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A PROPOSAL FOR
Computer Information Systems program
Computer Security Option



LAKE AREA
TECHNICAL INSTITUTE

Executive Summary

Lake Area Technical Institute is proposing the expansion of the Computer Information Systems (CIS) program into a fifth option, Security Specialist. In addition, for the sake of clarity and consistency, we are requesting that the current “Web Development Specialist” option be renamed “Web Specialist”, and that the “Network/Cisco Specialist” option title be shortened to “Cisco Specialist.” The five options in the CIS program would then be: Network Specialist, CISCO Specialist, Programming Specialist, Web Specialist, and Security Specialist.

Identification and Description of the New Option

Our 20-month CIS program provides students with the knowledge, understanding, and skills to be employed in the field of computers. All five options—including the new Security Specialist option— share a common first semester. The purpose of this common semester is to instill foundational knowledge, as well as expose students to the curriculum content of all five options. After the common semester, students can customize their course selection to meet the graduation requirements for the option of their choice.

The Security Specialist Option will add two security courses to the three security courses already contained in the CIS curriculum. The current CIS security courses are:

- **Cyber Security/Ethical Hacking:** Hands-on course introducing students to various aspects of network security. Students will acquire the skills necessary to perform and prevent network intrusions on a variety of different computing platforms.
- **Computer Crime Investigation:** Students will learn the policies, procedures, and technology to gather and analyze digital information in an authentic, accurate and complete form for presentation as evidence in a business environment or, with proper credentials, a court of law.
- **CCNA Security:** Provides a next step for individuals who want to enhance their CCNA-level skill set and help meet the growing demand for network security professionals.

The new security courses are:

- **Server Security:** Students learn how to implement and manage a secure environment for networked Windows servers and Windows 7 users—using some of the 6000+ group policy settings available.
- **Advanced Security Topics:** Students will investigate multiple new security techniques.

Objectives and Purpose of the New Option

The primary objective of the Computer Information Systems program is to graduate students with the necessary skills to be employed. Objectives for the program option Security Specialist will include the following:

- Identify security threats to network infrastructure, servers and users.
- Provide students with preventive maintenance skills to avoid security threats.
- Develop skills needed to create and enforce written security policies.
- Provide students with the knowledge to eliminate discovered security threats.

- Train students to collect and analyze network data to increase efficiency and reduce possible threats.
- Provide students with the skills to educate their users.
- Prevent network intrusions on a variety of different computing platforms.
- Develop the policies, procedures, and technology to gather and analyze digital information.

The primary purpose of this program will continue to be to meet the employment and training needs of the students and business employers in our region.

Methods of Attaining the Objectives of the Program

The CIS program consists of two major components: technical theoretical training and practical experience gained through utilization of technology, classroom labs/activities and the internship. The curriculum for the new Security Specialist option will utilize the core aspects of the current CIS program. New curriculum specific to Security Specialist will be developed. New curriculum will utilize the services of the Innovation Center and Industry to infuse the delivery with cutting-edge technology. Security Specialist curriculum will be developed in an eLearning context for eventual hybrid on-line delivery.

Furthermore, the CIS program will continue to enlist the help of their advisory board, composed of representatives from the computer industry. One security expert is already serving on the board, and another board member with this specialty will be added. In addition to the initial approval of a Security Specialist Option—which was given on September 21, 2010—the advisory board will provide continual input to assist with curriculum development, facilitate the establishment of internship sites, and assist with marketing strategies to promote the program.

Description of the Needs Based on Labor Market Demands in the United States and South Dakota

LATI has been in discussion with industry in the region about the need for employees with the skill set identified in the expanded CIS option, Security Specialist. With the increasing complexity of computer systems and the nature of our society, all computer curriculum requires an emphasis on cyber security. Students who pursue this option will have an additional level of skill in computer security, to utilize in a wide variety of job settings.

According to the Bureau of Labor Statistics, employment in the computer systems business:

“is expected to grow much faster than the average, and job prospects should be excellent. Overall employment of individuals with this skill set is projected to increase by 30 percent from 2008 to 2018, much faster than the average for all occupations. In addition, this occupation will add 286,600 new jobs over that period” (<http://www.bls.gov/oco/ocos305.htm>)

Population to be Served by the Program

The expanded options of the CIS program will be available to any applicant who has successfully met the admission standards for the program as set by LATI. The program will be offered on a full or part time

basis. No restriction will be made regarding race, age, creed or gender. The program will draw students primarily from South Dakota and western Minnesota. The employers served will fall within the same geographical area.

Recruiting efforts will include venues and methods to attract traditionally-aged students, as well as non-traditional individuals seeking a career change. All five CIS options will also be offered in an online hybrid version, which will appeal to those potential students whose economic and/or personal situation requires them to remain employed and/or living in their current remote location.

Projected Three Year Budget

The expanded and renamed options will be located in the current CIS facilities on the Lake Area Tech campus. The program will also utilize the facilities of various industry partners in and around Watertown. Access to the technical expertise of the current CIS instructors, along with hiring field-experienced adjunct instructors, will provide the students with tremendous resources.

New adjunct instructors will have a minimum of three years of professional work experience in the computer industry, with additional experience in cyber security. Enrollment for the new option would be limited to 22 students the first year.

THREE YEAR PROJECTED BUDGET

	FY 11	FY 12	FY13
Adjunct Instructors	\$0	\$6000	\$6000
Supplies	\$0	\$2000	\$2000
Equipment	\$0	\$5000	\$0
Totals:	\$0	\$13, 000	\$8,000

Program Option Competencies and Entry and Exit Points of Suboccupations

Entry Points: Fall and Spring Semester

Exit Point: After completion of all coursework

Expanded Option Job Titles: Include (but are not limited to): Security Specialist, Network Specialist, Network Administrator, IT Technician.

Statement of Nonduplication

LATI is requesting two program-option name changes and the approval for an additional option under an existing program. A similar version of Security Specialist is offered a Southeast Technical Institute. STI President Holcomb does not feel adding this option to LATI's Computer

Information Systems program will diminish any interest in Southeast Technical Institute's program.

Curriculum Design

See Appendix A for Curriculum Outline

Wage Factor

Our Security Specialist option would fall under the "network systems and data communication analysts" category. According to the Bureau of Labor Statistics, technicians in this field earned an average yearly income of \$71,100 in May 2008. The middle 50 percent earned between \$54,330 and \$90,740. The lowest 10 percent earned less than \$41,660, and the highest 10 percent earned more than \$110,920.

For more detailed information visit http://www.bls.gov/oco/ocos305.htm#oes_links.

CIS graduates from LATI have historically been very successful. Our most recent placement reports indicate that the class of 2009 is earning a wage range of \$15.88-\$29.08. They are earning an average hourly salary of \$20.92.

Suggested CIP code:

This is an existing program and LATI is recommending we retain our current CIP code of 11.0201 Computer Information Systems.

Appendix A

Computer Information Systems Security Specialist Option



Semester Outline

20 Months Credits Required for Graduation: 76
Associate of Applied Science (A.A.S.) Degree

2011 - 2012 Revised: 12/10

Fall Semester - 2011

Course Number	Course Title	Clock Hours	Credits
CIS 100	PC Maintenance	84	3
NET 101	Network Cabling	48	3
NET 115	Networking Fundamentals	84	3
• EN 110 ENGL 101	Communications Elective (Choose 1)	48	3
• COMM 101 SPCM 101	Communications Elective (Choose 1)	48	3
CIS Elective CIS 132 CIS 140 CIS 141	Intro to Computer Programming Database Design and SQL Web Design and Maintenance	84	3
Totals		396	18

Spring Semester - 2012

Course Number	Course Title	Clock Hours	Credits
CIS 160	UNIX Operating System	84	3
CIS 200	Advanced PC Maintenance A+ Certification	84	3
CIS 280	Windows Server Administration	84	3
NET 111	Networking for Home and Small Business	84	3
NET 121	Routing Protocols and Concepts	84	3
AED 100	Automated External Defibrillator	14	.5
• ECON 105 ECON 201 SOC 100	Social Science Elective (Choose 1)	48	3
Totals		482	18.5

Summer Session - 2012

Course Number	Course Title	Clock Hours	Credits
NET 131	LAN Switching and Wireless	80	3
NET 141	Accessing the WAN	80	3
Totals		160	6

Fall Semester - 2012

Course Number	Course Title	Clock Hours	Credits
CIS 215	Cyber Security and Ethical Hacking	84	3
CIS 260	UNIX OS Administration	84	3
CIS 285	Server Security	84	3
NET 215	CCNA Security	84	3
AC 100	Applied Communications	14	.5
• MATH 100 MATH 101 MATH 102	Math Elective (Choose 1)	48	3
• PSYC 100 PSYC 101	Behavioral Science Elective (Choose 1)	48	3
Totals		446	18.5

Spring Semester - 2013

Course Number	Course Title	Clock Hours	Credits
CIS 235	Computer Crime Investigation	84	3
CIS 245	Advanced Security Topics	84	3
CIS 265	Virtualization	84	3

CIS 290	System Analysis and Design	84	3
CIS 298	Internship	180	3
Totals		516	15

- **Choose from the following courses: (EN 110, MATH 100, MATH 101, and ECON 105 are not transferable.)**

In the Communications Electives: Choose EN 110 or ENGL 101 and COMM 101 or SPCM 101

Behavioral Science Electives (Choose 1)

PSYC 100 – Human Relations
 PSYC 101 – General Psychology

Communications Electives (Choose 2)

EN 110 – Business Communications
 ENGL 101 – Composition
 COMM 101 – Contemporary Communication
 SPCM 101 – Fundamentals of Speech

Math Electives (Choose 1)

MATH 100 – Applied General Math
 MATH 101 – Intermediate Algebra
 MATH 102 – College Algebra

Social Science Electives (Choose 1)

ECON 105 – Leadership in the Global Workplace
 ECON 201 – Principles of Microeconomics I
 SOC 100 – Introduction to Sociology

Letters of Recommendation

On the following three pages please see (3) attached letters of recommendation.

December 16, 2010
Deb Shephard
President
Lake Area Technical Institute
Watertown, SD

Dear Mrs. Shephard,

With growing demands on IT departments and heightened focus on blurred boundary computing technologies such as cloud computing, virtualization and Social Networking, it is more vital than ever that IT professionals have a solid grounding in best practice computing security practices. An IT security option at LATI would provide students with the security fundamentals beneficial to organizations for whom they worked, and communities within which they live. Supplemental to that, a focus on IT security drives a pervasive perspective of ethics in IT that transcends technology, to contribute to all other aspects of graduate's business and professional relationships.

Ryan Wells
Information Systems Manager
Angus Industries



Data Truck LLC
420 4th St. NE #133
Watertown, SD 57201

Need Internet? We Deliver!

Don Armstrong
CIS Department Head
Lake Area Technical Institute
Watertown, SD 57201

December 15th, 2010

Dear Don:

Today's IT professional needs a strong background in security. Computer systems, networking, and Internet access have all become necessary elements of success in today's business world. Talented IT professionals are required to support these valuable systems and maintain the safety and integrity of technology.

With the ever-increasing cyber-security threats of today, security should be a fundamental part of every decision made in the IT world. A desirable IT professional should receive training in computer, network, and server security; also forensics, threat detection and prevention, and the social aspect of cyber-security. I believe it would be beneficial for your students to be trained in these areas.

Sincerely,

Kevin M. Harrington
General Manager



As our company continues to offer more services online as well as move toward the digitization of current and past records, the importance of network security increases constantly. Protecting our propriety business interests internally and externally along with preserving our customer's privacy is an utmost concern for us. For these reasons and many others I believe that adding a security background to an applicants resume would definitely increase their desirability as an employee.

Best Regards
Jason Julius

"Insert Legal Entity (e.g. Terex Corporation)"

"Insert Legal Entity Address 1"

"Insert Legal Entity Address 2"

Tel "Insert Legal Entity Phone (e.g. +1 203 222 7170)"

Fax "Insert Legal Entity Fax (e.g. +1 203 222 6159)"

"Insert web address (e.g. www.terex.com)"

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