CENTRAL CAROLINA COMMUNITY COLLEGE
Program Planning Guide

CENTRAL CAROLINA COMMUNITY COLLEGE
EVENING & DISTANCE CHOICES

Industrial Systems Technology
Credential: Certificate in Industrial Hydraulics (C5024020)

Career Pathway Options: Associate in Applied Science in Industrial Systems Technology (Higher entrance standards required); Diploma in Industrial Systems Maintenance Technology (Higher entrance standards required); Certificate in Industrial Hydraulics
Program Sites: Lee Campus - Evening Program

Suggested Course Schedule:		HOURS Class	Lab	Credit	Grade	Semester	Notes
1st Semester (Summer)							
BPR 115	Electric/Fluid Power Diagrams	1	2	2			
HYD 110	Hydraulics/Pneumatics	2	3	3			
MNT 111	Maintenance Practices	2	2	3			
		5	7	8			
2nd Semester (Fall)							
HYD 121	Hydraulics/Pneumatics II	1	3	2			
MNT 110	Intro to Maintenance Procedures	1	3	2			
MNT 230	Pumps and Piping Systems	1	3	2			
		3	9	6			
3rd Semester (Spring)							
ELC 128	Introduction to PLC	2	3	3			

Total Semester Hours Credit: 17

Course Descriptions:

BPR 115 Electric/Fluid Power Diagrams 1-2-2
This course covers sketching of detail and assembly drawings and reading of hydraulic, pneumatic, electrical, mechanical, and piping schematics. Emphasis is placed on interpretation and communication skills utilizing sketches, symbols, diagrams, and other related topics. Upon completion, students should be able to read, demonstrate an understanding of, and draw sketches and schematics commonly used in industry.

ELC 128 Introduction to PLC 2-3-3
This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection/installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to install PLCs and create simple programs.

HYD 110 Hydraulics/Pneumatics I 2-3-3
This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting.

HYD 121 Hydraulics/Pneumatics II 1-3-2
Prerequisite: HYD 110
This course is a continuation of HYD 110 and provides further investigation into fluid power systems. Topics include advanced system components, troubleshooting, and other related topics. Upon completion, students should be able to demonstrate an understanding of the installation, application, operation, and maintenance of fluid power components and systems.

MNT 110 Introduction to Maintenance Procedures 1-3-2
This course covers basic maintenance fundamentals for power transmission equipment. Topics include equipment inspection, lubrication, alignment, and other scheduled maintenance procedures. Upon completion, students should be able to demonstrate knowledge of accepted maintenance procedures and practices according to current industry standards.

MNT 111 Maintenance Practices 2-2-3
This course provides in-depth theory and practical applications relating to predictive and preventive maintenance programs. Emphasis is placed on equipment failure analysis, maintenance management software, and techniques such as vibration and infrared analysis. Upon completion, students should be able to demonstrate an understanding of modern analytical and documentation methods.

MNT 230 Pumps and Piping Systems 1-3-2
This course covers pump installation and maintenance and related valves and piping systems. Topics include various types of pump systems and their associated valves, piping requirements, and other related topics. Upon completion, students should be able to select and install pump and piping systems and demonstrate proper maintenance and troubleshooting procedures.