Course & Section Code:	OPS345V1A
Course Name:	Open System Application Server
Course Start & End Dates:	Start Date: May 17, 2023, End Date: August 16, 2023
Learning Mode:	Online Synchronous (OS) For a full description, visit the Learning Modes page
Q&A / Virtual Office Hour:	6:30 PM – 9:30 PM via Cisco Webex
Instructor Name & Email:	Jason Pang: jason.pang@senecacollege.ca

Seneca would like to acknowledge the land on which its buildings are housed, and where students, faculty, support staff and members of the public gather. This land is the traditional territory of the Mississaugas of the Credit First Nation. We are guests on this space, and it is our shared obligation to respect, honour and sustain the land.

Land Acknowledgement Video

Welcome to OPS345. Please review this addendum to the general course outline carefully. It is your guide to the course and provides a weekly breakdown of the work, readings and evaluations required. I look forward to working with you!

Course Outline (Full course outline available [here])

Course Learning Outcomes (CLOs):
Upon successful completion of this course the student will be able to:

Configure the operating system on a device to allow it to perform routing functions on a network.
1. Install software to provide end-users with access to commonly used networking services.
2. Configure various client/server software packages to provide file-sharing and interoperability between various platforms.
3. Diagnose malfunctions with computers and the network to ensure the maximum availability of network services.
4. Implement data/device recovery policies to ensure minimal network downtime and data loss.
5. Configure authentication and logging services to ensure secure access to a network and provide network monitoring

Prescribed Text:
Title: Unix and Linux System Administration Handbook - 5th Edition
Author: Nemeth, Snyder & Hein
Publisher: Addison-Wesley Professional PTG
ISBN-10: 0134277554
ISBN-13: 9780134277554

Visit the Seneca Bookstore for more information.

Modes of Evaluation:
1.	Labs:	(10 @ 3% each)	....	30%
2.	Assignments		....	20%
3.	Midterm Test		....	25%
4.	Final Exam		....	25%

Weekly Schedule (Subject to Change)

Week & Date	Synchronous Class Time and Platform	Synchronous Topics and Activities	Asynchronous Activities, Readings and Deadlines	Related Course Learning Outcomes (CLOs)
1 May 17, 2023	6:30PM – 9:30PM Cisco Webex	**Introduction to OPS345:** • outline, policies, email • labs, assignments, midterm, exam	Prep Lab: CentOS Installation	
2 May 24, 2023	6:30PM – 9:30PM Cisco Webex	**Basic Networking & Backups:** • ifconfig & route vs ip; resolv.conf, hostnamectl • /etc/sysconfig/network-scripts/ • Network connection troubleshooting • SSH & SSH Keys • rsync & cron	Lab 1: Network/Backup	1, 3, 4
3 May 31, 2023	6:30PM – 9:30PM Cisco Webex	**Packet Filtering Using iptables:** • What is Packet Filtering • iptables Basics (Tables, Chains, Targets) • iptables Commands & Options • iptables Command Examples • Saving iptables Settings	Lab 2: Packet Filtering Using iptables	1, 3, 5

4
June 07, 2023
	6:30PM – 9:30PM
	Cisco Webex
		NAT / iptables Best Practices
		• Network Address Translation (NAT Table - iptables)
		• Debugging firewall problems:
		   o Troubleshooting Procedures
		   o Troubleshooting Tools
		   o Troubleshooting Exercises
			Lab 3:
			Additional iptables Troubleshooting
				1, 5

5 June 14, 2023	6:30PM – 9:30PM Cisco Webex	**Domain Name System (DNS):** • Address resolution mechanism (zone definitions) • DNS server setup • Querying Name Servers • Reverse DNS lookups **Performing DNS Queries** • SOA, MX, TXT records • Coordinating multiple servers OPS345 - Assignment 1 released – 10%	Lab 4: DNS	1, 3

Week & Date	Synchronous Class Time and Platform	Synchronous Topics and Activities	Asynchronous Activities, Readings and Deadlines	Related Course Learning Outcomes (CLOs)
6 June 21, 2023	6:30PM – 9:30PM Cisco Webex	**Mail Servers - SMTP** • Mail Server Elements (MSA/MTA, MUA, MDA, MS, AA, SMTP) • Install and using mailx application (MUA) • Analyze Email Message Headers • Setup Postfix Server (no encryption) • Sending Email from VM to external Mail Account • Troubleshooting	Lab 5: Simple Mail Server Setup	1, 3
7 June 28, 2023	6:30PM – 9:30PM Cisco Webex	Evaluation: Midterm Test – 25%		
8 July 05, 2023	6:30PM – 9:30PM Cisco Webex	**Using a Centralized Message Store (IMAP)** • Specifying Domains for Received Email (MTA) • Installing & Configuring MDA/LDA • Send & Verify Receiving Mail on VMs • Troubleshooting	Lab 6: Mail Server Setup: LDA	1, 3
9 July 12, 2023	6:30PM – 9:30PM Cisco Webex	**File Server (Samba):** • smbclient, smbmount (mount -t cifs) • smb.conf, testparm, smbpasswd, pdbedit • getsebool, setsebool	Lab 7: Samba Server	1, 2, 3
10 July 19, 2023	6:30PM – 9:30PM Cisco Webex	**Web Server (Apache):** • LAMP stack installation and configuration	Lab 8: Web Server	1, 3
11 July 26, 2023	6:30PM – 9:30PM Cisco Webex	**Webmail: Encrypted connections** • WebMail installation and configuration • Setting Up a Self-Serve Certificate • Configuring Postfix (VM2) for Encryption (TLS) • Setting up Encryption with Thunderbird MUA • Setting Up Dovecot MDA/LDA for Encryption (SSL) OPS345 - Assignment 2 released – 10%	Lab 9: Encrypted connections and webmail	1, 3

Week & Date	Synchronous Class Time and Platform	Synchronous Topics and Activities	Asynchronous Activities, Readings and Deadlines	Related Course Learning Outcomes (CLOs)
12 August 02, 2023	6:30PM – 9:30PM Cisco Webex	**OpenLDAP:** • LDAP Overview • Client setup • Adding users	Lab 10: OpenLDAP	1, 5
13 August 09, 2023	6:30PM – 9:30PM Cisco Webex	Exam Review		
14 August 16, 2023	6:30PM – 9:30PM Cisco Webex	Evaluation: FINAL EXAM – Wednesday August 16, 2023 – 25%		

*** Students must obtain a passing mark of 50% on the final exam and assignments as well as a cumulative grade of 50% or better in the subject in order to pass the class ***

Learning Strategies for Success, Policies and Procedures

Class Preparation: Always come prepared to learn, by completing your weekly readings prior to each class, participating in online discussions, attending all classes and submitting any assigned work on time. Your instructor will create and post all content relating to course delivery and assessment (such as lecture notes and recordings, assignments and rubrics/evaluation schemes, reading materials, etc.) in advance of the scheduled synchronous activity, to provide students with adequate time to prepare.

Attendance: It is important that students attend all classes and/or review class recordings for increased understanding and best course outcomes. As courtesy/consideration for others, plan to arrive on time as late arrivals are disruptive to the class, even in a virtual learning environment.

Blackboard Access: Students should regularly check their course Blackboard site for recaps or highlights of past lectures, general weekly announcements about any changes and/or reminders of scheduled events upcoming in the course, and notifications regarding the availability of marks and feedback on graded assessments (My Grades).

Email: Students should regularly check their "@myseneca.ca" student email for communications on course- and college-related matters. To learn how to set up your email or if you're experiencing technical issues, contact ITS.

Assignments: All assignments must be submitted by the due date stated by the instructor and in the manner directed by the instructor. Late assignments will be penalized as per instructor's guidelines. In extenuating circumstances, students must notify the instructor in advance of the deadline for possible extensions. Valid documentation (such as an original doctor's note) may be required. Make-up opportunities may be arranged and communicated by the instructor.

Academic Support: A variety of free academic support services are available to all Seneca students. Visit the Learning Centres for more information. Additional resources are listed below:
- Learning Online at Seneca
- Services for Students
- The Learning Portal
- Academics and Student Services

Student Accommodations: All requests for academic accommodations will be handled by the Counseling and Accessibility Services office, which will electronically provide the academic accommodation plan to the appropriate instructor and/or designate of the program area. Faculty will arrange testing accommodations for eligible students. For more information or to request academic accommodations, visit Counselling and Accessibility Services.

Recording Lectures and Educational Activities:	To support access to course content, lectures may be recorded with the links posted on Blackboard. These resources are intended to be used as a student study aid and are not a substitute for participation (exception may include remote students residing in another time zone).

Video recordings will primarily capture the instructor and onscreen content. Students will not be visible on video recordings unless their webcam is enabled. Voices will be captured as audio recording along with questions posted in the chat tool. Students may speak with their instructor to determine alternative means of participating if they are concerned about their voice or text being recorded.

All recordings must adhere to the Recording Lectures and Educational Activities Policy. |
| **Academic Integrity:** | Seneca upholds a learning community that values academic integrity, honesty, fairness, trust, respect, responsibility and courage. These values enhance Seneca's commitment to deliver high-quality education and teaching excellence, while supporting a positive learning environment. Ensure that you are aware of Seneca's Academic Integrity Policy. Review Section 2 of the policy for details regarding approaches to supporting integrity. Section 2.3 and Appendix B of the policy describe various sanctions that can be applied, if there is suspected academic misconduct. Plagiarism is also a form of cheating and there can be serious penalties. |

Approved by: