

Manitoba Curriculum Framework of Outcomes

Networking & Cyber Security Grade 12

In order to give students the opportunity to earn certain industry certifications, most of the courses include some or all of the outcomes or content found in the documents that are associated with those certifications. Since these outcomes and content are proprietary to those organizations (such as Microsoft and Cisco) they cannot be included in this curriculum. Teachers will have to gain access to those industry documents and certifications in order to teach those outcomes.

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Goal 1: Describe and apply appropriate health and safety practices.			
GLO 1.1: Describe and apply appropriate health and safety practices			
Maintain a safe, uncluttered and organized workspace.	→	→	→
Demonstrate awareness of health and safety issues related to lighting and glare, including monitors.	→	→	→
Demonstrate awareness of safe working conditions and safe lab procedures	→	→	→

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Goal 2 Demonstrate an awareness of the evolution, technological progression, and emerging trends in IT.			
GLO 2.1: Describe the evolution, technological progression and emerging trends in IT.			
Demonstrate the ability to describe the evolution, technological progression and emerging trends in IT as described in <i>Linux Essentials by the Network Development Group (NDG)</i> .	Demonstrate the ability to describe the evolution, technological progression and emerging trends in networking.	Demonstrate the ability to describe the evolution, technological progression and emerging trends in server administration.	Demonstrate the ability to describe the evolution, technological progression and emerging trends in networking and cyber security.
Goal 3 Demonstrate understanding of hardware, operating systems, applications, networking and cyber security .			
GLO 3.1: Demonstrate understanding of the concepts related to hardware .			
Demonstrate understanding of the concepts related to hardware as described in <i>Linux Essentials by the Network Development Group (NDG)</i> .			
GLO 3.2: Demonstrate a theoretical understanding of operating systems .			
Demonstrate a theoretical understanding of operating systems as described in <i>Linux Essentials by the Network Development Group (NDG)</i> .			

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GLO 3.3: Demonstrate a theoretical understanding of applications .			
Demonstrate a theoretical understanding of applications as described in <i>Linux Essentials by the Network Development Group (NDG)</i> .			
GLO 3.4: Demonstrate a theoretical understanding of networking .			
Demonstrate a theoretical understanding of networking as described in <i>Linux Essentials by the Network Development Group (NDG)</i> .	Demonstrate a theoretical understanding of networking as described in <i>Level 1 Introduction to Networks</i> (Cisco Networking Academy).		Demonstrate understanding of the theory required to configure a network in a secure manner.
GLO 3.5: Demonstrate a theoretical understanding of cyber security .			
Demonstrate a theoretical understanding of cyber security as described in <i>Linux Essentials by the Network Development Group (NDG)</i> .			Demonstrate understanding of the theory required to configure a network.

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Goal 4: Install, configure, manage, secure and troubleshoot devices , operating systems and applications.			
GLO 4.1: Install devices, operating systems, and their associated software.			
		Demonstrate the ability to install devices, operating systems, and their associated software following the guidelines described in <i>Microsoft Technology Associate Certification Exam Review Kit: 98-365 Windows Server Fundamentals</i> .	
GLO 4.2: Configure devices, operating systems, and their associated software.			
Demonstrate the ability to configure devices, operating systems, and their associated software following the guidelines described in <i>Linux Essentials by the Network Development Group (NDG)</i> .		Demonstrate the ability to configure devices, operating systems, and their associated software following the guidelines described in <i>Microsoft Technology Associate Certification Exam Review Kit: 98-365 Windows Server Fundamentals</i> .	
GLO 4.3: Manage devices, operating systems, and their associated software.			
Demonstrate the ability to manage devices, operating systems, and their associated software following the guidelines described in <i>Linux Essentials by the Network Development Group (NDG)</i> .		Demonstrate the ability to manage devices, operating systems, and their associated software following the guidelines described in <i>Microsoft Technology Associate Certification Exam Review Kit: 98-365 Windows Server Fundamentals</i> .	

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<p>GLO 4.4: Secure devices, operating systems, and their associated software.</p>			
<p>Demonstrate the ability to secure devices, operating systems, and their associated software following the guidelines described in <i>Linux Essentials by the Network Development Group (NDG)</i>.</p>			
<p>Goal 5: Design, configure, manage, secure and troubleshoot networks, operating systems and applications.</p>			
<p>GLO 5.1: Design networks and their associated software.</p>			
			<p>Demonstrate the ability to design a network.</p>

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GLO 5.2: Configure networks and their associated software.			
	Configure networks and their associated software following the guidelines described in <i>Level 1 Introduction to Networks</i> (Cisco Networking Academy).)		<p>Demonstrate the ability to configure a network.</p> <p>Demonstrate the ability to develop a IPv4 address scheme.</p> <p>Demonstrate the ability to initialize and reload devices.</p> <p>Demonstrate the ability to configure device IPv4 and security settings.</p> <p>Demonstrate the ability to test and verify IPv4 end-to-end connectivity.</p> <p>Demonstrate the ability to configure IPv6 addressing on R1.</p> <p>Demonstrate the ability to test and verify IPv6 end-to-end connectivity.</p> <p>Demonstrate the ability to use an IOS CLI to gather device information</p> <p>Demonstrate the ability to save an R1 configuration to a TFTP server</p>

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<p>Goal 6: Document the installation, design, configuration, management, security and troubleshooting of devices, networks, and their associated software.</p>			
<p>GLO 6.1: Document the installation, design, configuration, management, security and troubleshooting of devices, networks, and their associated software.</p>			
			<p>Demonstrate the ability to document the design, installation, configuration, management, security and troubleshooting of networks and their associated software.</p>
<p>Goal 7: Describe and demonstrate the transferable cross-curricular knowledge and skills relevant to IT.</p>			
<p>GLO 7.1: Research, read, interpret and communicate information relevant to IT.</p>			
			<p>Demonstrate the ability to research, read, interpret and communicate information relevant to networking and cyber security.</p>
<p>Goal 8: Demonstrate awareness of sustainability as it pertains to networking and cyber security.</p>			
<p>GLO 8.1: Describe the IT industry's sustainability practices and impact on the environment.</p>			
			<p>Demonstrate awareness of the lifespan of electronic devices, and its impact on electronic waste.</p>

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<p>GLO 8.2: Describe the impact of human sustainability on the well-being of those employed in IT and the users of their services.</p>			
<p>Demonstrate awareness of concerns related to hyper-connectivity.</p>			<p>Demonstrate awareness of the stresses related to staying current with new technologies.</p>
<p>GLO 8.3: Describe sustainable business practices within the IT industry.</p>			
<p>Demonstrate understanding of sustainable business practices.</p>			<p>Demonstrate awareness of the types of business practices that promote the long-term viability of businesses such as those found in networking and cyber security.</p>
<p>Goal 9: Demonstrate awareness of the ethical and legal standards as they pertain to IT.</p>			
<p>GLO 9.1: Demonstrate awareness of the ethical and legal standards as they pertain to IT.</p>			
		<p>Demonstrate awareness of the ethical and legal considerations related to having access to sensitive and personal information, such as passwords, etc.</p>	<p>Demonstrate awareness of the ethical and legal standards as they pertain to networking and cyber security.</p>

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Goal 10: Demonstrate employability skills.			
GLO 10.1: Demonstrate fundamental employability skills.			
Demonstrate regular and punctual attendance.	→	→	→
Demonstrate the ability to communicate respectfully and effectively with teachers, supervisors, co-worker, and students.	→	→	→
Demonstrate accountability by taking responsibility for their actions.	→	→	→
Demonstrate adaptability, initiative and effort.	→	→	→
Demonstrate teamwork skills.	→	→	→
Demonstrate the ability to stay on task and effectively use time in class and work environments.	→	→	→
Demonstrate the responsible use of wireless communication devices.	→	→	→

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GLO 10.2: Demonstrate an awareness of cultural proficiency , and its importance in the workplace.			Demonstrate the skills and knowledge required to work with people from a variety of cultures.
GLO 10.3: Demonstrate an understanding of the business operation of an IT organization.			Demonstrate the knowledge and skills required to work in an IT enterprise.
GLO 10.4: Demonstrate critical thinking skills .			Demonstrate the critical thinking skills required to design, install, configure, manage, secure and troubleshoot networks and their associated software.
GLO 10.5: Demonstrate project management skills.			Demonstrate the project management skills required to design, install, configure, manage, secure and troubleshoot networks and their associated software.

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Goal 11: Demonstrate understanding of the IT industry .			
GLO 11.1: Demonstrate an understanding of the scope of the IT industry .			
			Demonstrate an understanding of the scope of the IT industry, locally and globally.
GLO 11.2: Demonstrate understanding of the educational and career opportunities , as well as industry and professional associations .			
	Demonstrate understanding of the educational and career opportunities in networking.	Demonstrate understanding of the educational and career opportunities in server administration.	Demonstrate understanding of the educational and career opportunities, as well as industry and professional associations in networking and cyber security. Demonstrate the job search skills required to find employment in the IT industry.
GLO 11.3: Demonstrate understanding of working conditions in IT.			
		Demonstrate understanding of the working conditions found in the area of server administration.	