

Course Outline for: VACT 1300 Introduction to Vacuum System Automation

A. Course Description

1. Number of credits: 1
2. Lecture hours per week: 1
3. Prerequisites: VACT 1293
4. Corequisites: None
5. MnTC Goals: None

Understanding how vacuum systems are documented is key to operating, maintaining and troubleshooting that equipment. There are many types of documents that can be used to convey information about a vacuum system including installation and operation manuals, drawings, process diagrams and wiring schematics to name a few. This class will investigate the different types of documentation typically provided with a vacuum system, the type of information addressed in the documentation and how to interpret the information.

B. Date last reviewed/updated: May 2023

C. Outline of Major Content Areas

1. Piping & Instrumentation Diagrams
2. Standard Symbols and Abbreviations
3. Wiring Schematics
4. Installation, Operation and Maintenance
5. Troubleshooting
6. Revision Control

D. Course Learning Outcomes

Upon successful completion of the course, the student will be able to:

1. Identify standard industrial symbols and abbreviations.
2. Interpret schematics and diagrams.
3. Identify key information regarding installation, operation and maintenance processes from system documentation
4. Use a troubleshooting table to find solutions for common problems associated with system installation, operation and maintenance.

E. Methods for Assessing Student Learning

Methods for assessment may include, but are not limited to, the following:

1. Unit quizzes
2. A summative exam
3. Homework assignments
4. Discussions

5. Collaborative projects
6. Other quizzes

F. Special Information

This course is the first of 3 modular 1-credit courses VACT 1300, VACT 1301 (I/O for Vacuum System Automation) and VACT 1302 (Vacuum System Automation Capstone).