
Competency Models In Action:

Community College Consortium Develops Cybersecurity Career Pathway

August 2014

- Using the Cybersecurity Competency Model to develop career pathways
- Collaborating with business and government entities to identify industry needs
- Complementing coursework with on-the-job experience to gain credentials

Introduction

The Arizona Sun Corridor-Get Into Energy Consortium (ASC-GIEC), comprised of five Arizona community colleges, received a Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant to develop programs and help fulfill the state's energy industry workforce needs. The lead institution, Estrella Mountain Community College (EMCC), one of ten Maricopa County community colleges, has developed an innovative cybersecurity degree program that relates to the utility industry and the smart grid. ASC-GIEC is one of eleven TAACCCT grantees that have developed cybersecurity programs of study. Their program is based on the U.S. Department of Labor, Employment and Training Administration's (ETA) Cybersecurity Competency Model. EMCC modified ETA's model based on advice from an industry advisory council that students need on-the-job experience as they work to acquire industry credentials.

The Workforce Need

A report issued by Burning Glass Technologies reveals that cybersecurity job postings have grown 74 percent since 2007, significantly outpacing the growth of IT jobs overall. The report also finds a gap between the demand for cybersecurity jobs and the pool of qualified candidates, causing cybersecurity postings to remain open 24 percent longer than all IT jobs as employers struggle to fill these roles.

According to the report, there were 209,749 national postings for cybersecurity jobs in 2013. These postings are growing twice as fast as IT jobs overall, and now represent 10 percent of all IT job postings. In 2013, U.S. employers posted 50,000 jobs requesting a Certified Information Systems Security Professional (CISSP), recruiting from a pool of only 60,000 CISSP holders¹

Approach

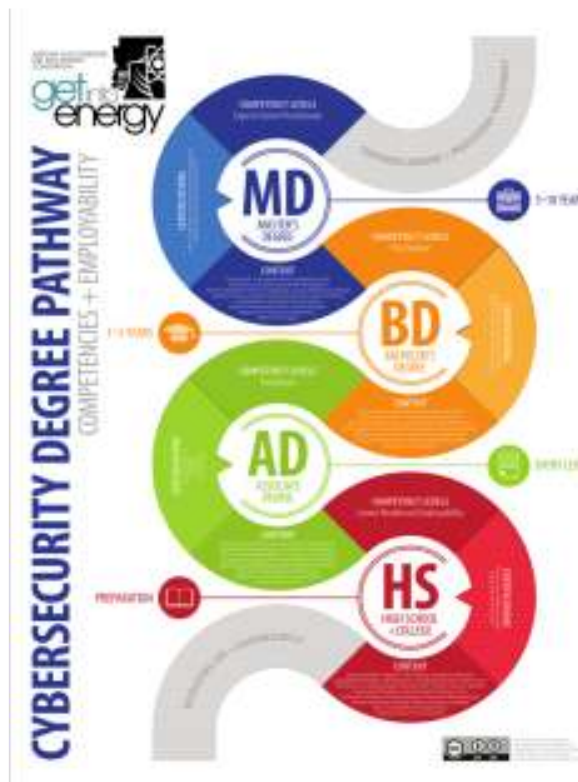
“It all started when an industry partner asked us whether we were going to include a cybersecurity component in our TAACCCT grant application,” says Dr. Clay Goodman, Vice President, Occupational Education, EMCC and Director, ASC-GIEC. “Their experience had been that workers who started out in entry level cybersecurity occupations quickly moved on to

¹ Business Wire, “The Cybersecurity Talent Market: Rapid Growth Pushing Demand Ahead of Supply, March 5, 2014

other IT fields because they didn't see a clear career pathway as a cybersecurity technician. Our other employer grant partners concurred. The Cybersecurity Career Pathway initiative has now evolved into a significant aspect of our TAACCCT grant.”

EMCC was well-positioned to launch a cybersecurity initiative. Dr. Rufus Glasper, Chancellor of the Maricopa Community College District, sits on the U.S. Department of Homeland Security Academic Advisory Council-Subcommittee on Cybersecurity and has championed the college's Cybersecurity Career Pathway with the agency. The college works closely with an industry advisory council with representation from a broad array of key entities in the cybersecurity community. These include the FBI Cyber Operations Unit (Phoenix Field Office), Association for Computing Machinery, Arizona Counter Terrorism Intelligence Center, Arizona Public Service, Palo Verde Nuclear Generating Station, Arizona Department of Homeland Security, and Arizona Cyber Threat Response Alliance. EMCC also collaborates with CyberWatch West at the Center for Cybersecurity Education, the National Cybersecurity Institute at Excelsior College, and InfraGard, a partnership between the FBI and the private sector, including academic institutions.

“Our Cybersecurity Degree Pathway is derived from the competencies in ETA's model but it differs in that it is serpentine, not linear,” says Dr. Goodman. “Students can move through a pathway from career readiness/employability in high school to expert/senior practitioner status in a graduate degree program. What makes it distinctive is that as individuals progress along the pathway, coursework must be accompanied by increasing years of experience on the job before they can attain the credential. It is almost like an apprenticeship.”



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Next Steps

EMCC has already begun working with local high school students, utilizing the foundational tiers of ETA's Cybersecurity Competency Model, to prepare them for college-level coursework. In August 2014, the college will offer four cybersecurity tracks for students: Power Systems and IT Security; Network Security (Cisco); Systems Security (Linux) and Systems Security (Microsoft).

“We plan to recruit a number of population streams for our cybersecurity initiative,” says Dr. Goodman. “We’re seeking college and high school students, veterans and incumbent workers. Our Cybersecurity Career Pathway provides an opportunity for individuals from many walks of life to expand their employment opportunities across multiple industries with common, stackable credentials.”

Related Links

Arizona Sun Corridor Get Into Energy Consortium

<http://az.getintoenergy.com>

EMCC Cybersecurity Degree Program

<https://aztransmac2.asu.edu/cgi-bin/WebObjects/acres.woa/wa/freeForm3?id=74488>

Protecting Energy's Infrastructure and Beyond: Cybersecurity for the Smart Grid Power Point

http://az.getintoenergy.com/sites/default/files/aacc_cyber_presentation_final.pdf

TAACCCT Grantee Program Finder

<http://www.careeronestop.org/taaccct/taaccct.aspx>