ALARM SYSTEMS TECHNOLOGY

EVENING PROGRAM CERTIFICATE IN ALARM SYSTEMS TECHNOLOGY

The Alarm Systems Technology program trains students how to install fire and electronic security monitoring systems and integrate new technology into residential and commercial settings.

Combining the skills of an electrician with those of an information technology specialist, students will receive professional training on the most up-to-date security technologies.

Alarm systems security technicians plan, install and troubleshoot residential and commercial security systems, including closed circuit TV, card access, intercom, video and other related equipment. Alarm Systems Technology has become an active field of employment as people integrate security, computer and telephony technology to better manage their assets.

Upon completion of the two-year certificate, students will prepared for a career in fields such as communications installation, service technician, fire alarm inspectors, voice and data service technician, in addition to a variety of security and electrical opportunities.

For students interested in furthering their education, these courses are creditable toward our Associate of Applied Science (AAS) and Bachelor of Science in Applied Management (BSAM) degrees. Please see our AAS and BSAM evening program offerings starting on page 90.

PROGRAM COURSES			Hours	Prerequisites
First Semester	ASY101C	Fundamentals of Alarm Systems	6	
Second Semester	ASY102C	Alarm System Electronics and Computer Controls	6	
Third Semester	ASY103C	Design and Integration of Alarm Systems	6	
Fourth Semester	ASY104C	Installation and Commissioning of Alarm Systems	6	
		Total Technical Credit Hours for Certificate Completion	24	
Courses should be taken in the order listed.				

COURSE DESCRIPTIONS

ASY101C FUNDAMENTALS OF ALARM SYSTEMS

This course is the foundation course for all following coursework in Alarm Systems Technology, including the basics of construction materials and methods, introduction to many types of conduits and wireways used in low-voltage applications, coverage of the hardware and systems used by a low-voltage technician to mount and support boxes, receptacles, and other electrical components. Additionally, students learn safety rules and regulations for electricians, the necessary precautions to take for various electrical hazards found on the job, and the OSHA-mandated lockout/tagout procedure. This course also includes an introduction to conduit bending and installation, and the makeup, identification, and applications of various types of conductors and cables used in telecommunications and security systems. Six credit hours.

ASY102C ALARM SYSTEM ELECTRONICS AND COMPUTER CONTROLS

This course increases the depth and breadth of the student's electrical and electronic knowledge in DC and AC devices and circuitry. Additionally, the course covers diagnosis using electrical test equipment, National Electrical Codes surrounding grounding issues, lightning protection, telecommunications cabling, life safety systems, motor and generator power sets, and uninterrupted power supplies. The student will interpret electrical drawings, site plans, equipment schedules, and perform take-offs from construction drawings. Since all systems have integrated computer controls, the student will learn how to assemble a PC, how to load application software, and how to perform systems back-up. Six credit hours.

ASY103C DESIGN AND INTEGRATION OF ALARM SYSTEMS

An emphasis in low-voltage cabling installations for a variety of computer-controlled buses and networks, such as fiber-optic cable, CAT 5, and co-axial cable installations. Additionally, the student will learn to install and troubleshoot wireless radio frequency and infrared networked systems. The course teaches all phases of installation, including site survey, project planning, documentation, as well as system maintenance and repair. Six credit hours.

ASY104C INSTALLATION AND COMMISSIONING OF ALARM SYSTEMS

This course integrates all of the prior learning from semesters one, two, and three as the technician learns life safety system applications. The course covers fire alarm, intrusion detection security, audio, hospital nurse call and signaling, closed circuit and broadband TV, and building access control systems. Students learn interconnection and integration protocols as well as system commissioning and user training.
Six credit hours.

INFOTECH DIVISION

INFORMATION TECHNOLOGY

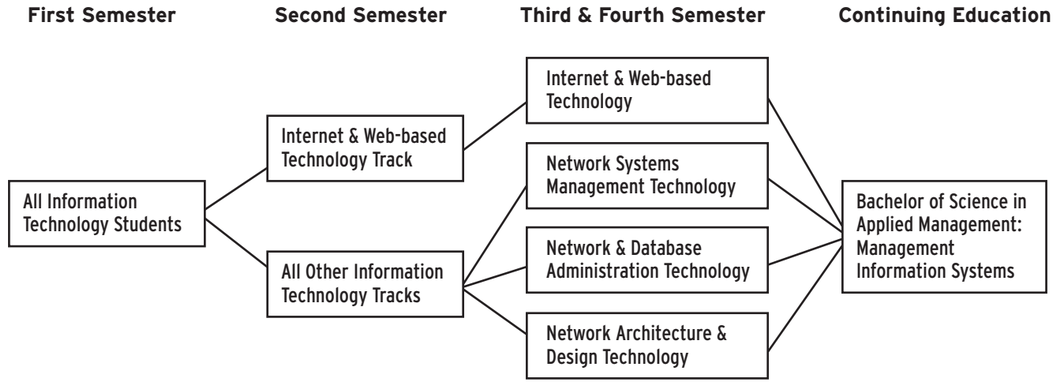
The Information Technology (IT) division at Ranken Technical College offers students an unparalleled education and intensive hands-on experience to prepare them for successful, fast-track careers.

Ranken's IT programs offer flexibility in designing a career that's right for you. All IT students begin in a common first semester that focuses on desktop operating systems and teaches students how to use the computer and networks as a resource. Students spend time learning the unique features and benefits of each career field available to them and may choose between four track options offering specialized training in:

- **Internet and Web-based Technology**
  Focusing on Internet design with experience in Internet and Web-based programming, students will utilize industry-standard applications such as Adobe® Flash® and DreamWeaver®; and learn hand-coded HTML, JavaScripting and the Microsoft® .NET framework. Students will use a variety of programming languages to design and maintain software applications and Web services in order to help businesses communicate with customers, partners and employees via Web-based technology.
- **Network Architecture and Design Technology**
  In this hardware-centered course, students will work with Cisco® equipment, program and configure routers and switches, study wireless LAN configurations and security and firewall issues, Voice Over IP technology and virtual LANs. Students will be prepared for the Cisco Certified Network Associate (CCNA™) certification test.
- **Network and Database Administration**
  Software-centered, this track focuses on Microsoft Server 2008 for network services, network infrastructure & Active Directory, Microsoft Exchange Server for e-mail services and Microsoft SQL for database configuration and services. Students will be prepared to achieve Microsoft Certified Technology Specialist (MCTS) certification status as well as being well on the way to Microsoft Certified IT Professional (MCITP) certification status.
- **Network Systems Management Technology**
  Featuring elements of network and database administration and network architecture technology, this track will focus on configuring Cisco routers. Students will also study Microsoft Server 2008, including Active Directory Services and network infrastructure. Students will be prepared for the Cisco Certified Network Associate (CCNA) certification test.

ASSOCIATE OF TECHNOLOGY OR ASSOCIATE OF SCIENCE

The various track options offer students the opportunity to design and build networks and Web sites. Students receive intense hands-on lab time, spending three hours in the lab working with equipment and technology to one hour in classroom theory. Class sizes are small, usually with no more than two students to every piece of equipment. Lab exercises focus on troubleshooting and working through real-world situations and problems, so students can be confident they are prepared to work in the fast-paced IT field. Leading industry Cisco and Microsoft testing and certifications are also integrated into the course curriculum. Perhaps one of the biggest advantages of Ranken's IT program is that students learn to think and solve problems. We teach students how to be continual learners — a "must-have" in today's rapidly changing IT field. Based on our strong industry relationships and advisory board input, our programs are flexible enough to quickly incorporate cutting edge technology. Graduates of Ranken's IT programs work at companies such as Anheuser-Busch, Emerson, Enterprise, BJC Healthcare, Charter Communications, AT&T, IBM and the Lindbergh School District. Upon completion of the associate degree program, students are eligible for the Bachelor of Science in Applied Management (BSAM) program — and could graduate with a bachelor's degree in as little as two short years.



PROGRAM COURSES			Hours	Prerequisites
First Semester	CNT1100	Operating Systems	15	MTH1100 or MTH1110 (Co. Req.)
Second Semester (Internet and Web-based Technology)	IWT1228	Web Development and Design Foundation	6	CIT2211
	IWT1227	Java Programming	6	
Second Semester (All other tracks)	CNT1210	Microcomputer Hardware and Peripherals	7	CNT1100
	CNT1221	Introduction to Internetworking Technologies	8	CNT1221
Internet and Web-Based Technology (Third and Fourth Semester)	CNT2000	Database Administration	6	CNT2025 & CNT2026
	INF2025	Microsoft Network Administration I	7	
	IWT2200	.NET Framework	15	All IWT2100 level courses
Network Architecture Technology (Third and Fourth Semester)	CNT2027	Advanced Networking & Internetworking Infrastructure Technologies Theory	4	CNT1221
	CNT2028	Advanced Networking & Internetworking Infrastructure Technologies Lab	11	
	CNT2022	Voice Over IP (VOIP)	7	CNT2027 & CNT2028
	CNT2021	Wireless Technologies	7	CNT1221
Network and Database Administration (Third and Fourth Semester)	CNT2000	Database Administration	6	CNT2025 & CNT2026
	CNT2010	Email Systems	6	CNT2025 & CNT2026
	INF2025	Microsoft Network Administration I	7	
	INF2026	Microsoft Network Administration II	7	CNT1100
Network Systems Technology (Third and Fourth Semester)	CNT2027	Advanced Networking & Internetworking Infrastructure Technologies Theory	4	CNT1221
	CNT2028	Advanced Networking & Internetworking Infrastructure Technologies Lab	11	
	INF2025	Microsoft Network Administration I	7	CNT1100
	INF2026	Microsoft Network Administration II	7	
		Total Technical Credit Hours Required	57-60	

GENERAL EDUCATION COURSES			Hours	Prerequisites
English/Social Sciences	ENG1101	College Composition I	3	Placement Exam or ENG1099
	ENG2102	College Composition II	3	ENG1101
	COM1105	Oral Communications	3	
	SOC1206	Principles of Sociology **or**	3	ENG1099 (Co. Req.)
	PSY1206	Introduction to Psychology	3	ENG1099 (Co. Req.)
Mathematics/Science	MTH1110	Elementary Algebra and MTH1111 Intermediate Algebra **or**	6	Placement Exam or MTH1099
	MTH1100	Elementary/Intermediate Algebra	3	Placement Exam
	MTH2112	College Algebra	3	MTH1100 or MTH1111
	PHY2100	Conceptual Physics	3	MTH1110
Business/Information Technology	WFD1200	Job Search Success	1	MNG1220 or BUS1204 (Co. Req.)
	MNG1204	Introduction to Business and Management	3	ENG1099 (Co. Req.)
Associate of Science Additional Required Courses	MTH2220	Trigonometry	3	MTH2112
	PHY2230	College Physics (Subsitute for PHY2100)	3	MTH2220
	MTH2240	Survey of Calculus	3	MTH2112

Important Note: Only courses in which a grade of "C" or higher is earned may be applied toward this Ranken degree.

INFORMATION TECHNOLOGY (CONTINUED)

COURSE DESCRIPTIONS

CNT1100 OPERATING SYSTEMS

Provides a comprehensive overview of Command Line, Microsoft Windows XP and Windows 7 operating systems. Students will work with partitioning, formatting, directory structures, file management, memory resident programs, device drivers, batch files, configuration files and remote recovery consoles. Students will learn to use a command line interface for troubleshooting and system recovery. Students spend time installing and upgrading each operating system while gaining an in-depth understanding of Microsoft Windows optimization, customization, client side network setup, peer-to-peer networking, printing, resource sharing, policies, profiles, administration, security and remote administration. Students will be prepared as a Microsoft Certified Technology Specialist. Fifteen credit hours.

CNT1210 MICROCOMPUTER HARDWARE AND PERIPHERALS

Offers an in-depth study of personal computers. Students spend time studying microcomputer subsystems including, processors, memory and modern bus types. Students also study, install and configure the most common business oriented peripheral devices. Students learn to build, configure and troubleshoot PCs and will be prepared for the CompTIA A+ certification exam. Seven credit hours.

CNT1221 INTRODUCTION TO INTERNETWORKING TECHNOLOGIES

In this course, students will learn fundamental computer networking terms, concepts and components. Students will develop skills in basic network configuration, connectivity and testing using workstations, hubs, routers and switches. Students will also develop skills in cable construction and testing, small model local area network (LAN) and wide area network (WAN) construction, IP addressing and basic subnetting. Eight credit hours.

CNT2000 DATABASE ADMINISTRATION

This course targets database administration and design and other topics relevant to working with SQL databases. Students will gain a basic understanding of how to design, install, maintain, upgrade and troubleshoot Microsoft SQL Server. Topics include installing and configuring SQL, creating databases, optimizing database performance, extracting and transforming data, managing security and monitoring and troubleshooting SQL Server system activity. Six credit hours.

CNT2010 EMAIL SYSTEMS

This course teaches students how to operate the latest version of the popular Microsoft messaging solution. In this course, you will learn to design and deploy an exchange messaging infrastructure, including upgrade and migration strategies. Six credit hours.

CNT2021 WIRELESS TECHNOLOGIES

This course on Wireless LANs focuses on the design, planning, implementation, operation and troubleshooting of Wireless LANs. It covers a comprehensive overview of technologies, security and design best practices with particular emphasis on hands-on skills in the following areas: Wireless LAN setup and troubleshooting; IEEE 802.11 technologies, products and solutions; Radio Technologies; WLAN applications and site surveys; Resilient WLAN products, design, installation, configuration and troubleshooting; WLAN security; vendor interoperability strategies; and emerging wireless technologies. Seven credit hours.

CNT2027 ADVANCED NETWORKING AND INTERNETWORKING INFRASTRUCTURE TECHNOLOGIES THEORY

Develops skills in router configuration, Cisco IOS® software management, routing protocol configuration and the creation and placement of ACLs to control router access. Students will also develop skills in the configuration of advanced IP addressing techniques and intermediate routing protocols, CLI switch configuration, ethernet switching, VLAN configuration, VTP configuration and inter-VLAN routing configuration. WAN technology evaluation, WAN design, WAN protocol configuration and troubleshooting and network management are also discussed. This course also focuses on the design, planning, implementation, operation and troubleshooting of wireless LANs, including IEEE 802.11 technologies, products and solutions. Four credit hours.

CNT2028 ADVANCED NETWORKING AND INTERNETWORKING INFRASTRUCTURE TECHNOLOGIES LAB

Students build many networks applying the knowledge gained in semesters one and two. Students plan, build, configure and test different networking architectures and put the basic components of the network into practical use. This course covers a hands-on comprehensive overview of technologies, security and best design practices of LAN setup and troubleshooting. Eleven credit hours.

CNT2022 VOICE OVER IP (VOIP)

This course provides an introduction to converged voice and data networks as well as the challenges faced by its various technologies. It presents Cisco solutions and implementation considerations to address those challenges. Students will learn about the architecture, components, functionality and features of Cisco CallManager/ CallManager Express. Students will also learn Voice over IP (VOIP) and Quality of Service (QOS) technologies and apply them to the Cisco CME environment. Seven credit hours.

INF2025 MICROSOFT NETWORK ADMINISTRATION I

Offers a comprehensive overview of the Microsoft Network Operating Systems. Focus is placed on using the Windows Server operating system to provide networking services, such as user creation, file sharing, printer sharing and remote access. Students also learn how to use the Microsoft Active Directory Services to provide networking services for larger scale networks. Seven credit hours.

INF2026 MICROSOFT NETWORK ADMINISTRATION II

Provides hands-on implementation of concepts studied in INF2025. Students design the layout to set up Active Directory Services for small and large networks, implement network plans by installing the Windows Network Operating System and configure servers to provide the proper networking services. Seven credit hours.

IWT1228 WEB DEVELOPMENT AND DESIGN FOUNDATION

This course includes the technologies needed to develop highly effective Web sites. Students will obtain a comprehensive coverage of XHTML, Cascading Style Sheets and Web design best practices while also learning about accessibility, ethics, e-commerce, Web site promotion strategies and JavaScript. Students will gain important Web development and design concepts along with step-by-step presentations on their implementation. With Web design focused activities, as well as hands-on practices, hands-on exercises, Web site case studies and valuable reference material, this course provides the skill sets that beginning Web developers will need. Six credit hours.

IWT1227 JAVA PROGRAMMING

The students are introduced to object-oriented programming using the Java SDK and Netbeans software packages. The fundamentals of control structures, classes and the Old Development Paradigm are thoroughly covered before moving onto graphics and more powerful applications of the Java language. Six credit hours.

IWT2200 .NET FRAMEWORK

The .NET Framework is an integral Windows component for building and running the next generation of software applications and Web services. This course focuses on using the ASP and C# programming languages within that framework. Emphasis will be given to the .NET architecture/design, data access, deployment and distribution. Fifteen credit hours.

INFORMATION TECHNOLOGY (CONTINUED)

EVENING PROGRAM CERTIFICATE IN COMPUTER NETWORKING TECHNOLOGY

Composed of a combination of computer desktop operating systems, Local Area Networking (LAN), Wide Area Networking (WAN) and microcomputer hardware, Ranken's two year evening program leads to a Certificate in Computer Networking Technology.

The first year of the program focuses on preparing students to become A+ Certified technicians. The curriculum covers installation, configuration and troubleshooting of desktop computer systems.

During the second year, students are introduced to network devices and how they fit into the network. Using Cisco routers, students learn how to implement routing among the LAN protocol suites and across WANs. With the skills gained in this program, students are prepared to design, build and maintain small and medium-sized networks.

At the completion of the second year, students are eligible to earn Cisco® Certified Network Associate (CCNA™) certification.

For students interested in furthering their education, these courses can be credited toward the Bachelor of Science in Applied Management (BSAM) degree.

ASSOCIATE OF APPLIED SCIENCE

Ranken is offering an Associate of Applied Science degree as a part of the evening program curriculum. You can earn your associate degree with a combination of Ranken's standard evening school courses as well as our new online courses. You can also transfer credit from other accredited technical training programs, or have your technical work experience evaluated for possible transfer credit. (30 technical credit hours required for graduation.)

For all General Education course requirements, please turn to page 89.
For more information about the BSAM degree, please turn to page 92.

PROGRAM COURSES			Hours	Prerequisites
First Semester	CNT0110	Command Line and Windows® Lab	6	
Second Semester	CNT0120	Microcomputer Hardware and Peripherals	6	
Third Semester	CNT0130	Data Communication and Basic Router Configuration	6	CNT0110, CNT1020
Fourth Semester	CNT0230	Implementing Cisco® Networking Equipment and Wide Area Network (WAN) Router Configuration	6	CNT0130
		Total Technical Credit Hours for Certificate Completion	24	

COURSE DESCRIPTIONS

CNT0110 COMMAND LINE AND WINDOWS® LAB

Provides a comprehensive overview of Microsoft Windows 7 and Windows XP operating systems. Students will work with partitioning, formatting, directory structures, file management, device drivers, batch files, configuration files and remote recovery consoles. Students will learn to use a command line interface for troubleshooting and system recovery. Students will spend time installing each operating system while gaining an in-depth understanding of Microsoft Windows optimizations, customization, client side network configuration, peer-to-peer networking, printing, resource sharing, policies, profiles, administration, security and remote administration. Six credit hours.

CNT0120 MICROCOMPUTERS HARDWARE AND PERIPHERALS

Offers an in-depth study of personal computers. Students spend time studying microcomputer subsystems, including: processors, memory and modern bus types. Students also study, install and configure the most common business oriented peripheral devices. Students learn to build, configure and troubleshoot PCs. Students will be prepared for the CompTIA A+ certification exam. Six credit hours.

CNT0130 DATA COMMUNICATION AND BASIC ROUTER CONFIGURATION

The semester begins with an introduction to the Internetworking model and the TCP/IP protocol suite. Course will focus on networking fundamentals including the Open Systems Interconnection model and industry standards, networking layouts, IP addressing and basic network design. The second half of the semester students will examine basic beginning router configurations to learn how a Cisco router works and study how to configure and troubleshoot a Cisco router that is on a TCP/IP network. Students will also recieve an introduction to local area network (LAN) switching. Six credit hours.

CNT0230 IMPLEMENTING CISCO NETWORKING EQUIPMENT AND WIDE AREA NETWORK (WAN) ROUTER CONFIGURATION

The course begins by building on skills learned in previous semesters and focuses on designing a LAN. Students learn advanced router configurations, local LAN switching, network management and advanced network design. Later in the semester, students are introduced to WAN concepts and cover advanced design considerations and protocol implementations, including how WANs are implemented on a Cisco Router. Six credit hours.

ADVANCED CISCO CERTIFIED NETWORK PROFESSIONAL (CCNP) CERTIFICATION TRAINING

Advanced training for Cisco Certified Network Professional (CCNP) certification is now available at Ranken Technical College. Our convenient evening classes are designed to help you work toward the next level in your certification goals.

Ranken is not only a certified Cisco Networking Academy, but also the 2008 awardee of the prestigious Cisco "4R" award in the category of academic rigor.

The CCNP curriculum builds upon Cisco Certified Networking Associate (CCNA) courses, adding more complex network configurations, diagnosis and troubleshooting strategies. These courses are designed for individuals wishing to become network engineers, network administrators and network technicians.

Geared towards the working adult, classes are conveniently offered in the evening, meeting just twice a week, from 6:00 p.m. to 10:00 p.m.

Students may enroll in the CCNP program once they have successfully completed CCNA training within the Cisco Networking Academy or if they have a current CCNA certification.

Upon successful completion all of CCNP courses, students may wish to continue their education goals. Ranken offers a Bachelor of Science in Applied Management now, with an emphasis in Management Information Systems (MIS). In as little as 13 months you can earn your CCNP while concurrently earning credit hours toward your future degree.

PROGRAM COURSES		Hours	Prerequisites
CNT300C	Implementing Cisco IP Routing	6	
CNT310C	Implementing Cisco IP Switched Networks	6	
CNT320C	Troubleshooting and Maintaining Cisco IP Networks	6	
		18	

COURSE DESCRIPTIONS

CNT300C IMPLEMENTING CISCO IP ROUTING

In this course, students will learn how to configure EIGRP across HDLC, Frame Relay, MPLS, VPN and MPLS virtual circuits. Students will also configure OSPF over HDLC, Frame Relay, PPT and over different WAN links. Time will be spent implementing alternate routing path control, implementing IPv6, analyzing branch office network designs and planning installations; and analyzing designs to support mobile workers and planning network modifications. Six credit hours.

CNT310C IMPLEMENTING CISCO IP SWITCHED NETWORKS

This course covers the skills necessary to plan, configure and verify the implementation of complex enterprise switching solutions using Cisco's Campus Enterprise Architecture including, Secure integration of VLANs, WLANs, voice and video into campus networks. Six credit hours.

CNT320C TROUBLESHOOTING AND MAINTAINING CISCO IP NETWORKS

In this course, students will learn to plan and perform regular maintenance on complex enterprise routed and switched networks and use technology-based practices and a systematic ITIL-compliant approach to perform network troubleshooting. Six credit hours.

MANUFACTURING DIVISION