



Cisco Networking Academy: Montana 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 Montana. Table 2 lists information about Networking Academy curricula in Montana, 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 Montana

Networking Academy students	742
Distinct cumulative academy students (having successfully completed a course)	3963
Academy instructors	39
Total estimated cumulative contribution value to Montana academies*	\$3,035,769

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 Montana.

*Sources: AME/MRE reports 1212_191010.31.07 Date: November 30, 2007

Table 2. Networking Academy Curricula in Montana

Curriculum	CCNA®	CCNP®	IT Essentials	Security	Wireless
Number of academies by curriculum	25	3	8	1	2

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. Montana Academies and Students by Education Level

Education Level	Number of Montana Academy Students	Percentage of Montana Students	Number of Montana Networking Academies	Percentage of Montana Academies*
Secondary schools	252	34%	17	62%
Community colleges	326	44%	7	27%
Universities	163	22%	3	12%
Other	0	0%	0	0%
Total by education level	742	100%	27	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 United States, and Table 5 lists this information for Montana.

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 Montana

Occupation	Employment		Employment Change		Average Annual Openings	Occupational Employment as of May 2006 [^]
	2004	2014	Numeric	Percent		
Computer Support Specialists	1310	1610	300	22	50	1290
Computer Systems Analysts	1200	1550	350	29	50	830
Network and Computer Systems Administrators	540	720	180	33	20	780
Network Systems and Data Communications Analysts	570	800	240	41	30	480
Computer and Information Systems Managers	410	520	120	28	20	300

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>



Montana Student and Graduate Profile

After working in the Antarctic for 11 years providing logistical support to research scientists, Sarah Gundlach was ready to master something new. When she returned home to Frenchtown, Montana, Sarah completed several courses at a local technical college. One of these was a one-week program on routers and switches during which she learned about the Cisco® Networking Academy® and Cisco certifications. She was so interested in the material that after the one-week course, she actually tried to pass the Cisco Certified Network Associate (CCNA®) exam. “Imagine my score after one week” says Sarah. Nevertheless, she was hooked and soon enrolled in the Networking Academy at the University of Montana at Missoula. Two years later, Sarah took the exam again, passed, and earned her CCNA certification.

Sarah credits her successful experience in the Networking Academy to her instructors, the text books, the online curriculum, and the hands-on lab experience. “They were all important factors” says Sarah. The labs enabled her to practice router and switch configurations and the books were so valuable that she would often get up at 4a.m. to read and study.

Sometimes getting to class in Frenchtown, which is located in the rugged Montana countryside, could be challenging. The eight miles of unmaintained dirt road could be icy or impassable due to snow or fallen trees. Sarah put her experiences living in Greenland and the Antarctic to good use and ensured she arrived for classes on time.

When she was enrolled at the Networking Academy, Sarah was living in a small solar-powered cabin, without running water, that she built herself. She was also running her 160-acre farm and working as an independent technology contractor providing local area network support to small local businesses.

Sarah insists that her academy instructors, Penny Jakes and Rhonda Tabish, kept her focused. “Penny is a very good teacher,” says Sarah “she kept in touch with each person to see what they were going through. Penny must have seen something in me and knew I could do better.”

It must have been apparent to her instructors that Sarah was capable of some pretty extraordinary things. When she was enrolled at the Networking Academy, Sarah was living in a small solar-powered cabin, without running water, that she built herself. She was also running her 160-acre farm and working as an independent technology contractor providing local area network support to small local businesses. She did all this after beating kidney cancer in 2003. Clearly, Sarah’s positive attitude, dedication, and strong work ethic were factors in her success.



Now that she’s earned her CCNA certification, Sarah is searching for her dream job as a networking professional and is eager to work as part of an information technology team. “The Networking Academy has provided a very strong background” asserts Sarah. During interviews, Sarah is pleased to be able say that she has actually used the equipment in a lab environment instead of just having simulator experience. Her future plans include becoming a network engineer with Cisco Certified Network Professional (CCNP®) credentials, potentially specializing in VoIP.

When asked what she enjoyed most about the Networking Academy, Sarah replies “the challenge...it was definitely the longest time I ever studied and focused on earning a certification. Passing the CCNA exam was the reward for the hard work.”

During interviews, Sarah is pleased to be able say that she has actually used the equipment in a lab environment instead of just having simulator experience.

Her advice to others who are interested in the Networking Academy is “stay dedicated to it and don’t stray.” In addition, she suggests “learn the material, don’t just memorize it. Don’t get discouraged ... keep at it, and practice, practice, practice.”

For more information on the Networking Academy at the University of Montana, visit: www.mso.umt.edu



Active Cisco Networking Academies in Montana

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 active 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 Montana 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 Montana Congressional Districts

Number of Montana Congressional Districts	Number of Montana Congressional Districts <u>with</u> Networking Academies	Number of Montana Congressional Districts <u>without</u> Networking Academies	% Montana Congressional District Penetration
1	1	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 Montana 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 – At Large

- Belgrade High School (Belgrade)
- Belt (Belt)
- BFCC (Browning)
- Billings Career Center (Billings)
- Bozeman High School (Bozeman)
- Butte High School (Butte)
- Browning High School (Browning)
- CMR High School (Great Falls)
- Central Montana Cisco Academy (Lewistown)
- Fort Benton (Fort Benton)
- Great Falls High (Great Falls)
- Helena High School (Helena)
- Libby (Libby)
- Manhattan High School (Manhattan)

- Miles Community College (Miles City)
- *Montana State University - Billings Cot (Billings)
- *Montana State University - Great Falls (Great Falls)
- *Montana Tech of the University of Montana (Butte)
- Sentinel High School (Missoula)
- Sunburst High School (Sunburst)
- Troy High School (Troy)
- UM College of Technology (Missoula)
- University of Montana-Helena- Local/Regional (Helena)
- *University of Montana-Missoula (Missoula)
- Victor High School (Victor)
- Whitehall High School (Whitehall)



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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