Wayne County Community College District

COURSE SYLLABUS

MCT 208 Programmable Logics Controller

CREDIT HOURS: 3.00

CONTACT HOURS: 60.00

COURSE DESCRIPTION:
Programmable controller hardware, relay ladder diagram and logic programming, timers and counters, arithmetic function, process control and data acquisition, data communication, computer numerical control computer controlled machines and programmable controller's installation and troubleshooting systems will be covered. Allen- Bradley PLC-5 family programmable controllers will be used in the lab.

PREREQUISITES: NONE

EXPECTED COMPETENCIES:
Upon completion of this course, the student will be familiar with:

- Defining programmable logic controllers (PLC) and its applications.
- Identifying and describing the function of hardware components of PLC.
- Describing the common operation modes in PLC's.
- Developing fundamentals PLC wiring diagrams and ladder diagrams.
- Converting relay ladder diagram to PLC ladder diagram.
- Developing, analyze, and interpret typical PLC timer logic ladder diagram.
- Describing analyze and interpret typical PLC counter logic diagram.
- Describing the function of override, jump, immediate input and output instructions.
- Describing the forcing capability and safety consideration built into PLC's and programmed into a PLC installation.
- Defining data manipulation instructions applied to PLC program.
- Defining the operation of discrete I/O's and multibit and analog types.
- Describing the operation of a closed-loop control system and programming to PLC's.
- Developing analyze, and interpret programs involving math instructions.
- Indentifying and describing the functions of bleeder resistors in PLC.
- Differentiate developing between off-line and on-line programming.
- Describing sequence instructions and applications.
- Describing proper grounding, preventing maintenance tasks associated with PLC's.

ASSESSMENT METHODS:
Student performance may be assessed by examination, quizzes, case studies, oral conversation, group discussion, oral presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

GRADING SCALE:
90%-100% = A
80%-89.9%= B
70%-79.9%= C
60%-69.9%= D
<60% = E