

Impact in Arkansas

2011

Partnering with Arkansas to Educate America's Workforce

A sustained economic recovery requires a skilled and well-trained workforce. To reach their full potential as a vital resource for the United States, graduates now need to acquire problem-solving and critical-thinking skills, in addition to specific job-related expertise.

As organizations become increasingly reliant on innovative workers and intelligent networks, Cisco® Networking Academy® is helping Arkansas prepare for stable, high-paying jobs by teaching the skills that employers need.

A Leader in Education Innovation

Cisco Networking Academy is a transformative, technology education program that prepares college- and career-ready students for the 21st century with curricula that builds information communications technology (ICT) and networking knowledge and skills.

Networking Academy is recognized worldwide as a leader in education innovation and e-learning. The courseware is developed by Cisco and delivered through public and private education organizations.

Curricula include instructor-led course content, online learning and skills assessments, hands-on labs, and innovative simulation and gaming technology. Core courses include IT Essentials, CCNA® (Cisco Certified Networking Associate) Discovery, CCNA Exploration, and CCNA Security. Students may then enroll in the more advanced CCNP® (Cisco Certified Networking Professional) courses.

Successful completion of the course work helps prepare Networking Academy students to take exams and earn ICT certifications that are valued by employers in diverse global industries and public-sector organizations. Courses also prepare students to pursue further education or apply these skills in their own businesses.


As of October 31, 2010, approximately 167,000 students were being taught by 4214 instructors in 2388 academies across the United States and Canada. Rapid growth over the past decade has demonstrated the program's success and versatility with its

One million students engaged this year in 165 countries makes Cisco Networking Academy one of the world's largest classrooms. Since its inception in 1997, more than 3.75 million students have been enrolled, attending courses offered at local high schools, community colleges, universities, and nontraditional settings.

Cisco uses the network to connect students and instructors, and to partner with over 10,000 education institutions, while delivering 1 million online assessments per month, around the world.

Networking Academy cultivates partnerships with a broad range of education, government, NGOs and private organizations to advance education.

Cisco is the worldwide leader in networking for the internet, delivering innovations that change how we work, live, play and learn.



geographic reach, the diversity of students, the number and variety of partners, the breadth and relevance of curricula, and its ability to keep pace with technical and pedagogical advances. Course content is consistent, providing students everywhere the same knowledge, skills development, and assessments.

Unique to Networking Academy is a focus on instructor professional development, and the creation of communities of support for both instructors and students. Instructors receive training prior to teaching their first class. They also have many professional development opportunities throughout the year, and access to peer communities where they can collaborate and share best practices online and in person. Students become part of a global network that helps them to troubleshoot coursework and prepare for exams, while also providing mentors and encouragement to one another.

National Education Standards for a 21st Century Workforce

There is a growing concern on the part of government, foundations, and business organizations about the ability of our future workforce not only to enable economic recovery, but also meet the challenges of global economic competition. Several efforts are under way to help schools identify requirements for more rigorous studies that will improve math and science test scores, develop career-ready skills, and stimulate student interest in science, technology, engineering, and mathematics (STEM). Some of these efforts include:

- The education initiative and funding opportunities announced from the Obama administration to increase STEM literacy, teaching quality, and expansion of education and career opportunities to under-represented groups like women and minorities.
- The Common Core Standards, introduced as a state-led effort from the National Governors Association and Council of Chief State School Officers, to establish mathematics and language arts standards that define the knowledge and skills students need for success in college and careers.
- The Partnership for 21st Century Skills definitions of core subjects and 21st century themes representing the knowledge, skills and expertise that students should master to succeed in work and life.

The emphasis on technology is a common theme in all of the efforts to establish education standards. With our increasingly Internet-centric world, most careers in this century will require a strong understanding of how to take full advantage of technology-enabled communications and business processes. Educators want to use technology in their classrooms to better engage students, develop skills, and extend the learning experience. In addition, a workforce that is well-schooled in ICT and engineering can help spur innovation across many industries, which in turn opens up additional business opportunities to fuel productivity and economic growth. ICT investments are expected to play a major role in generating stable, high-paying jobs and boosting the nation's GDP.

“Now is the time to build a firmer, stronger foundation for growth that will not only withstand future economic storms, but one that helps us thrive and compete in a global economy. It’s time to reform [education] to provide Americans of all ages a chance to learn the skills and knowledge necessary to compete for the jobs of the future.” –President Barack Obama, January 2011

Networking Academy combines an emphasis on education standards and the skills that will be required in future job markets. Networking knowledge will be especially important in critical areas such as green technologies, healthcare, smart energy grids, and the push toward universal broadband deployment. The educational infrastructure at Networking Academy helps to ensure that the program's curricula will evolve to deliver technology knowledge and skills that can meet future learning requirements.



State-of-the-Art Learning Environment

The instructional approach at Networking Academy encourages student engagement, enhancing the student's ability to synthesize learning and apply it in other contexts. Four skill areas identified by education researchers as critical for 21st century workers have been integrated into the course content:

- **Problem solving and decision making:** Students practice and test their knowledge by configuring and troubleshooting networks using hands-on labs and simulation software.
- **Creative and critical thinking:** Students understand the how and why of networking by combining hands-on learning with conceptual and analytical exercises.
- **Collaboration, communication and negotiation:** Students acquire individual and teamwork skills as they perform lab exercises and engage in business scenarios through gaming, all of which prepares them for the job world.
- **Intellectual curiosity and information handling:** Students develop the ability to locate, select, structure and evaluate information. Real-world case studies give students the opportunity to develop cutting-edge problem-solving techniques.

Spotlight on Community Colleges

A unique feature of these institutions is their link to business and industry, and hence their integration into economic development. Community colleges are working to align their curricula, certifications and degrees with new ICT jobs through Networking Academy implementations. In the United States, 50% of all community colleges offer Networking Academy courses.

According to researchers, students today are faced with high tuition costs, a weak economy, and increased competition for admission to four-year colleges. They are more likely than at any other point in history to attend community college. Community colleges are also an invaluable resource for adults seeking to acquire new skills that are needed by employers. As a result, community colleges have experienced a spike in enrollment. And in October 2010, the White House convened the first Summit on Community Colleges to highlight the critical role they play in developing the nation's workforce, and in meeting President Obama's goal to lead the world with the highest proportion of college graduates by 2020.

As an example of how these institutions are responding to the challenge, Cuyahoga Community College instructor, Hamid Abdollahian, creates awareness around the increasing need for ICT and networking skills in the workplace and for Cuyahoga as a path for graduates to obtain those jobs. In his role as director of the Cisco Regional Academy at Cuyahoga, he contributes articles to print and online publications, and speaks on campus, about the knowledge and skills obtained through Networking Academy courses. Hamid includes facts from the Ohio Department of Jobs & Family Services, which recently reported on the fastest growing positions in the Cleveland metropolitan area: an expected increase of 4000 jobs in computer and mathematical occupations, including network systems and data communication analysts, which will be the jobs with the highest growth between 2006 and 2016. Hamid says, "Students are often surprised by the number of specializations within the networking field, and the number of industries and types of companies looking for this expertise. I spread the word that only 20% of 490 million legacy phone systems have been converted to voice over IP. I talk about the tremendous need for wireless network and storage network specialists, as well as network security experts to prevent cyber-attacks." The networking field is constantly evolving, and Networking Academy courses reflect those changes by incorporating real-world customer challenges. "This ensures that our students have access to the industry's best training and certification, and that our graduates can compete for higher-paying technology jobs. Anything we can do to help our local economy by preparing its workforce is priority #1 for us."

Another example is the partnership of two community colleges with the Colorado Department of Corrections (CDOC) to establish the first Cisco Networking Academy in a U.S. prison. Academy instructors from Arapahoe Community College and Pueblo Community College contributed to the CDOC vision of opening doors of opportunity within prison walls. Now, offenders at the Denver Women's Correctional Facility can learn and practice ICT and networking skills, using Networking Academy's hands-on curricula, and move towards successful re-entry into society. Many are experiencing successful learning for the first time and are gaining a new sense of confidence in their ability. Within the first month, students were discussing complex technology concepts with assurance. The instructors and CDOC also partner with the business community to have professional women in ICT careers visit the facility to talk with the students. According to Carl Wotowis, Assistant Director of the Offenders Program, "Our students know the odds are against them out in the community, but they are willing to give it everything they can. I think the biggest surprise for all of us is how much they support each other. They are pioneers, and the camaraderie among them is remarkable and inspiring. They have a sense that they may not only change their own lives, but the lives of other women in prison."

The Data Behind the Demand

Tables 1 and 2 outline the growth and projected demand for ICT-related careers in the nation and the state.

Table 1. Projection of select ICT occupations in the United States¹

U.S. Occupation Projections	Employment		Change		Average Annual Openings	Occupational Employment as of May 2009 ²
	2008	2018	#	%		
Computer Support Specialists	565,700	643,700	78,000	14.0	23,460	540,560
Computer Systems Analysts	532,200	640,300	108,100	20.0	22,280	512,720
Network and Computer Systems Administrators	339,500	418,400	78,900	23.0	13,550	338,890
Network Systems and Data Communications Analysts	292,000	447,800	155,800	53.0	20,830	226,080
Computer and Information Systems Managers	293,000	342,500	49,500	17.0	9,710	287,210

Table 2. Projection of select ICT occupations in the state³

Arkansas Occupation Projections	Employment		Change		Average Annual Openings	Occupational Employment as of May 2009 ²
	2008	2018	#	%		
Computer Support Specialists	4,063	4,438	375	9.2	164	3,850
Computer Systems Analysts	3,011	3,688	677	22.5	148	2,740
Network and Computer Systems Administrators	2,455	2,912	457	18.6	102	2,380
Network Systems and Data Communications Analysts	2,514	3,576	1,062	42.2	157	2,050
Computer and Information Systems Managers	1,449	1,581	132	9.1	36	1,380

¹ Source: U.S. DOL, Bureau of Labor Statistics, October 2010, bls.gov/oco/oco2003

² Source: U.S. DOL, Bureau of Labor Statistics, State Occupational Employment and Wage Estimates, May 2009, stat.bls.gov/oes/current/oesrcst

³ Source: Arkansas Department of Labor, August 2010

The Impact in Arkansas

The partnership between Cisco Networking Academy and Arkansas has touched the lives of 14,441 students and generated an estimated in-kind contribution value of \$6,502,324 to education in the state. Tables 3 and 4 provide information on the state's current academies, curricula, and education levels.

Table 3. Cisco Networking Academy in Arkansas¹

Students					2,193
Female students					16%
Distinct cumulative students					14,441
Instructors					62
Academies					31
Education level (students/academies at more than one education level are counted proportionately)	Secondary Schools	Community Colleges	Universities	Other ²	
Students	32%	54%	14%	0%	
Academies	40%	53%	6%	0%	
Curricula³ (students/academies that take/teach multiple curricula are counted more than once)	ITE	CCNA 1, 2	CCNA 3, 4	Advanced Technologies / Other ⁴	
Students	38%	61%	19%	4%	
Academies	55%	68%	45%	23%	
In-kind contribution value⁵ (estimated cumulative value to academies including donations and discounts)					\$6,502,324

¹ Source: Quarterly Metrics, October 2010

² Includes community-based organizations, middle schools, military, nontraditional educational settings, and post-graduate institutions

³ Source: MRE report 4415P51, November 2010

⁴ Includes CCNA Security, CCNP, Security, Wireless, IP Telephony, Java, UNIX and Panduit Network Infrastructure Essentials (PNIE)

⁵ Source: MRE report 4469, November 2010

Table 4. Active Academies in Arkansas¹

Active academies are defined as those that have taught a class with at least three distinct student assessments or adopted a new curriculum within the last 12 months.

Number of Districts	With Networking Academies	Without Networking Academies	% Penetration
4	4	0	100%

* Indicates Cisco Networking Academy Training Center

Congressional District 1

*Arkansas State University Mountain Home (Mountain Home)

Arkansas State University Technical Center (Marked Tree)

Black River Technical College (Pocahontas)

*Mid-South Community College (West Memphis)

Mountain Home High School (Mountain Home)

North Central Vocational Center (Leslie)

Paragould High School (Paragould)

The School District Of Osceola County (Osceola)

University of Arkansas Community College at Batesville (Batesville)

Congressional District 2

233RD RTI, ARNG (North Little Rock)

*Arkansas State University - Beebe - Regional (Beebe)

Army National Guard Professional Education Center (North Little Rock)

Bryant High School (Bryant)

Conway Area Career Center (Conway)

Hall Cisco (Little Rock)

Metropolitan Career & Technical (Little Rock)

*Pulaski Technical College (North Little Rock)

Sylvan Hills High School (Sherwood)

Congressional District 3

Lincoln Consolidated School District (Lincoln)

*North Arkansas College (Harrison)

North West Arkansas Community College (Bentonville)

*University of Arkansas – Fort Smith (Fort Smith)

Congressional District 4

Hope High School (Hope)

Magnolia Public Schools (Magnolia)

Ouachita Technical College (Malvern)

Prescott High School (Prescott)

South Arkansas Community College (El Dorado)

*Southern Arkansas University - Regional (Magnolia)

Southern Arkansas University Tech (Camden)

UAM-College of Technology Crossett (Crossett)

¹ Source: Congressional_Report_November 2010

Arkansas Student and Community Impact Story

As a former crop dusting pilot, Gil Freitas may have had his “head in the clouds,” but when it came time to change careers, his feet were firmly planted on the ground. Originally from Portugal, Gil developed an interest in flying at a young age, but due to a spinal condition he was not eligible to join the Portuguese Air Force as he had hoped. Undaunted and determined to fly, Gil moved to Brazil to fly in the Amazon and then began piloting crop-dusting planes in other areas of the country. Later, he joined his Brazilian friend in Memphis, Tennessee to help start a crop-dusting business, but his friend’s untimely death only two short months after his arrival caused Gil to re-think his plans. He decided to stay in the United States to learn English and took some computer classes. When a Cisco Networking Academy started at Mid-South Community College (MSCC) in nearby West Memphis, Arkansas, Gil enrolled and was soon on his way to a career in information communication technology (ICT).


Gil credits his flying experience with giving him an “aerial” perspective on how to advance along an ICT career path. He quickly recognized the value of having networking knowledge, which was a common requirement in many job descriptions, and that a Cisco certification was a “must have” for career advancement. While taking the Networking Academy classes at Mid-South, Gil further developed his technical skills by working as an ICT technician collaborating with others to set up the school’s network, all without the benefit of any prior networking experience.



“Gil says the Networking Academy experience gave him a strong foundation, and he is convinced that it was a major factor in his being offered the position of Director of Information Technology at East Arkansas Community College in Forrest City, Arkansas.”

Since that time, Gil has completed Cisco CCNA, Cisco CCNP, and Fundamentals of Network Security courses. Gil says the Networking Academy experience gave him a strong foundation, and he is convinced that it was a major factor in his being offered the position of Director of Information Technology at East Arkansas Community College in Forrest City, Arkansas. As Director of IT, Gil manages four staff members and is responsible for most ICT-related issues at the college. Despite working in an academic setting, Gil retains a practical orientation and would encourage prospective students to “maintain a working environment perspective and ask for real-world examples.”

Gil says his academy instructor Bill Vance encouraged and inspired students to learn, promoted teamwork as well as individual effort, and suggested that students bring in real-world situations. “Bill presented the lessons in an understandable way that encouraged beginning students to continue, and was always available for extra help,” says Gil. Although Gil has graduated, he keeps in touch with Bill and, as colleagues, they exchange experiences and information.



Bill says of Gil, “He is successful because he continues to expand his knowledge in IT by always looking for new solutions and reading about new methods of addressing issues. Gil understands that this career field is ever-changing and he is willing to adapt to new technologies as they develop.”

Gil is an insatiable lifelong learner. He is currently taking graduate-level courses in transport and logistics at Embry-Riddle Aeronautical University and, in his spare time, he is learning quantum physics and getting involved in green technologies and renewable resources. Gil attributes his success to persistence and a desire to learn. From Portugal to Brazil to the United States, Gil has worked hard, followed his passion, and creating his own opportunities. Even if his head was in the clouds, he planted his feet firmly in the Networking Academy, and once he was there his career in ICT took off.

Learn More

For additional information, impact stories, how you can get involved, and contacts in your area, visit our website: www.cisco.com/web/learning/netacad/us-can

Cisco, the Cisco logo, Cisco TelePresence, and Cisco Networking Academy are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. A listing of Cisco’s trademarks can be found at www.cisco.com/go/trademarks. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1009R)