

Mesa Community College Successfully Trains Next Generation in Advanced Manufacturing with Aid of Tooling U-SME

The Arizona Advanced Manufacturing Institute (AzAMI) of Mesa Community College (MCC) is helping meet the need for qualified, employable workers in the advanced manufacturing sectors, industries vital to Arizona, by building on workers' prior experience, aligning training to industry needs and using innovative approaches to learning including Tooling U-SME online courses.

With the award of a 4-year, \$2.5 million U.S. Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grant¹, AzAMI programs are retraining an existing workforce and educating a new generation of skilled workers who will provide long-term support to the expanding manufacturing sector in Arizona.

Aligning with Industry to Build a Pipeline

"In addition to traditional students, our strategy is to attract workers with existing skills and aptitude, such as returning veterans and Trade Adjustment Act workers who lost jobs at no fault of their own due to foreign trade, to help them develop the new skills necessary to meet the needs of today's employers," said Leah Palmer, AzAMI executive director.

Among the varied skills being taught are machining, electronics, drafting and welding. MCC also offers dual credit partnerships with local high schools for welding and machining programs.

"We are about to be faced with the baby boomer bubble and the number of retirements are accelerating," said Bob Bonura, MCC Applied Sciences & Technology Chair. "There is urgency here to fill the pipeline with capable and qualified employees."

To address these needs and with input from industry partners, AzAMI has enhanced current curriculum and laboratory equipment and is blending innovation using technology such as Tooling U-SME online training. The group has also established best practices from other TAACCCT-funded programs to accelerate progress for participants. These solutions include:

- Certification Boot Camps providing training that results in industry certifications for advanced manufacturing industries (aerospace, automotive, engineering, electronics and welding).
- A Career Navigator who acts as a career coach for students and as a liaison with local manufacturers securing internship opportunities and job placement.
- Aligning with industry standards and equipment to provide industry-relevant, stackable learning opportunities tied to job descriptions.
- On-site classes at industry locations allowing workers to do courses after a shift.
- Online and hybrid training to appeal to veteran and long-distance students.



Azami Advanced Manufacturing Institute (AzAMI) programs are retraining an existing workforce and educating a new generation of skilled workers.



AzAMI has enhanced current curriculum and laboratory equipment and is blending innovation using technology such as Tooling U-SME online training.

Tooling U-SME a Flexible Interactive Resource

To help meet its goals, AzAMI turned to Tooling U-SME online training which MCC began using in 2010.

“Tooling U-SME offers our diverse student body all the right industry certifications with the flexibility afforded by being online 24/7,” Bonura said. “Since we began working with Tooling U-SME we’ve increased our enrollment by 200 percent.”

Tooling U-SME is the leading provider of online innovative training and support services for the manufacturing workforce. It maps online training classes to the National Institute for Metalworking Skills (NIMS) Standards, SME Certified Manufacturing Technologist (CMfgT) certification, Manufacturing Skill Standards Council (MSSC) standards and American Welding Society (AWS) SENSE Level 1 standard. On the machining side, fully two-thirds of Tooling U-SME classes at MCC are aligned with these industry-recognized certifications.

Tooling U-SME’s extensive online courses complement the essential hands-on training provided by experienced instructors. According to Bonura, instructors and students embraced the technology after some initial hesitation.

“At one-tenth the price of text books, our students quickly adapted and also appreciate the flexibility,” Bonura said. “Our instructors have come on board especially because assignments are automatically graded and statistics are easily compiled, reducing their administrative time.”

Tooling U-SME successes at MCC since 2010 include:

- 829 students enrolled
- More than 22,000 classes completed
- More than 17,700 class hours
- 13% average knowledge gain

A Student Success Story

MCC and Tooling U-SME classes have been instrumental in the success stories of scores of students wanting to develop or upgrade their professional and technical skills to enter the growing East Valley workforce.

One such example is Matt Tellefsen, an MCC graduate who realized a lifelong dream of being a machinist after he lost his job due to downsizing.

“I saw it as an opportunity to go back to school to be able to do what I really wanted,” Tellefsen said. “With the help of mentors like Bob Bonura and the great teachers at MCC, I earned an Associate of Applied Science degree in Machining and Product Development in 2013.”

Tellefsen said he particularly benefitted from the hands-on demos, the clear, sequential curriculum and the comprehensive testing provided by Tooling U-SME.

“The interactive aspect of Tooling U-SME is really what makes it the wave of the future for school curricula,” he said. “I believe Tooling U-SME helps with encouraging students to do well. If you attack the sections when they are assigned, you are given numerous chances to pass the section and really learn the material.”

Within a week of graduating, Tellefsen found a local job in the aerospace manufacturing industry.

Beyond his machining skills at the new job, Tellefsen has used the writing, math and public speaking skills gained at MCC on a daily basis. Among his other duties, he now leads a team developing lean manufacturing processes for his company.

“Without a doubt, if I didn’t have the training I received from MCC I would not have had the confidence and drive to step up to the plate and make the changes that are needed,” he said.

¹The TAACCCT Program provides community colleges and other eligible institutions of higher education with funds to expand and improve their ability to deliver education and career training programs that can be completed in two years or less, are suited for workers who are eligible for training under the TAA for Workers program, and prepare program participants for employment in high-wage, high-skill occupations.