Electrical Panels
*Basic motors (DC, single & three phase)
*Wiring control circuits (24Vdc & 120Vac)
*Interpreting basic electrical prints
*Wiring an AB MicroLogix PLC from a print
*Basic control circuit troubleshooting

IND223
Motors & Controls
3 Credit Hour

*Three phase power & industrial transformers
*Three phase motors & branch circuits
*Reversing circuits (power & control)
*Wire & program VFDs (A.D. GS2, AB PF525, AB PF70)
*PLC controlling a VFD (analog and Ethernet)
*Troubleshooting VFDs

PLC200
Programmable Controller I
3 Credit Hour

*Allen Bradley SLC-5/05 & CompactLogix
*RSLinx, RS-232, Ethernet & Ethernet IP
*Basic PLC instructions (timers, counters, compares)
*Installing a PLC based on an electrical print
*Troubleshooting PLCs

PLC210
Programmable Controller II
3 Credit Hour

*Allen Bradley CompactLogix hardware
*Tags and data types
*CompactLogix project structure Tasks & Programs
*CompactLogix searching & documentation
*CompactLogix analog I/O modules
*Troubleshooting a CompactLogix system

PLC220
Programmable Controller III
3 Credit Hour

*Allen Bradley ControlLogix hardware
*Ethernet I/O control, Processor messaging over Ethernet
*Producer & Consumer Tags over Ethernet
*Devicenet systems hardware and data control
*Wonderware, computer based HMI systems
*Troubleshooting Devicenet and Wonderware systems