



Cisco Networking Academy: Massachusetts Profile

Educating the Architects of the Networked Economy

Now in its second decade, Cisco® Networking Academy® has provided more than two million students worldwide with the information technology (IT) and networking skills necessary to compete in the 21st century global economy.

To prepare the Networking Academy for the decade ahead, Cisco has launched innovative new curricula including Cisco Certified Network Associate (CCNA®) Discovery and CCNA Exploration, as well as a new version of IT Essentials called PC Hardware and Software, and updates to the Cisco Certified Network Professional (CCNP®) curriculum. These new courses have been specifically designed to help students be more successful, whether they plan to be IT professionals or are simply seeking a deeper understanding of IT.

Our new courses align to industry certifications, including the recently launched Cisco Certified Entry-Level Technician (CCENT™). In addition to serving as an entry-level certification for employers, CCENT helps meet the new Carl D. Perkins Career and Technical Improvement Act funding requirements.

The new Networking Academy curricula provide seamless educational pathways between secondary and post-secondary institutions and are aligned to national and state education standards for math, science, and language arts. These courses can also help students prepare to pursue degrees related to science, technology, engineering, and math (STEM). In the United States, academies are located in high schools, technical schools, colleges, universities, and community-based organizations with more than 125,000 students enrolled at more than 2300 academies.[†]

As IT continues to be a high-demand job field in the United States, many educational institutions are incorporating IT into their offerings:

- Secondary schools are building pathways for students around the IT career cluster.
- Post-secondary institutions are integrating IT curriculum into degree programs ranging from computer science to networking to business.
- Community colleges and technical schools are providing existing workers with the opportunity to upgrade their skills, pursue additional education, and expand their expertise in technical fields.

Through its proven model of public-private partnerships with education, government, and business, Cisco Networking Academy is addressing the growing need for a pipeline of skilled IT professionals at a time when corporate technology leaders, public sector IT officials, and technology-service-oriented industries are concerned about the lack of a trained technical workforce to fill existing jobs.

[†] Source: AME/MRE FULL Package_10 31 07 Quarterly Metrics_v2 Date: November 28, 2007

An academy has a class currently in session or has taught a class, with at least 3 students, within the last 12 months.

A student is enrolled in a class or has taken a class within the last 12 months.

Learn More

Table 1 lists data about academies in Massachusetts. Table 2 lists information about Networking Academy curricula in Massachusetts, and Table 3 shows information by student education level.

For additional information about Cisco Networking Academy, visit <http://www.cisco.com/go/netacad>

Table 1. Cisco Networking Academy in Massachusetts

Networking Academy students	1579
Distinct cumulative academy students (having successfully completed a course)	3886
Academy instructors	58
Total estimated cumulative contribution value to Massachusetts academies*	\$2,865,322

Source: AME/MRE FULL Package_10 31 07 Quarterly Metrics_v2 Date: November 28, 2007

Cumulative students are distinct; therefore, each student is only counted once.

*This estimate includes donations and discounts made to educational institutions implementing Cisco Networking Academy within Massachusetts.

*Sources: AME/MRE reports 1209_190910.31.07 Date: November 30, 2007

Table 2. Networking Academy Curricula in Massachusetts

Curriculum	CCNA®	CCNP®	IT Essentials	Security	Wireless
Number of academies by curriculum	33	1	16	1	1

The above curricula represent the core Networking Academy curricula. Panduit Network Infrastructure Essentials, Java, and UNIX are also available.

Academies often teach multiple curricula and may be counted more than once in this table.

Source: AME/MRE rpt 3087 Date: December 5, 2007

Table 3. Massachusetts Academies and Students by Education Level

Education Level	Number of Massachusetts Academy Students	Percentage of Massachusetts Students	Number of Massachusetts Networking Academies	Percentage of Massachusetts Academies*
Secondary schools	1184	75%	30	81%
Community colleges	395	25%	7	19%
Universities	0	0%	0	0%
Other	0	0%	0	0%
Total by education level	1579	100%	37	100%

Source: AME/MRE FULL Package_10 31 07 Quarterly Metrics_v2 Date: November 28, 2007

Academies represented in "Other" category include the following: community-based organizations, middle schools, the military, nontraditional educational settings, and post-graduate institutions



Cisco Networking Academy: Workforce Development

If the United States is to remain competitive in this global economy, leading experts believe we must have a trained and educated workforce. And yet the number of U.S. students pursuing careers in science, technology, engineering and math—critical areas for educating the workforce of tomorrow—continues to decline.

Cisco Networking Academy addresses this gap by providing students with the skills needed to succeed in the wide range of careers available today and tomorrow. In addition to integrating IT skills, the Networking Academy also embeds math, science, and language arts skills in the curricula.

IT Occupational Data

Table 4 lists information about IT-related occupations in the U.S., and Table 5 lists this information for Massachusetts.

Table 4. Selected IT-Related Occupations in the United States

Occupation	Employment		Employment Change		Average Annual Openings	Occupational Employment as of May 2006*
	2004	2014	Numeric	Percent		
Computer Support Specialists	518,370	637,560	119,190	22	18,300	514,460
Computer Systems Analysts	486,550	639,500	152,960	31	20,800	446,460
Network and Computer Systems Administrators	278,380	385,250	106,870	38	13,770	289,520
Network Systems and Data Communications Analysts	231,270	357,460	126,190	54	15,340	203,710
Computer and Information Systems Managers	280,290	352,920	72,620	25	12,350	251,210

U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/oco/oco20024.htm>, based on data availability as of December 2007

*U.S. Department of Labor, Bureau of Labor Statistics, May 2006 State Occupational Employment and Wage Estimates (US), http://stat.bls.gov/oes/current/oes_nat.htm

Table 5. Selected IT-Related Occupations in Massachusetts

Occupation	Employment		Employment Change		Average Annual Openings	Occupational Employment as of May 2006^
	2004	2014	Numeric	Percent		
Computer Support Specialists	15,340	17,090	1750	11	360	16,610
Computer Systems Analysts	18,060	22,100	4030	22	610	13,650
Network and Computer Systems Administrators	8940	11,500	2560	28	360	9100
Network Systems and Data Communications Analysts	8230	11,770	3540	42	450	6360
Computer and Information Systems Managers	11,660	13,790	2130	18	430	10,130

U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/oco/oco20024.htm>, based on data availability as of December 2007

^ U.S. Department of Labor, Bureau of Labor Statistics, May 2006 State Occupational Employment and Wage Estimates (by state), <http://stat.bls.gov/oes/current/oesrcst.htm>



Massachusetts Student and Graduate Profile

As a high school student in Morocco, Hafid Benamara knew he wanted to move to the United States to attend college and pursue his passion for a career in information technology (IT). After graduating from high school in 1995, Hafid worked several years teaching French, Arabic, math, and science and eventually applied for lawful permanent residence (or a “green card”) in the United States. Once his application was approved, Hafid moved to the U.S. and, today, works at one of the fastest growing IT companies in the country.

Hafid learned about the Cisco® Networking Academy® while attending an information session for incoming students at Bunker Hill Community College (BHCC), located in the historic Charlestown neighborhood of Boston. Although he knew he wanted a career in IT, Hafid wasn’t sure “which way to go, or which field to specialize in.” After further investigation, Hafid concluded that Cisco certifications would be valuable in the job market and enrolled in the academy as part of his studies toward an associate’s degree in network technology. Looking back, Hafid says “The Networking Academy helped me decide where to go and what to study, as I was hesitating too much on what to choose.”

“Hafid has been a tremendous addition to our Command Center team. Thanks in part to his Networking Academy training, Hafid came to NWN with a solid understanding of networking fundamentals and quickly mastered a fast-paced and demanding role.”

Drew Phelps, Hafid’s supervisor at NWN

Hafid was constantly busy, working full-time at multiple jobs and carrying a full course load at the same time. In addition, based on a high GPA and desire to challenge himself further, Hafid applied to the Commonwealth Honors Program at BHCC, an elite program offering a select group of students the opportunity to develop an honors research project and present the results at the annual statewide conference. Hafid was one of only a handful of students in his graduating class selected to participate in the honors program.

Reflecting upon his experience with the Networking Academy, Hafid says “Everything was great. The labs were very challenging and a good test of your ability to apply your knowledge. You could evaluate yourself to see if you were learning the material. I loved working with the Cisco equipment and the instructors were great, too.”



Hafid attributes part of his success to an internship at NWN Corporation, to which he was referred by academy instructor Andrea Lyons. Only one month into the internship, he was hired as a full-time employee despite the fact that he hadn’t yet graduated from BHCC.

Nine months later, Hafid is still at NWN where he currently works as a command center engineer. He is responsible for monitoring, maintaining, and troubleshooting network infrastructures for client companies and finds that “almost everything I’ve learned in the Cisco program, I’ve been able to apply.” Hafid feels he is making a contribution and appreciates being viewed as a valued employee. Drew Phelps, Hafid’s supervisor at NWN, confirms Hafid’s contributions, saying, “Hafid has been a tremendous addition to our Command Center team. Thanks in part to his Networking Academy training, Hafid came to

NWN with a solid understanding of networking fundamentals and quickly mastered a fast-paced and demanding role. He proves his solid work ethic, skills, and technical acumen day after day as an engineer for NWN.”

On a personal level, Hafid attributes some of his success to the discipline, respect, and commitment he learned in the process of attaining a black belt in karate. He is hard working and dedicated to education and attaining his goals. “Commitment and passion are the keys to success,” says Hafid. “You have to love what you are doing and be committed to it.” This belief is reflected in his advice to others who may be interested in the Networking Academy: “Have passion for what you’re doing and be committed. That’s all it takes.”

Only one month into the internship, Hafid was hired as a full-time employee despite the fact that he hadn’t yet graduated from BHCC.

Hafid has earned his Cisco Certified Network Associate (CCNA®), Planet 3 CWNA, and Microsoft MCP certifications. He plans to specialize in networking security and has already started studying for the Cisco Certified Security Professional (CCSP®) certification. Hafid’s night shift job at NWN enables him to enjoy his daytime interests outside of technology: traveling, exploring the outdoors, and “discovering the natural world.” He’s also an avid reader, especially in the areas of behavioral science and psychology. “Life is all about learning!” Hafid concludes enthusiastically.

For more information on the Networking Academy at BHCC, visit: <http://www.bhcc.mass.edu/>



Active Cisco Networking Academies in Massachusetts

U.S. Congressional District Database

Data for this report was gathered using the U.S. Congressional District Database. This tool was developed to communicate with congressional representatives about Cisco Networking Academy implementation in their home districts. The database maps actively teaching academies by congressional district or by all districts within a state, providing academy name, city, state, and congressional district. The listing by state is updated annually.

Table 6 lists information about academies in Massachusetts congressional districts. Custom reports by congressional districts may be run upon request by contacting Melody Buchanan at Melody.Buchanan@ciscolearning.org.

Table 6. Networking Academies in Massachusetts Congressional Districts

Number of Massachusetts Congressional Districts	Number of Massachusetts Congressional Districts <u>with</u> Networking Academies	Number of Massachusetts Congressional Districts <u>without</u> Networking Academies	% Massachusetts Congressional District Penetration
10	10	0	100%

Academies listed here have taught a class, with at least one student, within the last six months

Source: MRE/Academy Connection, U.S. Congressional District Database Date: January 3, 2008

Active Massachusetts Cisco Networking Academies by Congressional District

* Indicates Cisco Networking Academy Training Center

Academies listed here have taught a class, with at least one student, within the last six months

Source: MRE/Academy Connection, U.S. Congressional District Database Date: December 31, 2007

Congressional District 1

- *Berkshire Community College (Pittsfield)
- Lee High School (Lee)
- McCann Voc/Tech School (North Adams)
- Montachusett Regional Vocational Technical School (Fitchburg)
- Monument Mt. Regional High School (Great Barrington)
- *Mount Wachusett Community College (Gardner)
- Career and Technical Education Center (West Springfield)
- Westfield Vocational High School (Westfield)

Congressional District 2

- Chicopee Comprehensive Vocational Technical High School (Chicopee)

- Public Schools of Springfield (Springfield)
- Roger L. Putnam Vocational Technical High School (Springfield)
- *Springfield Technical Community College (Springfield)

Congressional District 3

- Attleboro High School (Attleboro)
- *Tri-County Regional Vocational Technical High Scho (Franklin)
- Worcester Vocational High School (Worcester)

Congressional District 4

- Bristol Plymouth RVTHS (Taunton)

Congressional District 5

- Lowell High School (Lowell)

- Acton-Boxborough Regional High School (Acton)
- Greater Lawrence Technical High School (Andover)
- Methuen High School (Methuen)
- Middlesex Community College (Lowell)

Congressional District 6

- Gloucester High School (Gloucester)
- Hamilton-Wenham Regional High School (South Hamilton)
- Lynn English High School (Lynn)
- *North Shore Community College (Danvers)
- North Shore Technical High School (Middleton)
- Peabody Veterans Memorial High School (Peabody)

Congressional District 7

- Joseph P Keefe Technical School (Framingham)

Congressional District 8

- *Bunker Hill Community College (Boston)
- *Charlestown High School (Charlestown)
- Chelsea High School (Chelsea)
- John D. O'Bryant high School of Mathematics and Science (Roxbury)
- Madison Park HS (Roxbury Crossing)
- Network Technology Academy (Somerville)

Congressional District 9

- Blue Hills Technical High School (Canton)
- Brockton High School (Brockton)

Congressional District 10

- Upper Cape Cod Regional Technical School (Bourne)



Cisco Networking Academy: Promoting IT Careers

Technology jobs will not only continue to grow, but the role of information technology (IT) workers will continue to evolve since today nearly every company in every industry relies on IT. The skills learned through Cisco Networking Academy lay a critical foundation for almost any profession, even non-IT careers. Networking Academy graduates not only build careers, but also help build businesses, communities, and countries.

If the United States is to remain competitive and continue to innovate in a global economy, we must foster student interest in pursuing technology- and engineering-related careers. A critical strategy in building a technical workforce for the 21st century is the development of seamless programs like Networking Academy that build pathways between secondary and post-secondary institutions and lead to professional career development.

Through the Cisco Promoting IT Careers initiatives, students are introduced to potential careers in IT and networking and given valuable information about pathways to advanced education, certification, and careers.

Visit the Promoting IT Careers Website, <http://www.cisco.com/go/promoteitcareers>, which is dedicated to the following:

- Increasing awareness and interest in opportunities in IT and networking
- Creating interest in IT and networking as a profession
- Helping students establish career goals
- Providing tools and resources to support success as students pursue IT careers
- Creating opportunities for students and graduates to transition from classroom to careers

Five Ways to Promote IT Careers

The following events and activities engage students at all levels of experience. Valuable tools and resources for each event are available through the Promoting IT Careers Website.

1. Host Your Own All Academy Day

All Academy Day is a competition that gives students the chance to show off the skills they have learned in the Networking Academy and to explore career pathways by interacting with IT professionals. Teams of students participate in a series of hands-on events selected from the following options: cable making, component identification, computer building, home networking, quiz bowl, router configuration, TAC/professionalism, and virtual computers. For more information, visit: <http://www.cisco.com/go/allacademyday>

2. Help Students See Your Shadow

Job shadowing can be an important first step in pointing students toward IT careers. You can put on a full **Job Shadow Day** or offer an event as simple as a guest speaker in your classroom. Hearing first-hand about the world of work from IT professionals helps students relate their classroom experiences to the workplace and can inspire students to pursue careers in math, science, and technology. For more information, visit: <http://www.cisco.com/go/jobshadow>

3. Introduce Young Students to the World of IT

Packetville is a public e-learning portal filled with interactive and educational resources for introducing students aged 8 to 14 to the world of IT. Lesson plans, which are aligned with the standards of the International Society for Technology in Education, include community service projects and career exploration. For more information, visit:

<http://www.cisco.com/go/packetville>

4. Connect Students with Employers

The Networking Academy is connecting Networking Academy alumni with employers through the Career Connection job board. For more information, visit: <http://cc.netacad.net/home.do>

5. Explore the Landscape of IT

This series of **Virtual Field Trips** helps Networking Academy students and instructors explore and understand the landscape of IT and prepare for networking careers, all without leaving the classroom. Designed to engage students early on in their Networking Academy experience, the videos cover a range of topics that encourage students to continue their education and begin early to build their career path. A companion module that accompanies each video reinforces the content from the video. For more information, visit: <http://www.cisco.com/go/virtualfieldtrip>

Learn More about IT and Networking Careers

- Certification Magazine, “Hot Jobs & Skills for 2007”
http://www.certmag.com/articles/templates/CM_gen_Article_template.asp?articleid=2521&zoneid=1
- CNNMoney.com, “Skilled Worker Shortage Hurts U.S.”
http://money.cnn.com/2007/01/04/news/economy/jobs_outlook/index.htm
- Job Data Resources
 - U.S. Department of Labor Bureau of Labor Statistics, Occupational Employment Statistics
<http://data.bls.gov/oes/search.jsp>
 - State-Level Job Projections
<http://www.projectionscentral.com>
- John Chambers on the role of technology in education
http://www.forbes.com/opinions/2008/01/23/solutions-education-chambers-oped-cx_sli_0123chambers.html
- “The Quiet Crisis,” Shirley Ann Jackson, Ph.D.; President, Rensselaer Polytechnic Institute
<http://www.rpi.edu/homepage/quietcrisis/>



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