

# Advanced Diploma: Network Engineering Technology

Students available for Summer, Fall, and Winter work terms  
(4 months - 360 hour minimum)

**For more information contact:**

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## Meet our Students

Our students learn from an in-depth curriculum on the technologies of the Internet, as part of the longest-standing Internet engineering undergraduate program in Canada. The students acquire comprehensive knowledge of Internet infrastructure and security, and gain hands-on experience in IP engineering, cloud computing architecture, network security, wireless and voice communications. Graduates from this program specialize in the technologies that run the Internet and they go on to work for a variety of Canadian and global institutions.

## Core Competencies and Skills

- Designing complex network topologies from enterprise to carrier level.
- Architecting and deploying cloud infrastructure.
- Designing and implementing programming scripts with Python to solve network operation problems.
- Configuring and managing security firewalls.
- Using Infrastructure as Code to deploy cloud resources and security firewalls.
- Documenting network information using technical writing style and diagramming tools.
- Implementing network services using
- Operating systems Linux and Windows server.



## Work Term Capabilities

- Analyzing and troubleshooting network traffic issues using a sniffer application.
- Configuring and troubleshooting layer 2 LAN switches with VLANs, trunking and STP protocol.
- Building and debugging GRE IPsec Virtual Private Networks.
- Implementing and securing Wireless networks IEEE 802.11.
- Designing, building and analyzing a SIP-based VoIP PBX.
- Writing Python scripts to manage and configure network resources such as routers, switches and servers.
- Automatizing network configuration with Ansible.
- Configuring and managing Palo Alto firewalls.
- Installing, configuring and maintaining Linux application services DNS, DHCP, HTTP/HTTPS web servers, SNMP monitoring, CA PKI and Radius AAA access control.
- Creating and managing Docker Containers and Kubernetes clusters in a cloud provider.
- Designing and implementing carrier core using MPLS L3VPN, L2 VPNs, EVPN with VXLAN, L3 VPN6 and Traffic Engineering. Protocols BGP, OSPF, ISIS, LDP, RSVP.
- Deploying virtual private clouds using user interfaces and infrastructure as code (IaaS) AWS CloudFormation and Hashicorp Terraform.

# Course Schedule, Courses & Work Term (WT)

Year 1			Year 2			Year 3			
Sept/Dec	Jan/Apr	May/Aug	Sept/Dec	Jan/Apr	May/Aug	Sept/Dec	Jan/Apr	May/Aug	Sept/Dec
Term 1	Term 2	Break	Term 3	WT1	Term 4	WT2	Term 5	WT3	Term 6

There is also a January intake for this program. These students are available for Summer, Fall, and Winter work terms beginning with a Summer WT1 upon completion of Term 3.

Term 1	Term 2
<ul style="list-style-type: none"> <li>• Introduction to Data Communication and Networking</li> <li>• The Art of Technical Communication</li> <li>• Programming Foundations – Python</li> <li>• Computer Math Fundamentals</li> <li>• Web Development</li> <li>• General Education Course (Open)</li> </ul>	<ul style="list-style-type: none"> <li>• Cloud Enabled Networks</li> <li>• Enterprise Networks</li> <li>• Object Oriented Programming 2 - Java</li> <li>• Database Design &amp; Implementation</li> <li>• Linux/Unix Operating Systems</li> <li>• General Education Course (Open)</li> </ul>
Term 3	Term 4
<ul style="list-style-type: none"> <li>• Database Design and Implementation</li> <li>• Programming for Networks - Python</li> <li>• Physical Layer</li> <li>• Computer and Network Security</li> <li>• Network Service Applications</li> <li>• Windows Administration</li> <li>• General Education Course (Open)</li> </ul>	<ul style="list-style-type: none"> <li>• Network Engineering 1</li> <li>• Database Management</li> <li>• IT Project Management Using PMP</li> <li>• Wi-Fi Networks</li> <li>• Cloud Architecting</li> <li>• Machine Learning AI</li> </ul>
Term 5	Term 6
<ul style="list-style-type: none"> <li>• Network Engineering 2</li> <li>• Software Defined Networks</li> <li>• Carrier Networks</li> <li>• Innovation: From Idea to Execution</li> <li>• Probability</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Network Engineering 3</li> <li>• Applied Security</li> <li>• Internet Core Technologies</li> </ul>



## Additional Information:

- Program Website – Network Engineering Technology
- Sheridan Works Job Board
- Employer Testimonials
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