NCAE Components

Manhattan Area Technical College is a leader in information assurance education in the area of curriculum development and faculty training in the State of Kansas. MATC works to foster and create opportunities for interdisciplinary activities, continues to develop and support both credit and continuing education academic programs and serves as a link between the academic and professional communities.

Goals and Objectives

• Provide the necessary resources and motivation to enable college students to become effective professionals in the ever-increasing cyber-enabled economy
• Assist students in job placement and career planning
• Improve the cyber security posture of the college so its constituents can fully benefit from the ongoing cyber revolution
• Build relationships and develop partnerships with other institutions of higher education, government organizations, and the business community to facilitate solutions to the growing need for a qualified Information Assurance (IA) workforce
• Raise awareness regarding security issues within MATC, the community, and the state.

1a. Shared Curriculum

Manhattan Area Technical College has been a member of the Cyber Security Education Consortium (CSEC) since 2008. Cyber Security curricula are shared among all member institutions. A link to the consortium page showing member schools can be found at [http://www.cseconline.net/](http://www.cseconline.net/). Manhattan Area Technical College, through CSEC, currently works with numerous 2-year colleges in Arkansas, Colorado, Kansas, Louisiana, Missouri, Oklahoma, Tennessee, and Texas.

The following is a list of CSEC partner colleges:

• Arapahoe Community College
• Arkansas State University
• Bossier Parish Community College
• Butler Community College
• Capital Area Technical College
• Central Louisiana Technical College at Ferriday
• Cleveland State Community College
• Collins College
• Columbia State Community College
• Dodge City Community College
• Dyersburg State Community College
• Hutchinson Community College
• Jackson State Community College
• Johnson County Community College
• Kansas City Kansas Community College
• Louisiana Technical College - Shreveport
• Louisiana Technical College - Sullivan
• Manhattan Area Technical College
• Metropolitan Community College
• Nashville State Community College
• Northeast State Community College
• Northwest Arkansas Community College
• Oklahoma Career and Technology Education System
• Oklahoma City Community College
• Oklahoma State University - Information Technology Center
• Pensacola State College
• Pellissippi State Technical Community College
• Pueblo Community College
• Pulaski Technical College
Manhattan Area Technical College has also partnered with the Center for Systems Security and Information Assurance (CSSIA) and CyberWatch. The partnership has resulted in sharing and developing courseware, faculty development workshop instruction, and instructional resource sharing and development through virtualization. For example, CSSIA recently developed a curriculum and labs for the CNSS 4011 standard. This course was developed using NDG’s NetLab platform, which allows remote access to the 4011 course lab material. CSEC adopted the NetLab platform in summer 2011 to build courses that could be remotely accessed, thus providing a means for learners to access courses from anywhere. Manhattan Area Technical College accesses this lab through NETLAB, which is housed at the Rose State College campus.

Manhattan Area Technical College has committed to providing assistance in curriculum development for Kansas State University, a CAE-R university, in the area of cyber security. This partnership is part of a NSF SFS program. (See Kansas State University letters, NSF KSU Letter 1 and NSF KSU Letter 2.)

**Shared Faculty**

Manhattan Area Technical College assists in curriculum development as part of the Cyber Security Education Consortium (CSEC), and curricula are developed and shared among institutions. Manhattan Area Technical College is currently the lead CSEC institution in Kansas and is guiding the development of a mobile device management and security course. Program faculty from our institution serve as instructors for training opportunities provided in Kansas through the CSEC network. Faculty facilitated two “teach-the-teacher” classes each year during the 2010-2011 and 2011-2012 academic years.

Networking faculty prepared and hosted a Kansas Council for Workforce Education (KCWE) “Drive-In” session entitled “Drive-In Symposium for Information Technology Instructors.” The objective for the session was to gather with peers from across Kansas in a casual meet-and-greet format to discuss what is being done in our programs and the opportunities we can provide to our students.

Networking faculty also prepared and hosted a KCWE “Drive-In” session entitled “Real-world labs for networking and security.” This workshop targeted networking and security instructors in 2012 to demonstrate how to implement real-world labs in network and security classes.

The following is a list of shared faculty within the CSEC:

- Ken Dewey, Director Cyber Security, Rose State
- Derek Payne, Faculty, Information & Network Technology Program, Manhattan Area Technical College
- Michael Ramos, Information Security Specialist, Oklahoma Department of Career and Technology Education
- Robert Hamilton, Information Security Specialist, Oklahoma Career Technology Education System
- Dr. Thomas Pigg, Professor of Computer Information Systems, Jackson State Community College
- Erich Spengler, Director - Director/PI Center for Systems Security and Information Assurance/Professor Computer Technology at Moraine Valley Community College
- John Vos, Professor - Information Technology, West Kentucky Community & Technical College

**1b. Student Access to IA Practitioners**
Four students participated in the National Science Foundation (NSF) National Visiting Committee Cyber Security Education Consortium (CSEC) review meeting during the CSEC conference in Overland Park, Kansas, in April 2010. These students presented their learning experiences with the cyber security curriculum to the NSF National Visiting Committee. The following is a quote from the final conference report: “Students from (our institution) were quite positive about their experiences in the various IT programs, and with their security education.”

Many industry representatives have served on Capstone project review panels, making recommendations and supportive comments related to the physical project and individual and team presentations. This has been done every semester for over seven years, and students gain valuable feedback on their projects from members of industry. The presentations also provide an opportunity for industry members to get a firsthand look at potential employees and become aware of the knowledge and skills being gained from the program.

Industry representatives from the following businesses have served on the review panel:

10D Security
Mercy Regional Health Center
Kansas State University
GTM Sportswear
Boot Hill Casino & Resort
ISG Technology
Blue Cross and Blue Shield of Kansas
Cox Communication
Chief Information Officer for the State of Kansas
Cisco Systems
Kansas State Bank
UMB Bank
USD 383, Manhattan/Ogden Schools
USD 475, Geary County Schools

The students also have access to the MATC IT Department staff.

Below are links to several letters written by individuals in business, industry, and higher education who support the need for quality information assurance education:

Dodge City Community College
Kansas State University
10D Security
Geary County Unified School District No. 475
American Institute of Baking
Jackson State Community College
Fort Hays State University
Metropolitan Community College - Blue River
1c. **Articulation and Transfer Agreements with Universities:**
Manhattan Area Technical College has partnered with Kansas State University, which has an Information Assurance Program that provides a career path for Manhattan Area Technical College graduates. (See Kansas State University Letter, [Link to Articulation KSU doc](#).) Manhattan Area Technical College has also partnered with Oklahoma State University Institute of Technology, which has an Information Assurance Program that provides a career path for Manhattan Area Technical College graduates. The OSU Institute of Technology (OSUIT) Information Technologies Division offers Associate in Science, Associate in Applied Science and Bachelor of Technology (BT) degrees in Information Technologies with a career concentration in Information Assurance and Forensics. [Program Link](#) (See Oklahoma State University Letter, [Link to Articulation OSU doc](#).) Manhattan Area Technical College has also partnered with Fort Hays State University. Fort Hays has Master of Professional Studies (MPS) Concentrations in Information Assurance Management and Cyber Security that provide career paths for Manhattan Area Technical College graduates. [Program link](#) (See Fort Hayes State University Letter, [Link to Articulation FHSU doc](#).)

1d. **Articulation agreements with high schools**
Kansas State Senate Bill 155, which supports secondary students enrolled in postsecondary technical education, went into effect July 1, 2012. High school students admitted to a technical education course or program conducted by a community college, technical college, or institute of technology may be charged fees, but not tuition. Tuition for secondary career technical education students is subject to appropriation. The bill requires the State Board of Regents to initiate the development of a statewide articulation agreement on career and technical education programs among high schools, community colleges, technical colleges, and the Institute of Technology at Washburn University.

1e. **Cyber security Competitions**
Manhattan Area Technical College students have participated in the Cisco NetRiders competitions, and one student made it to the final round in the 2012 competition.

As part of CRT 181, Network and Server Management, a required course for all students, teams participate in a class-wide capture the flag competition. The competition consists of groups of students trying to steal data from other groups’ servers while simultaneously securing their own. The skills focused on during this project are the Metasploit framework, Windows Server, and Linux.

The college is actively seeking intercollegiate competitions in which to participate.

1f. **Community Outreach**
For the past two years the INT faculty has been able to secure proclamations from the Governor of Kansas declaring October “Cyber Security Awareness Month,” and we plan to ensure this occurs in all subsequent years. At the same time, MATC was also able to have the City of Manhattan declare the same. [State Proclamation](#)

Each semester the Semester-four students individually prepare Security Education, Training, and Awareness (SETA) presentations and then present them at various venues, such as K-12 schools, adult education centers, senior groups, etc. Below is a list of recent presentations.

- Drafting Technology classes at Manhattan Area Technical College
- Software Apps classes at Manhattan Area Technical College
- Dental Technology classes at Manhattan Area Technical College
- Geary County Community Hospital Nurses in Pediatrics
- University for Mankind class at the Manhattan public library
- Manhattan Area Technical College Professional Development Training
- Business Administration classes at Manhattan Area Technical College
- Optimist Club
Students from the Semester-three and -four classes (Spring 2010) served as consultants to USD 383 Manhattan-Ogden public schools to inventory network equipment, document the physical and logical topology of the network, and do a security audit at Bergman Elementary School. The students noted significant security vulnerabilities on one of the network switches as compared to the others. The network administrator was able to correct this. A plan is in place for our students to continue this type of network/security review with all district schools.

One program faculty member presented “Log Management” at the 6th Oklahoma Cyber Security Seminar in October, 2010.

Abstract: This presentation addressed the basic question of why network events should be logged, as well as the complicated issue of controlling and managing logs without becoming inundated in data and losing sight of the purposes for the logging.

Faculty members have also attended the 5th and 7th Oklahoma Cyber Security Seminars.


Abstract: The purpose of this session was to introduce the latest initiative in Kansas to address the needs of an education workforce in the fields of Digital Security and Data Assurance. The presentation provided information on how the cyber-security consortium can assist other colleges with curriculum, cyber security program, and professional development.

Abstract: We all know that it is necessary for educators to provide their security students hands-on experiences. Without these experiences students are not going to be prepared for the world of work, where employers expect the graduates to hit the ground running. To address this issue many different approaches have been used, such as traditional labs, virtual labs, and simulated web labs. Similar to other institutions, we have used all these approaches with high levels of success. However, because our students are expected to have real-world experience, our college has moved most, if not all, of the final semester hands-on labs to real-world, live Internet labs. This paper describes our decision processes for converting our labs to this real-world approach and our experiences in that environment.

The INT faculty and students at the Manhattan Area Technical College developed and maintain a cyber security resource website for anyone at:

MATC Cyber security web site

The INT faculty had cyber security posters and bookmarks printed and they are distributed when the students do their SETA presentation. They are also distributed to area schools, businesses, senior centers, posted in the commons areas of the school and in department classrooms. They are also made available to visitors during open houses.

A cyber security “Tip-of-the–Day” is presented to everyone on the college’s Learning Management System (LMS) (lower right had corner of page) at:

https://matconline.matc.net/ics

2a. Cyber security Degrees and Certificates

Manhattan Area Technical College offers an Associate of Applied Science degree in Information & Network Technology.

Program Catalog Listing

The degree program requires the following 62 credit hours:
• 42 Technical Specialty Credit Hours
• 5 Technical Elective Credit Hours
• 15 General Education Credit Hours

In recognizing the importance of professional certification in the IA industry, the college has built many of its courses to follow the objectives of industry recognized certifications. Graduates of the program are expected to have the knowledge required to earn any of the following certifications.

• CompTIA A+
• CompTIA Linux+
• CompTIA Security+
• CompTIA Network+
• Cisco Certified Network Associate (CCNA)
• Cisco Certified Network Associate Security (CCNAS)
• Microsoft Certified Systems Engineer (MCSE) (partial)
• Microsoft Certified Systems Administrator (MCSA) (partial)

Students who complete the requisite coursework in the program also receive the following CNSS certifications:

• NSTISSI 4011 – Information System Security Professional (INFOSEC)
• CNSSI 4013 – System Administrator (SA)

2b. Hands-on Lab Training

Every course in the Information & Network Technology Department requires hands-on lab activities for the students in order to utilize the knowledge acquired in the classroom.

The following IA courses specifically emphasize on hands-on labs:

• CRT 100 Principles of Information Assurance
• CRT 120 Advanced Operating Systems
• CRT 125 PC Hardware
• CRT 170 Network Fundamentals
• CRT 181 Network and Server Management
• CRT 282 Network Security
• CRT 286 LAN/WAN Implementation and Support
• CRT 289 Information Systems Security
• CRT 295 INT Capstone

The following technical courses also utilize hands-on lab activities:

• CRT 115 INT Essentials
• CRT 118 Windows Administration Using the Command Shell
• CRT 144 UNIX Fundamentals
• CRT 148 Microsoft Network Operating Systems
• CRT 151 Virtualization
• CRT 175 Routing Protocols and Concepts
• CRT 215 Database Systems

3a. IA in non-IA Courses

• Manhattan Area Technical College offers a general education course, CRT 100, Principles of Information Assurance, which is a popular elective for students in the Business Administration Department. The Information & Network Technology Department has actively promoted this course to increase enrollment from non-departmental students. Since CRT 100 was changed to a general education course, the number of non-INT students enrolled has grown every semester.

• The Business Administration Department offers CIS 100, Software Applications, and it is open to all students on campus. As part of one of the class sessions a current INT student gives a lecture on IA and basic cyber security awareness. This lecture covers a broad range of topics, including creating passwords, using public and private wifi, and safe browsing habits.
• Lectures similar to the one given in CIS 100 are also presented in the communities surrounding Manhattan Area Technical College. An informational website has been set up as the headquarters for these community awareness training sessions at the following address: http://cyber.manhattantech.edu/

3b. IA Program with Non-technical Courses
• The Information & Network Technology Department requires 62 credit hours for graduation. Of those 62 hours, 15 must be general education courses. Those 15 hours must include math and English classes that require letter grades of “C” or better in both. (See Course Catalog)
• Outside of the 15 general education hours there is also a required course, BUS 126, Introduction to Business. This course is designed to teach students the importance of aligning technology with business goals and profitability.
• Students also take CRT 100, Principles of Information Assurance, which contains a unit on ethics and digital citizenship. This unit is designed to teach all students, both technical and non-technical, about appropriate ethical behavior where technology is concerned.
• Below are the course descriptions for these classes. For more information about the specific credit requirements please refer to the Manhattan Area Technical College course catalog.
  o BUS 126 Introduction to Business – Foundation course about business and its importance in a free market economy. The course includes the study of types of business ownership and operations. Business terminology is used to understand and interpret business news and information.
  o CRT 100 Principles of Information Assurance – Principles of Information Assurance is designed to teach the principles and practices that all computer users need to keep themselves safe, both at work and at home. By presenting best practices along with a small amount of theory, students are taught what to do and why to do it. Topics covered include how to secure both clean and corrupted systems, protecting personal data, securing simple computer networks, and safe Internet usage.

3c. Availability of Professional Development
• Manhattan Area Technical College is committed to educating not only its students, but also faculty and the community about cyber security and IA. As part of this commitment students give cyber security awareness training to other students, faculty, and community groups year round. More information about the awareness training can be found at http://cyber.manhattantech.edu/.
• In addition to the training given by students, the Information & Network Technology faculty, in conjunction with MATC's IT staff, provide cyber security training to MATC faculty. This training is done at the beginning of each spring semester and is organized by MATC’s Professional Development Committee.
• MATC is also an active member of the Kansas Council for Workforce Education. Through KCWE the college has hosted a number of “drive-in” workshops for post-secondary educators both on campus and at Butler Community College.
• KCWE Drive-In Workshop for Networking and Security Instructors, 2012
  2011 Fall KCWE Conference Program
  KCWE First Annual Drive-in Symposium, 2010
  Spring 2013 Professional Development Schedule

4.a. IA Instructional Concentration Lead
Derek Payne
Instructor of Information & Network Technology
Manhattan Area Technical College
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785-587-2800 Ext 4520

Biography
Derek Payne attended Manhattan Area Technical College from 2009-10 and received an Associate of Applied Science degree in Information & Network Technology. The following semester he was hired as an adjunct faculty into the same program, and became a full-time instructor the semester after that. Derek’s teaching duties include all classes that use the CNSS 4011 guidelines. Derek recently became a VMware IT Academy Program Instructor and now teaches VMware Certified Professional (VCP) classes at MATC.

Derek attended the Secure Electronic Commerce course offering from CSEC as well as the following professional conferences:
• 2012 Colloquium for Information Systems Security Education (CISSE)
  o Included the weekend workshop Ethical Hacking and Systems Defense
  o 2012 Conference on Higher Education Computing in Kansas (CHECK)
5a. College Security Policy
As a college that strives to be a leader in cyber security education, Manhattan Area Technical College realizes the importance of leading through example. MATC enforces a college-wide IA security policy. Additional policies relating to IA and cyber security can be found at https://matconline.matc.net/ICS/Resources/Policies_and_Procedures.jnz under the following sections:

- 9.1 Technology Use
- 9.2 E-Mail
- 9.3 Equipment
- 9.4 Wireless Communication

5b. College Information System Security Personnel
Michael King, Director of Information Technology, Brett Hoshaw, Network Administrator, and Aaron Ruder Desktop Technician share responsibility for MATC’s network and information security. Michael King has overall responsibility for server/systems security and Brett Hoshaw, has overall responsibility for network infrastructure security, which includes firewalls, routers and switches. Aaron Ruder has overall responsibility for anti-virus and patch management systems.

Director of Information Technology job description
Network Administrator job description
Desktop Technician job description

5c. College Policy Implementations
Training
Manhattan Area Technical College faculty and staff are required to participate in training sessions every spring during professional development meetings. The MATC Professional Development Committee organizes these training sessions in conjunction with the Information & Network Technology Department faculty, as well as MATC’s own IT employees. (Spring PDC Agenda)

Tip of the Day
All students and faculty access their resources through MATC’s online learning management system, MATCOnline, at the following URL: https://matconline.matc.net/ics/. On the main page there is a portlet entitled “Cyber Security” that lists a “Tip of the Day.” When the tip is clicked the user is directed to the Multi-State Information Sharing & Analysis Center website at: http://msisac.cisecurity.org/daily-tips/

Security Banners
When a device connects to MATC’s wired or wireless network it is not given Internet access until the user has accepted a policy statement that appears as a browser splash screen. The screen displays the following text to users.

This network is provided for the use of Manhattan Area Technical College's invited guests. All traffic may be monitored, stored in a retrieval system, or disclosed to third parties (including law enforcement agencies and personnel) at the sole discretion of Manhattan Area Technical College and without further notice. By clicking "Accept" below, you agree to these terms and the terms of any applicable ISP acceptable use policies, which are incorporated by reference.

Forms, Policies and Guidelines
Manhattan Area Technical College maintains all policies and procedures in a single online location at the following address: https://matconline.matc.net/ICS/Resources/Policies_and_Procedures.jnz

Section 9.1 covers technology usage.

Under General Policies and Procedures in the Student Handbook there is a section on the computer usage policy (pp. 15 -17) and a section on student e-mail accounts (p. 18). The Student Handbook is also available as a download at:
Security Related Help
The MATCOnline website contains a link to technology-related help:

https://matconline.matc.net/ICS/Help/Default_Page.jnz

The MATCOnline website contains a link to create a MATCOnline login account which includes the password policy:
https://matconline.matc.net/ICS/Help/Create_MATC_Login.jnz

The MATCOnline website contains a link to reset a MATCOnline account password
https://matconline.matc.net/ICS/Help/Reset_Password.jnz

Posters
The INT faculty had cyber security posters and bookmarks printed and they are posted in the commons areas of the school and in department classrooms. They are also available to visitors during open house events. (Poster PDF)

Cyber security resource web site
The INT faculty and students at the Manhattan Area Technical College developed and maintain a cyber security resource website for anyone at: MATC Cyber security web site