Robotics

This robotics course emphasizes the design, building, operation, application, and documentation of robotic systems. Students follow the engineering design process, apply basic programming skills, and explore how robots and automated systems are used in industry. Students will have an understanding of the historical and current uses of robots and automated systems; programmable circuits, interfacing both inputs and outputs; proficient ethical standards for engineering and technology professions; and testing of robots.

Indicator # RBT 1 Identify components of a robotic system.

RBT 1.1 Describe the parts necessary to make a robot.
RBT 1.2 Examine the relationships among the subsystems.

Indicator # RBT 2: Understand safety procedures and ethical issues inherent to robotics.

RBT 2.1. Demonstrate proper safety procedures.
RBT 2.2. Determine how to apply OSHA Compliant Lockout – Tag-out procedures.
RBT 2.3. Examine current ethical issues.

Indicator # RBT 3 Construct, analyze and troubleshoot circuits.

RBT 3.1. Build circuit according to schematic diagram.
RBT 3.2. Calculate circuit parameters.
RBT 3.3. Measure circuits parameters.
RBT 3.4. Compare calculated and measured solutions to analyze circuit operation.

Indicator # RBT 4: Design, build and analyze a robotic system.

RBT 4.1 Build and program a robot to perform a specified task.
RBT 4.2 Test the robot for any flaws in hardware or bugs in software components.
RBT 4.3 Write a technical report evaluating the system performance.

Indicator # RBT 5 Research career opportunities and industry applications.

RBT 5.1 Explore career opportunities in the robotics field.
RBT 5.2 Investigate commercial application of robotic systems.