

## Program Description

The Robotic Human Machine Interface (HMI) Advanced Certificate is an add-on certificate for both the Robotics Automated Systems Technology A.A.S. Degree and Diploma programs. HMI control panels are widely used in the manufacturing industry for operator control of robotic and automated systems. This certificate prepares students to program and interface HMI devices into robotic and automated systems.

## Program Outcomes

By completing this program, students will achieve the following learning outcomes:

- Identify, select, and configure HMI device hardware;
- Integrate HMI devices into robotic and automated systems; and
- Create HMI operator control graphical interface code.

## Career Opportunities

This certificate prepares students for career opportunities working with HMI operator control panels for system integrators, original equipment manufacturers, and robot manufacturers. Career opportunities also include working with HMI control panels in the automotive, aerospace, medical, machine tool, packaging, welding, and nuclear power industries. Career titles include Robotic Automated Systems Technician, Field Servicing Technician, and Electrical Controls Technician with specific responsibilities in HMI setup and programming.

## Program Admissions Requirements

Students must be currently enrolled in either the Robotics Automated Systems Technology A.A.S. or Diploma program to be accepted into this certificate program.

## Program Course Requirements

RAST 2121\* SCADA Programming .....2 cr  
RAST 2122\* HMI Programming .....2 cr  
RAST 2153\* Applied Robotic Certification Lab .....6 cr

### GRADUATION REQUIREMENT - 10 CREDITS

*\*Denotes Prerequisites*

## Semester Course Requirements

Individual semester plans are determined between instructor/advisor and student to best meet the needs of the student.

## Course Prerequisites

Some courses may require appropriate test scores or completion of basic math, basic English and/or reading courses with a "C" or better. CLC utilizes a multiple measure approach for placement which may include high school MCA, SAT, ACT scores in addition to high school GPAs. For insurance purposes, internships may require that students be 18 years old.

## Graduation Requirements

In addition to the program requirements, students must meet the following conditions in order to graduate:

1. College Cumulative GPA Requirement: cumulative grade point average (GPA) of credits attempted and completed at CLC must be at least 2.0;
2. College Technical Core GPA Requirement: cumulative GPA of credits attempted and completed towards the technical core of the diploma or degree must be at least 2.0;
3. Residency Requirement: students must complete 25% of their credits at Central Lakes College.

