Course Title: **PLC I**
Course No.:   PLC 200
Credit Hrs.:   3
Prerequisites: Electricity II
Location: NSCC

Course Overview:

A study of the installation, programming and troubleshooting of programmable controlled systems currently used in an industrial environment. The primary PLC used for this class will be the Allen Bradley SLC-500 and PLC-5 units, using RSLogix and RSLinx software. The focus will be on Engineering and Maintenance tasks performed with PLC systems.

Course Objectives:

The following is a list of training topics within the course.
1.   Interpret Relay Logic (N.O. and N.C. contacts)

2.   PLC control systems vs. hard-wired control systems

3.   PLC hardware components

4.   Basic Ladder Logic Programming using Windows based software

5.   Addressing of a SLC 500 system

6.   Data and Program File Structure of a SLC 500 processor

7.   Using the search function in RSLogix software

8.   Forcing I/O

9.   Troubleshooting Techniques for PLCs.

10.   Analyze SLC 500 Diagnostic Indicators

11.   Upload, download and saving of SLC 500 Programs

12.   Editing Ladder Logic programs.

13.   Labeling / Commenting Ladder Logic Programs

14.   Discrete and Analog Module Identification / Usage

15.   Basic Wiring of discrete components

Competencies:

1. Write a basic SLC program using Bit, Timer and Counter Instructions .
2. Set-up communication using SLC 500 and Rslinx software
3. Monitor a PLC program running in a processor
4. Forcing I/O.
5. Set-up / Modify configuration files
6. Identify addressing for SLC 500 systems
7. Interpret I/O wiring diagrams
8. Proper use of I/O modules.
9. Finding instructions using the search function
10. Interpret a cross-reference table
11. Generate a hard copy of a PLC program.
12. Address computer for TCP/IP
13. Troubleshoot a PLC system .
14. Upload / Download to a PLC.
15. PLC I/O wiring and troubleshooting.

Assessment:

2 test, 2 quizzes and class assignments will be used for assessment.
Test and quizzes will be a combination of written and hands-on.
In class assignments will be primarily hands-on.

Material Used:

Microsoft Windows NT 4.0 operating systems
RSLogix 500 Software
RSLinx Software
IBM-compatible computers
SLC 500 Modular PLCs.