

NOT YOUR FATHER'S MANUFACTURING TECHNOLOGY

PROGRAMS GO HIGH-TECH TO MEET THE DEMANDS OF A CHANGING WORKPLACE

By Elizabeth Whitchurch and Shawnda Schelinder • Photos by Dale Thomas and Elizabeth Whitchurch

With all the doom and gloom in the news today, it's good to know there are bright spots.

Right now, various areas of manufacturing are crying for highly trained, skilled employees. Wisconsin's WORKnet projects a 12 percent growth through 2016 for machine tool operators and related jobs. And the growth opportunity is downright glowing for graduates of industrial automation programs. Estimates based on studies by the U.S. Bureau of Labor Statistics project a 5 to 7 percent growth each year for the next five years in automation, in addition to the estimated 15,000 jobs per year in automation vacated by retiring Baby Boomers*.

Industrial Automation, Controls and Networking Technician

This is the current and future outlook for a unique program at the WITC-New Richmond campus called Industrial Automation, Controls and Networking Technician, with only two other programs in the country with similar curriculum: one in Texas, the other in Maryland.

"We just can't turn graduates out fast enough!" says Steve Hintz, Industrial Automation, Controls and Networking instructor.

The program uniquely educates its graduates to manage process and



Casey Callender, left, and Kyle Farrell, work together to cable routers and switches to network remote PLCs (programmable logic controllers) as part of their learning in WITC's Industrial Automation, Controls and Networking program.

Elizabeth Whitchurch

computerized controls as automation engineers, automation and control technicians and electrical and instrumentation technicians in long-lived industries that affect everyday life; namely, electricity, waste or municipal water, power, chemical/petrochemical, food and beverage, biofuel/renewable energy, pharmaceutical and pulp/paper and others.

Years ago, instrument mechanics were trained to adjust the variables in a manufacturing process, namely

temperature, pressure, flow, level and chemical properties. Now, electronic controls networked to computerized control systems make those adjustments, and highly skilled technicians must monitor and troubleshoot the entire process. Hintz says WITC is unique because it melds the electrical aspects with the computerized controls into one program.

As with other WITC programs, the advisory board plays a major role in shaping and directing the curriculum

taught in the Industrial Automation program.

“They helped us rename the program to better describe what our students are learning. Now employers read the name and know they want to talk to our grads,” Hintz explains.

Many of his current students are in their late-20s with some industrial or hands-on experience, such as carpentry or heating/ventilation/air conditioning. They realize jobs exist in industrial automation and want specific job training. For some, the shorter 16-week certificates – Instrumentation and Control Systems Specialist and Advanced Automation and Control Systems Specialist – are ideal to meet their goal.

“While there are four-year graduates in the automation arena,” Hintz says, “they typically don’t hit the ground running as hard as two-year graduates. They simply don’t have the hands-on experience the two-year college offers.”

Hintz sees several students each year who hold four-year degrees, but take selected automation classes at WITC to get the valuable hands-on knowledge.

Graduates from Industrial Automation step into jobs making as much or more than a four-year university graduate, due largely to the comprehensive curriculum WITC offers, along with the great amount of hands-on learning. One 2008 graduate started at \$45,000; another, who had additional experience in industry, landed a position paying more than \$65,000. And both had the job lined up before graduation day.

“The feedback about the program is positive,” Hintz says. “Our graduates are happy; and employers are happy.” Happy is good. ■

—Elizabeth Whitchurch is the marketing and public relations associate at WITC-New Richmond

**Automation World, August 2007*



Instructor Paul Kalin shows student Tyler Krone how to perform a facing cut on a Haas Milling Machine.

Dele Thomas

Machine Tool Operation

“Manufacturing is not dead.” It’s a bold statement, but one that Paul Kalin absolutely believes is true. Kalin has witnessed how the manufacturing industry has evolved over the past 16 years, since he graduated from WITC-Superior’s Machine Tool Technician program. Kalin now teaches the Machine Tool Operation (MTO) program at WITC’s Ashland campus and prepares his graduates for the ever-changing technology of a thriving industry.

“When I went through the program, 90 percent of the training was on manual machines,” Kalin says. “As important as those base skills are, today’s manufacturing environment requires a very high level of computer skills. The focus has definitely changed in the last 20 years.

“There are very few ‘level pullers,’” Kalin continues. “The workers are at a higher skill level than ever. They have to have

mechanical skills, computer skills and math skills.”

Rick Vandevoorde, manufacturing manager at Bretting Manufacturing Co., Inc. in Ashland, agrees today’s workers need education and training for even entry-level positions. And there is an immediate need for those workers. “There are more positions available than people to fill those positions,” Vandevoorde says. “The job outlook is excellent. Speaking for Bretting – looking ahead with business growing and potential losses due to retirements – I see us hiring between three or more per year.”

He figures as much as 10-20 percent of the workforce in the region will be retiring in the coming years. Retirements coupled with increased sales have many in the industry feeling the shortage of skilled workers.

Kalin works closely with the MTO advisory board to ensure WITC is meeting the needs of businesses in the

region. The advisory board provides input to Kalin, who designs the MTO curriculum to meet industry needs.

Mike Zacharias, president of Extreme Tool, serves on the board and saw another way he could help. In addition to providing input, Zacharias donated a piece of equipment that was not currently part of the MTO lab at WITC-Ashland.

“The Electrical Discharge Machine (EDM) is one of the technologies that we use at Extreme Tool that WITC didn’t have,” Zacharias says. “When we recently updated a machine with more automated technology, we felt that the students from WITC could benefit.”

Extreme Tool and other mold-making industries will benefit from the donation as well. “EDM is pretty specific to the mold-making industry,” says Zacharias. “Part of our hope is that by exposing the students to this equipment, they will develop an interest in the industry.”

Developing an interest in the industry has been a tricky task, though on the surface, it should not be a tough sell. “There are a lot of jobs in the region,” says Kalin. “And these are good-paying jobs. Many of my students have jobs lined up before they even graduate.”

Graduate follow-up surveys support Kalin’s assertions. Within six months, 80 percent of the graduates responding to the survey have found a career with an average salary of more than \$30,000. Plus, the MTO program is only nine months; graduates can be qualified for the workforce in less than a year.

Kalin figures his job is not only to educate his students for the workforce, but to educate the public about the industry as well.

“Modern machine shops are not dark and dirty,” Kalin says. “The work environment is bright and clean and definitely high tech.”

Bretting is an example of that. “We are a World Class LEAN Facility,” says Vandevoorde. “What that means is we are considered to be in the top 5-10 percent in the world at manufacturing. We compete with companies from all over the world in a relatively small market of customers. We have to be the best at what we do, but still competitively priced.”

“There will be a huge turnover in the next 10 years. We need the qualified workers to fill these jobs or the jobs will disappear,” says Kalin, proving that recruitment to the program is vital to both WITC and the industry. ■

—*Shawnda Schelinder is the marketing and public relations associate at WITC-Ashland*

Industrial Automation, Controls, and Networking

- Associate Degree (2 years)
- Offered at New Richmond
- Classroom and hands-on laboratory instruction provides students with an understanding of computer and programmable logic controller (PLC) interfacing, control systems, network installation, and administration. This WITC program is unique to the state.

Machine Tool Operation

- Technical Diploma (1 year)
- Offered at Ashland
- This program emphasizes core machining skills and prepares students for a career in the machining industry. Students learn the machining skills required to set up and operate manual and computer-controlled machines. Students learn to use hand tools, precision measuring instruments, read prints, and create parts using a computer-aided manufacturing system. Skilled Machine Tool Operators work in production and maintenance departments, tool rooms, and job shops.

For information on these related programs go to witc.edu/programs

Automated Packaging Systems Technician

- Technical Diploma (2 years)
- Offered at New Richmond

Information Technology – Network Specialist

- Associate Degree (2 years)
- Offered at Ashland, New Richmond, Rice Lake and Superior

Machine Tool Technician

- Technical Diploma (2 years)
- Offered at Rice Lake and Superior

Machine Tooling Technics

- Technical Diploma (2 years)
- Offered at New Richmond