



## Cisco Networking Academy: North Dakota 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.<sup>†</sup>

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.

<sup>†</sup> 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 North Dakota. Table 2 lists information about Networking Academy curricula in North Dakota, 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 North Dakota

<b>Networking Academy students</b>	1077
<b>Distinct cumulative academy students (having successfully completed a course)</b>	3356
<b>Academy instructors</b>	48
<b>Total estimated cumulative contribution value to North Dakota academies*</b>	\$2,397,258

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 North Dakota.

\*Sources: AME/MRE reports 1211\_190710.31.07 Date: November 30, 2007

**Table 2.** Networking Academy Curricula in North Dakota

<b>Curriculum</b>	<b>CCNA®</b>	<b>CCNP®</b>	<b>IT Essentials</b>	<b>Security</b>	<b>Wireless</b>
<b>Number of academies by curriculum</b>	19	0	26	0	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.** North Dakota Academies and Students by Education Level

<b>Education Level</b>	<b>Number of North Dakota Academy Students</b>	<b>Percentage of North Dakota Students</b>	<b>Number of North Dakota Networking Academies</b>	<b>Percentage of North Dakota Academies*</b>
<b>Secondary schools</b>	625	58%	26	71%
<b>Community colleges</b>	409	38%	9	26%
<b>Universities</b>	54	5%	1	3%
<b>Other</b>	0	0%	0	0%
<b>Total by education level</b>	1077	100%	36	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 North Dakota.

**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](http://stat.bls.gov/oes/current/oes_nat.htm)

**Table 5.** Selected IT-Related Occupations in North Dakota

Occupation	Employment		Employment Change		Average Annual Openings	Occupational Employment as of May 2006 <sup>^</sup>
	2004	2014	Numeric	Percent		
Computer Support Specialists	990	1210	220	22	30	930
Computer Systems Analysts	630	790	160	26	20	770
Network and Computer Systems Administrators	540	690	150	27	20	510
Network Systems and Data Communications Analysts	290	420	140	48	20	350
Computer and Information Systems Managers	590	710	120	19	20	470

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

<sup>^</sup>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/oesncst.htm>





## North Dakota Student and Graduate Profile

In 1998, Cole Arndt was enrolled in pre-med courses at Williston State College in North Dakota when the school began offering the Cisco® Networking Academy®. His plans on becoming a medical doctor changed after taking a computer class with instructor Ken Quamme. “Ken has a way of enticing you enough to lure you in and make you want to learn more.” Cole became one of the first students at the school to take the Networking Academy’s Cisco Certified Network Associate (CCNA®) course and receive his CCNA certification. He currently works full time at HealthNet LLC as a technical analyst. “If it weren’t for the Networking Academy, I wouldn’t be where I am at today. It has opened the doors for me in many ways.”

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### Cole Arndt

As part of his degree program, Cole was required to complete an internship each semester. He assisted in teaching Semester 2 of the CCNA class and also helped managed the technology lab. “Cole was instrumental in assisting in the lab and Cisco class at a time that was very critical to the college,” says Ken. “The program was new to our college, and the only other instructor trained in the curricula was called for military duty in between semesters. I didn’t panic... I just went to Cole, who was an excellent student, and I asked if he would be willing to assist with the CCNA course and labs. His involvement benefited the students, the college, myself, and I believe it gave Cole a great experience in presenting to a group and helping one-on-one.”

During his third semester, Cole’s academy class was given the opportunity to design and wire a new training facility that was added to the college campus. He says these experiences helped to reinforce his learning and provided plenty of hands-on learning. By 2000, Cole had completed his courses at the Networking Academy, obtained his CCNA certification, and graduated from Williston State College with an associate’s degree in applied science.

In 2001, Cole decided to pursue a bachelor’s degree in applied science at Minot State. Soon after beginning classes, he was hired at HealthNet, LLC, where he is currently employed. Due to his work schedule and the responsibilities that come with a growing family, Cole decided to complete his courses online. “My experience in Internet-based coursework offered by the Networking Academy classes helped me settle right into my classes at Minot State.” Cole graduated from Minot State with a bachelor’s degree in management information systems in 2004.

As a technical analyst with HealthNet, Cole is responsible for managing the installation of an electronic medical record project into three of the four clinics the company services. In addition, he oversees the data center and associated hardware that is used to connect the three remote sites to the center. “The knowledge of Cisco hardware has helped me greatly since our core routers and switches are Cisco products. The methodology that I learned throughout the Networking Academy has helped in troubleshooting problems from network connectivity to programming to working out processes.”

Cole is considering pursuing his master’s degree and has plans to renew his CCNA certification and then complete the Cisco Certified Network Professional (CCNP®) certification.

For additional information on the Networking Academy at Williston State College, visit: <http://www.wsc.nodak.edu/>





## Active Cisco Networking Academies in North Dakota

### 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 North Dakota congressional districts. Custom reports by congressional districts may be run upon request by contacting Melody Buchanan at [Melody.Buchanan@ciscolearning.org](mailto:Melody.Buchanan@ciscolearning.org).

**Table 6.** Networking Academies in North Dakota Congressional Districts

Number of North Dakota Congressional Districts	Number of North Dakota Congressional Districts <u>with</u> Networking Academies	Number of North Dakota Congressional Districts <u>without</u> Networking Academies	% North Dakota 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 North Dakota 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

- Beulah (Beulah)
- Bismarck State College (Bismarck)
- McClusky Public Schools (McClusky)
- Hazen High School (Hazen)
- Center / Stanton Public School (Center)
- Fargo South High School (Fargo)
- Fort Berthold Community College (New Town)
- Harvey Public Schools (Harvey)
- Grand Forks Red River (Grand Forks)
- Hatton Public School (Hatton)
- James Valley Area Career and Technology Center (Jamestown)
- \*Lake Region State College/Lake Area Vo-Tech (Devils Lake)
- Lamoure Public School (Lamoure)
- Leeds Public School (Leeds)

- Mandan High School (Mandan)
- Midkota High School (Glenfield)
- Minot Public Schools (Minot)
- Minot Public Schools (Minot)
- Minot State University-Bottineau (Bottineau)
- Mott High School (Mott)
- Cavalier High School (Cavalier)
- Williston High School (Williston)
- \*North Dakota Career and Technical Education (Bismarck)
- North Dakota State College of Science (Wahpeton)
- Oakes High School (Oakes)
- Scranton Public School (Scranton)
- Sitting Bull College (Fort Yates)
- Skills & Technology Training Center (Fargo)
- UND (Grand Forks)
- Southeast Area Vocational Technical Center (Oakes)
- New Rockford Public School (New Rockford)
- Turtle Mountain Community College (Belcourt)
- United Tribes Technical College (Bismarck)
- Valley City Vocational Center (Valley City)
- \*Williston State College (Williston)



## 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](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](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](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/>



**Americas Headquarters**  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
[www.cisco.com](http://www.cisco.com)  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 527-0883

**Asia Pacific Headquarters**  
Cisco Systems (USA) Pte. Ltd.  
168 Robinson Road  
#28-01 Capital Tower  
Singapore 068912  
[www.cisco.com](http://www.cisco.com)  
Tel: +65 6317 7777  
Fax: +65 6317 7799

**Europe Headquarters**  
Cisco Systems International BV  
Haarlerbergpark  
Haarlerbergweg 13-19  
1101 CH Amsterdam  
The Netherlands  
[www-europe.cisco.com](http://www-europe.cisco.com)  
Tel: +31 0 800 020 0791  
Fax: +31 0 20 357 1100

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