Course Outline for: VACT 1302 Vacuum System Automation Capstone

A. Course Description
   1. Number of credits: 1
   2. Lecture hours per week: 1
   3. Prerequisites: VACT 1301
   4. Corequisites: None
   5. MnTC Goals: None

   In this course, the student will apply their knowledge of vacuum system automation to a working automated vacuum system. Students will create a human machine interface (HMI) to interact with the vacuum system and document their system for future users.

B. Date last reviewed/updated: May 2023

C. Outline of Major Content Areas
   1. Wiring Test Board to Remote I/O
   2. Configuring Remote I/O
   3. Adding Remote I/O Points to HMI
   4. Creating HMI
   5. Documenting Operation Procedures

D. Course Learning Outcomes
   Upon successful completion of the course, the student will be able to:
   1. Create a documentation package to support an automation system.
   2. Wire inputs and outputs to a remote I/O device.
   3. Create an HMI to operate components on the system and display information collected from devices.

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 third of 3 modular 1-credit courses VACT 1300 (Intro to Vacuum System Automation), VACT 1301 (I/O for Vacuum System Automation) and VACT 1302.
Course instruction includes access to I/O components, a data acquisition unit, data acquisition and HMI application, a basic multimeter unit and access to a vacuum equipment trainer system to support HMI development project work.