

SME Report

College: Sinclair Community College

Program: Industrial Maintenance

Course Supplement: Binary Signals-Math Supplement

Reviewed By: Russell W. Bowles

Date: 07/17/2018

Qualifications and Related Experience: Russell W. Bowles, I am retired from AK Steel, Electronic Services Department. After completing AK Steel's in house apprenticeship program I served as an apprenticeship instructor from 1978-1985. Classes instructed included; shop math, mechanics, blueprint reading, industrial electricity, ac/dc machines, ac/dc motor control and dc crane control. My work experience at AK Steel includes; mechanics, hydraulics, pneumatics, ac/dc motor control, dc crane control, ac/dc drives, PLC's, and process control (instrumentation).

After retiring from AK Steel, I worked as an adjunct instructor for Butler Tech from 2001-2016. I was an instructor for a 936 hour Industrial Maintenance Technology (adult) program. Areas of instruction included; mechanics, hydraulics, pneumatics, electrical machines, motor control, ac/dc drives, PLC's, and process control (instrumentation). Although the Industrial Maintenance Technology program remained fundamentally the same for 15 programs, continued improvements were made in all areas. Advisory meetings that included individuals for both industry and education helped to guide the improvements made to the program. In addition to the Industrial Maintenance Technology program I was an instructor for an evening electrical apprenticeship program for Wausau Paper Corporation.

In 2016, I moved to Cincinnati State as an adjunct instructor for the Workforce Development Center. Areas of instruction included; electrical safety, shop math, mechanics, pneumatics, hydraulics, industrial electricity, ladder diagrams, and motor control

In 2004, I was the instructor for an Industrial Electricity course and an AC Motor Control course at Sinclair Community College.

From 1983-1995 I was an instructor for numerous part time adult classes for both Butler Tech and Warren County Career Center in the areas of mechanics, hydraulics, industrial electricity, motor control, and plc's.

Review scale definitions:

Exceptional: Review component is a “best practice” and represents a model for replication.

Satisfactory: Review component is complete and effective.

Ineffective: Review component is weak and in need of significant improvement.

Not Applicable: Review component does not apply

Learning Activities	Exceptional	Satisfactory	Ineffective	Not Applicable
Provide opportunities for interaction and active learning.	X			
Help understand fundamental concepts and build skills useful outside of the learning object.	X			
Activities are linked to current industry practices and standards.	X			
Comments and/or recommendations: The problems are all good examples of the types of critical problem solving found in the real world of industrial maintenance.				
Assessment Tools/Criteria for Evaluation	Exceptional	Satisfactory	Ineffective	Not Applicable
The evaluation criteria/course grading is stated clearly in the syllabus.				X
Measure stated learning objectives and link to industry standards.				X
Align with course activities and resources.	X			
Include specific criteria for evaluation of student work and participation.				X
Comments and/or recommendations:				

Equipment/Technology	Exceptional	Satisfactory	Ineffective	Not Applicable
Meets industry standards and needs.	X			
Supports the course learning objectives.				X
Provides students with easy access to the technologies required in the course.	X			
Comments and/or recommendations:				

General Notes: I like that they start with an explanation of base 10 numbers and how they compare with base 2, binary numbers. I started the same way in my PLC classes when teaching base 10 and base 16 number systems. I did not stress manual conversions from one numbering system to another. Easily done on calculators or computers. Somewhat like doing square roots manually instead of using the calculator.

This workforce solution was funded by a grant awarded by the U.S Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.



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