

# INFORMATION & TELECOMMUNICATIONS TECHNOLOGY

**2009-2010 Program Options:**  
**Networking Fundamentals (16)**  
**Advanced Networking Certificate (16)**  
**Information Assurance and Security Certificate (16)**  
**MCSA Certificate (16)**  
**Storage Area Networking Certificate (16)**  
**VoIP Infrastructure and Management Certificate (16)**  
**Information and Telecommunication Technology Certificate (30)**  
**Information and Telecommunications Technology AAS (64)**

<b>Occupational Certificate: Networking Fundamentals</b>					
<b>Total Number of Credits: 16</b>					
<b>Program Description:</b> This certificate is designed to prepare students to select, connect, configure, and troubleshoot various networking devices for enterprise networks. This certificate covers topics including switched networks with VLANs, determining IP routes, managing IP traffic and access control. Establishing Point-to-Point and frame relay connections for WAN traffic is also covered. Additionally, this certificate will prepare students to take the Cisco Certified Network Associate (CCNA) examination.					
ITT 1020	Introduction to Information & Telecommunications Technology	3	ITT 2031	LAN Switching and Wireless (CCNA-3)	3
ITT 1031	Network Fundamentals (CCNA-1)	3	ITT 2032	Accessing the WAN (CCNA-4)	3
ITT 1032	Routing Protocols and Concepts (CCNA-2)	3	ITT 2033	CCNA Capstone	1

<b>Occupational Certificate: Advanced Networking</b>					
<b>Total Number of Credits: 16</b>					
<b>Program Description:</b> This certificate is designed to prepare students to install, configure and troubleshoot converged local and wide area networks with 100 to 500 or more nodes. Students will develop knowledge and skills required to manage the routers and switches that form the network core, as well as edge applications that integrate voice, wireless, and security into the network. Additionally, this certificate will prepare students to take the Cisco Certified Network Professionals (CCNP) examinations.					
<b>Application Requirements:</b> Cisco Certified Network Associate (CCNA) certification or appropriate coursework or instructor consent.					
<b>Core Requirements: 16 credits</b>			<b>AND Select two courses from the following: (6 credits)</b>		
ITT 2042	Implementing Secure Converged Wide Area Networks (CCNP-2)	3	ITT 1021	Principles of Information Security	3
ITT 2043	Building Converged Cisco Multilayer Switched Networks (CCNP-3)	3	ITT 2020	Network Security Fundamentals	3
ITT 2044	Optimizing Converged Networks (CCNP-4)	3	ITT 2036	Network Attached Storage	3
ITT 2780	Internship	1	ITT 2038	Storage Area Network Management	3
			MCST 1013	Supporting Microsoft Windows Server 2003	3
			MCST 2032	Linux/UNIX System Administration	3

<b>Occupational Certificate: Information Assurance and Security</b>					
<b>Total Number of Credits: 16</b>					
<b>Program Description:</b> This certificate provides students with the professional competencies specified by the world's two most prominent authorities in information assurance-the joint National Security Agency and Department of Homeland Security Committee on National Security Standards (CNSS), and the (ISC) organization's requirements for the Certified Information Systems Security Professional (CISSP) credential. Students that complete this certificate are prepared for careers as information systems security officers, information security analysts, administrators and consultants, risk managers and auditors.					
<b>Application Requirements:</b> Proficiency in the knowledge and skills relating to configuring and maintaining routers and switches and a fundamental understanding of the principles of information security as demonstrated by: Cisco Certified Network Associate (CCNA) certification and a relevant industry certification in the IT security field (e.g. CompTIA Security +, CCSP, CISSP, etc.) or appropriate coursework or instructor consent.					
<b>Core Requirements: 16 credits</b>			<b>AND Select two courses from the following: (6 credits)</b>		
ITT 2020	Network Security Fundamentals	3	ITT 2042	Implementing Secure Converged Wide Area Networks (CCNP-2)	3
ITT 2025	Firewalls and Network Security	3	ITT 2043	Building Converged Cisco Multilayer Switched Networks (CCNP-3)	3
ITT 2075	Wireless Network Security	3	ITT 2044	Optimizing Converged Networks (CCNP-4)	3
ITT 2780	Internship	1	ITT 2065	Information Security Management	3
			MCST 1013	Supporting Microsoft Windows Server 2003	3
			MCST 2032	Linux/UNIX System Administration	3

<b>Occupational Certificate: MCSA</b>					
<b>Total Number of Credits: 16</b>					
<b>Program Description:</b> This certificate is designed to prepare students to successfully manage and maintain the typically complex computing environment of medium-to-large-sized companies utilizing Microsoft technologies. Additionally, this certificate will prepare students to take the Microsoft Certified System Administrator (MCSA) examinations.					
<b>Application Requirements:</b> Proficiency in the knowledge and skills related to understanding the fundamentals of networking and the configuration of routers as demonstrated by: Cisco Certified Entry networking Technician (CCENT) certification or CompTIA Network+ certification or appropriate coursework or instructor consent.					
<b>Core Requirements: 16 credits</b>			<b>AND Select two courses from the following: (6 credits)</b>		
MCST 1011	Supporting Microsoft Windows XP Prof.	3	MCST 1001	PC Hardware and Software	4
MCST 1013	Supporting MS Windows Server 2003	3	MCST 2015	Administering the Active Directory	3
MCST 2017	Windows Server 2003 Network Infrastruct.	3	ITT 1021	Principles of Information Security	3
ITT 2780	Internship	1	ITT 2020	Network Security Fundamentals	3

<b>Occupational Certificate: Storage Area Networking</b>					
<b>Total Number of Credits: 16</b>					
<b>Program Description:</b> This certificate is designed to prepare students to enter or advance into the Storage Area Networking (SAN's) field. Students will develop knowledge, understanding and technical operational skills relating to SAN's best practices. This program is designed around developing Network Attached Storage (NAS) and Storage Area Networks (SAN). Focus on deployment of NAS and SANs and managing those networks in a data-centric enterprise environment. Students will gain valuable skills maintaining and managing SAN business requirements and standards. This certificate is designed to advance students/professionals into the SAN field by building on technical information technology, computing, networking and telecommunication knowledge. Additionally, this certificate will prepare students to take the Storage Networking Industry Association (SNIA) examination.					
<b>Application Requirements:</b> Cisco Certified Network Associate (CCNA) certification or appropriate coursework or instructor consent.					
<b>Core Requirements: 16 credits</b>			<b>AND Select two courses from the following: (6 credits)</b>		
ITT 2036	Network Attached Storage	3	ITT 2020	Network Security Fundamentals	3
ITT 2038	Storage Area Network Management	3	ITT 2042	Implementing Secure Converged Wide Area Networks (CCNP-2)	3
ITT 2051	Enterprise Computing Virtualization	3	ITT 2043	Building Converged Cisco Multilayer Switched Networks (CCNP-3)	3
ITT 2780	Internship	1	ITT 2044	Optimizing Converged Networks (CCNP-4)	3
			MCST 1013	Supporting Microsoft Windows Server 2003	3
			MCST 2032	Linux/UNIX System Administration	3

<b>Occupational Certificate: VoIP Infrastructure and Management</b>					
<b>Total Number of Credits: 16</b>					
<b>Program Description:</b> This certificate is designed to prepare students to enter or advance into the IP Telephony field. Students will be provided the opportunity to develop knowledge, understanding and technical operational skills relating to VoIP best practices. This program is designed around developing VoIP networks, deployment of VoIP, and managing those networks. Students will gain valuable skills maintaining and managing VoIP business requirements and standards. This certificate is designed to advance students/professionals into the VoIP field by building on technical information technology, computing, networking and telecommunication knowledge.					
<b>Application Requirements:</b> Cisco Certified Network Associate (CCNA) certification or appropriate coursework or instructor consent.					
<b>Core Requirements: 16 credits</b>			<b>AND Select two courses from the following: (6 credits)</b>		
ITT 1070	Telephony Systems	3	ITT 1021	Principles of Information Security	3
ITT 2060	Computer Telephony Integration	3	ITT 2020	Network Security Fundamentals	3
ITT 2070	Video Integration	3	ITT 2042	Implementing Secure Converged Wide Area Networks (CCNP-2)	3
ITT 2780	Internship	1	ITT 2043	Building Converged Cisco Multilayer Switched Networks (CCNP-3)	3
			ITT 2044	Optimizing Converged Networks (CCNP-4)	3
			MCST 1013	Supporting Microsoft Windows Server 2003	3
			MCST 2032	Linux/UNIX System Administration	3

<b>Occupational Certificate: Information and Telecommunication Technology</b>					
<b>Total Number of Credits: 30</b>					
<b>Program Description:</b> The Information and Telecommunication Technology Specialist program prepares individuals with the essential technical and organizational skills necessary to maintain modern computer and telecommunication networks in today's business and industrial environments.					
<b>Application Requirements:</b> Minimum assessment score placement in MATH 0070, or completion of MATH 0030 with a "C" or higher and assessment score placement in ENGL 1021, or completion of ENGL 0090 with a grade of "C" or higher.					
<b>Career/Occupational Requirements: 27 credits</b>			<b>General Education/MnTC Requirements: 3 credits</b>		
			<i>Goal 1 - Communication: 3 credits</i>		
ITT 1020	Introduction to Info. & Telecommunications Tech.	3	Select <b>ONE</b> of the following communication courses:		
ITT 1031	Network Fundamentals (CCNA-1)	3	ENGL 1021	Composition I	3
ITT 1032	Routing Protocols and Concepts (CCNA-2)	3	COMM 1021	Fundamentals of Public Speaking	3

ITT 2031	LAN Switching and Wireless (CCNA-3)	3	COMM 1031	Interpersonal Communication	3
ITT 2032	Accessing the WAN (CCNA-4)	3	COMM 1041	Small Group Communication	3
ITT 2041	Telephony Systems	3	COMM 1051	Intercultural Communication	3
MCST 1001	PC Hardware and Software (formerly 1000 & 1010)	4			
Technical Electives approved by ITT faculty by Academic Petition		5			

<b>Associate in Applied Science Degree: Information &amp; Telecommunications Technology</b>					
<b>Total Number of Credits: 64</b>					
<b>Program Description:</b> This broad-based program of liberal, technical, and professional studies will prepare students for intelligent, effective, self-development in a complex and continually changing society. The Information and Telecommunications degree is designed to allow students to focus on a specialized area within the Information Technology field. The program also emphasizes the importance of business and communications skills in today's business climate.					
<b>Application Requirements:</b> Minimum assessment score placement in MATH 0070, or completion of MATH 0030 with a "C" or higher; assessment score placement in ENGL 1021, or completion of ENGL 0090 with a grade of "C" or higher; assessment score placement in RDNG 1000 or completion of RDNG 0090 with a grade of "C" or higher.					
<b>Career/Occupational Requirements</b>			<b>General Education/MnTC Requirements: 20 credits*</b>		
<b>Core Requirements: 31 credits</b>			<b>Goal 1 - Communication: 7 credits</b>		
ITT 1020	Introduction to Info. & Telecommunications Tech.	3	ENGL 1021	Composition I	4
ITT 1021	Principles of Information Security	3	Select <b>ONE</b> of the following COMM courses		
ITT 1031	Network Fundamentals (CCNA1)	3	COMM 1021	Fundamentals of Public Speaking	3
ITT 1032	Routing Protocols & Concepts (CCNA2)	3	COMM 1031	Interpersonal Communication	
ITT 1033	Network Infrastructure and Data Center Design (BICSI)	3	COMM 1041	Small Group Communication	3
			COMM 1051	Intercultural Communication	3
ITT 2031	LAN Switching and Wireless (CCNA3)	3	<b>Goal 2 – Critical Thinking is automatically fulfilled when all other MnTC goals are complete.</b>		
ITT 2032	Accessing the WAN (CCNA4)	3	<b>Goal 3 and/or Goal 4 – Sciences/Math/Logical Reasoning: 3</b>		
ITT 2041	Building Scalable Cisco Internetworks (CCNP1)	3	<b>Goal 5 – History/Social and Behavioral Sciences: 3</b>		
ITT 2080	Technology Planning & Architecture	3	<b>Goal 6 – Humanities and Fine Arts: 3</b>		
ITT 2780	Internship OR Technical Elective	1	<b>Goals 7-10: Three credits in one of these four goals (Fulfilled</b>		
	Technical Elective	3	<b>by COMM course)</b>		
<b>Select ONE of the Areas of Emphasis listed next: 13 credits</b>			*Four (4) credits beyond the minimums are needed to reach 20 credits. See MNTE course list for options.		

<b>Emphasis Area: Advanced Networking</b>					
<b>Total Number of Credits: 13</b>					
<b>Core Requirements: 10 credits</b>			AND Select <b>one</b> course from the following: (3 credits)		
ITT 2042	Implementing Secure Converged Wide Area Networks (CCNP-2)	3	ITT 2020	Network Security Fundamentals	3
ITT 2043	Building Converged Cisco Multilayer Switched Networks (CCNP-3)	3	ITT 2036	Network Attached Storage	3
ITT 2044	Optimizing Converged Networks (CCNP-4)	3	ITT 2038	Storage Area Network Management	3
ITT 2780	Internship	1	MCST 1013	Supporting Microsoft Windows Server 2003	3
			MCST 2032	Linux/UNIX System Administration	3

<b>Emphasis Area: Information Security and Assurance</b>					
<b>Total Number of Credits: 13</b>					
<b>Core Requirements: 10 credits</b>			AND Select <b>one</b> course from the following: (3 credits)		
ITT 2020	Network Security Fundamentals	3	ITT 2042	Implementing Secure Converged Wide Area Networks (CCNP-2)	3
ITT 2025	Firewalls and Network Security	3	ITT 2043	Building Converged Cisco Multilayer Switched Networks (CCNP-3)	3
ITT 2075	Wireless Network Security	3	ITT 2044	Optimizing Converged Networks (CCNP-4)	3
ITT 2780	Internship	1	ITT 2065	Information Security Management	3
			MCST 1013	Supporting Microsoft Windows Server 2003	3
			MCST 2032	Linux/UNIX System Administration	3

<b>Emphasis Area: MCSA</b>					
<b>Total Number of Credits: 13</b>					
<b>Core Requirements: 10 credits</b>			AND Select <b>one</b> course from the following: (3 credits)		
MCST 1011	Supporting Microsoft Windows XP Prof.	3	MCST 1001	PC Hardware and Software	4
MCST 1013	Supporting MS Windows Server 2003	3	MCST 2015	Administering the Active Directory	3
MCST 2017	Windows Server 2003 Network Infrastruct.	3	ITT 2020	Network Security Fundamentals	3
ITT 2780	Internship	1			

<b>Emphasis Area: Storage Area Networking</b>					
<b>Total Number of Credits: 13</b>					
<b>Core Requirements: 10 credits</b>			AND Select <b>one</b> course from the following: (3 credits)		
ITT 2036	Network Attached Storage	3	ITT 2020	Network Security Fundamentals	3
ITT 2038	Storage Area Network Management	3	ITT 2042	Implementing Secure Converged Wide Area Networks (CCNP-2)	3
ITT 2051	Enterprise Computing Virtualization	3	ITT 2043	Building Converged Cisco Multilayer Switched Networks (CCNP-3)	3
ITT 2780	Internship	1	ITT 2044	Optimizing Converged Networks (CCNP-4)	3
			MCST 1013	Supporting Microsoft Windows Server 2003	3
			MCST 2032	Linux/UNIX System Administration	3

<b>Emphasis Area: VoIP Infrastructure and Management</b>					
<b>Total Number of Credits: 13</b>					
<b>Core Requirements: 10 credits</b>			AND Select <b>one</b> course from the following: (3 credits)		
ITT 1070	Telephony Systems	3	ITT 2020	Network Security Fundamentals	3
ITT 2060	Computer Telephony Integration	3	ITT 2042	Implementing Secure Converged Wide Area Networks (CCNP-2)	3
ITT 2070	Video Integration	3	ITT 2043	Building Converged Cisco Multilayer Switched Networks (CCNP-3)	3
ITT 2780	Internship	1	ITT 2044	Optimizing Converged Networks (CCNP-4)	3
			MCST 1013	Supporting Microsoft Windows Server 2003	3
			MCST 2032	Linux/UNIX System Administration	3

**General Requirements:**

1. Certificates: 9 to 30 earned college-level credits; one third of credits must be earned at Century College.  
Diplomas: 31 to 48 earned college-level credits; one third of credits must be earned at Century College.  
AAS: At least 64 earned college-level credits (numbered 1000 or above). At least 20 credits must be earned at Century College.
2. Century college-level GPA of 2.0; Required career and occupational courses GPA of 2.0; MnTC GPA of 2.0.
3. A grade of C or higher in ENGL 1021 (for Diplomas and 30 credit Certificates ONLY IF this is the Goal 1 course selected.) (Exception: 16 credit certificates)

**Assessment:** *Assessments are required for all students* before registering for classes. Students may be required to take developmental courses in English, Reading and Mathematics based upon their assessment scores. For important information and exemptions see [www.century.edu/futurestudents/assessment](http://www.century.edu/futurestudents/assessment).

**References to the Minnesota General Education Transfer Curriculum (MnTC):** On this guidesheet, notations such as “Goal 1-Communication: 3 credits” are used to refer to the goals of the Minnesota General Education Transfer Curriculum. Refer to the MnTC Course List for the specific courses from which students may choose to fulfill the MnTC requirements of the program, found in the catalog, the Counseling Center and on the Century website. Students should be aware that it may be necessary to select additional MnTC credits beyond the minimum required in each goal area, to reach the total MnTC/General Education credits required for their program.

**Career Information:** Counselors are available in the Counseling and Career Center, Room 2410 West, to assist with educational and career planning. Resources include career interest and personality inventories and print and web-based occupational and educational information, e.g., occupational descriptions, employment outlook, earnings, education/training requirements and sources. Consult the **GPS LifePlan** link on the Century website for information on these and more resources for your career, work, and educational planning!

**Transfer:** Some programs are intended primarily for employment preparation rather than transfer to a four-year institution. Some courses may not transfer to a number of four-year colleges. If you are considering the possibility of transfer, you may wish to talk with a counselor or the program instructor before registering to discuss your goals and look at programs designed for transfer.

**Time Limit for Meeting Graduation Requirements:** See Century College catalog “Graduation” for information.

**Academic Petitions:** Any exceptions to the program requirements must be petitioned through the Vice President of Academic Affairs.

**Recommended first semester courses:** ITT 1020, ITT 1021 and ITT 1031.

**Important Telephone Numbers: (651 Area Code)**

Admission Office 773-1700  
Counseling Office 779-3285  
Financial Aid Office 779-3305

**Program Instructors:**

Scott Simenson Office: 1744 East 779-3236  
Luke Andresen Office: 1741 East 779-5833  
Tom Prescott Office: 1741 East 755-9720