Workforce Learning Summit Innovation or Best Practice

Craven Community College

Customized Training Robotics and Apprenticeship Program with B/S/H

Craven Community College and Bosch partnered to provide Robotics Training to support a new product line of dishwashers. Craven Community College purchased two KUKA robots and sent two employees to training at the KUKA training center in Shelby Township, Michigan. In turn, Craven Community College developed a “Basic” and “Advanced” Robotics program that is taught to Bosch employees locally. Craven and Bosch have partnered to offer a Manufacturing Apprenticeship program. Those students in the program take manufacturing classes through curriculum programs during the morning hours and gain hands-on experience through the Workforce Development department in the afternoon.

DETAILS

In implementing the new dishwasher product line, Bosch was faced with upgrading to new robots. Bosch had used industrial robots but in limited quantity and they were not the KUKA robots. An opportunity was recognized between Bosch, Craven Community College, the Eastern Region Economic Development Board, Craven Committee of 100, and Golden LEAF Foundation to offer training at the local level on these new robots. Craven Community College purchased two KUKA robots and sent two Craven employees to training at the American KUKA training center in Shelby Township, Michigan. In turn, those employees developed a ‘Basic’ and ‘Advanced’ Robotics program that is taught to Bosch employees. This effort cut costs for Bosch and allowed their employees to receive required training locally. Bosch has sent production personnel, electricians and maintenance personnel to train on the robots.

Since August of 2013, Bosch has sent through dozens of employees to learn the KUKA industrial robotic systems. In the “Basic” course, students are taught how to move the robotic arm utilizing the KUKA Robot Controller Teach Pendant. Additionally, students are taught safety precautions, robot programmed movements, and how to establish and edit a program. The course is designed to teach a person with no industrial robot experience how to perform basic operating functions. The “Advanced” course gets more into programming language and teaches a student how robots use programming language to perform tasks and functions. Students learn the KUKA Robotics Language (KRL) and program a number of small operations in order to understand programming language. Students learn to set-up timers in programs and perform programming that counts a desired number of evolutions.

Starting in the fall of 2014, Craven and Bosch partnered to offer a Manufacturing Apprenticeship program for newly hired high school graduates. This program provides an opportunity to develop students who are knowledgeable of Bosch’s machines and manufacturing techniques. Those students in the program take manufacturing classes through curriculum programs during the morning hours and gain hands on experience through the Workforce Development department in the afternoon. The students are receiving valuable “hands-on” experience in Electrical Control systems, Drafting, Machine Shop practices and other areas that directly relate to skill sets that they
would use as employees of Bosch. Additionally, the students are taught safety practices when operating around manufacturing tools and machinery. Bosch has been active in helping design the content of the program.

Implementation: KUKA Robotics-Fall 2011; Manufacturing Apprenticeship Program-August 2014

Partner Type(s):
- Business/Industry (direct involvement)
- Economic Development
- Workforce Development Board/Career Center
- Nonprofit organization(s)

Impact/Outcomes
- Economic savings by providing local training opportunities.
- Knowledgeable and skilled workforce of industrial robots.
- Cooperation between all involved parties to bring employment and economic opportunities to Craven County.
- Developing talent locally to provide economic opportunity.
- Customers able to acquire training through the Customized Training Program.

Funding Source(s)
Golden Leaf Grant - $167,000.00
Craven Committee of 100 - $6,800.00
NC Community College System - $5,600.00
Total Budget - $179,400.00

REFLECTIONS

Innovation or Best Practice
The Robotics training and Manufacturing Apprenticeship Program are examples of what can be accomplished within a county/community when people and organizations work together for the betterment of the community. It is an example of “Grow your Own” in the workforce.

Lessons Learned
Industrial robotics is a highly technical field. It is recommended that you ensure you have personnel with the skills to teach the robotics courses or have a similar background so that they can quickly learn the systems. Persons who can perform robotics programming are in high demand and you cannot rely on adjunct instructors in a rural area to be knowledgeable of this type of technology.

Scalability
Additional courses can be offered utilizing the robots. Additionally, our Electronics instructor uses the robots in his curriculum to demonstrate programming and to explain and illustrate Programmed Logic Controller circuits. Programs that start out to benefit one population often wind up benefitting others.

RESOURCES

Workforce Learning Summit Presenters
Dr. Catherine Chew – President Craven Community College
John Wilson – Bosch, Director of Human Resources
Eddie Foster – Craven Community College, Director of Customized Training
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