NextGen Technicians:

ADDRESSING INDUSTRY DEMAND FOR ROBOTICS

This project at North Iowa Area Community College (NIACC) is designed to increase the number of industrial technicians in the workforce, all of whom will be skilled in robotics.

Project Objective: Train faculty on new robotics technology.
The PI completed the Fanuc Level 2 Advanced TPP Program course in August 2019. The Co-PI completed the Braas Level 1 course, Universal Robot Programming e-Series training in August 2019.

Project Objective: Train and credential all IMM and IST students using a new Introduction to Robotics course which will include hands-on robotics labs and *NC3 Level 1: Fundamentals of Robotics* coursework and robotics credentialing.
Population Served: NIACC Students

Implementation: NIACC partnered with NC3 to embed the Festo NC3 Level 1 software into ATR-100. Three Universal robots, one UR3 and two UR5 robots, were purchased. The course began on January 13, 2020 with 12 students. When the COVID-19 pandemic forced distance learning in March, the PI utilized Zoom from home for lectures and labs. He installed cameras in his shop to demonstrate to students the set up and operation of a UR5 robot.

Findings: After reviewing the NC3 curriculum, the PI determined that IMM students were missing instructional content in the area of PLCs. This content was necessary for students to successfully proceed in the course. He contacted NC3 and was allowed to add this pertinent information into the course to guarantee student success.

Results: Student success was achieved when eight of ten students taking the NC3 credentialing exam passed and received the Festo Level 1 credential. Six of those eight passed at the Instructor level.

Curricular changes were made to both the IST and IMM programs for the 2020-2021 academic year. ATR-100 Introduction to Robotics will continue to be taught to IST students, moving from second year, spring semester to second year, fall semester. For these students, an additional robotics class, ATR-146 Applied Robotics with the NC3 Level 2 credential will be developed and offered second year, spring semester. For IMM students, a newly created course, ATR-180 Introduction to PLCs and Robotics, will replace ATR-100 and be offered spring semester, second year. ATR-146 will be available to IMM students through an optional certificate.

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