

ACIT 2420

Linux System Administration

School	School of Computing and Academic Studies
Program	Computer Information Technology
Course Credits	4
Minimum Passing Grade	50%
Start Date	September 02, 2025
End Date	December 12, 2025
Total Hours*	60
Total Weeks	15
Hours/Weeks	4
Delivery Type	Lecture
Zero Textbook Cost	Yes
Prerequisite(s)	<ul style="list-style-type: none">• 50% in ACIT 1420
CRN	48474

Acknowledgement of Territories

The British Columbia Institute of Technology acknowledges that our campuses are located on the unceded traditional territories of the Coast Salish Nations of Skwxwú7mesh [1] (Squamish), səl̓ílwətaʔɬ [2] (Tsleil-Waututh), and xwməθkwəyəm [3] (Musqueam).

Instructor Details

Name	Nathan McNinch
E-mail	nmcninch@bcit.ca
Location	5th floor faculty offices
Office Hours	By appointment. Please email me at least 24 hours in advance to arrange an appointment.

Course Description

This course teaches students basic system administration tasks using Linux. At the end of the course the students should be able to install and configure a Linux-based systems. Configuration tasks include installing the software, adding hardware, networking the servers, managing users, monitoring performance, scripting and troubleshooting. Students are also expected to configure common server service.

Course Learning Outcomes/Competencies

Upon successful completion of this course, the student will be able to:

- Write shell scripts to make reproducible changes to a system.
- Manage files from the command line.
- Access help & documentation.
- Create, view, and edit text files.
- Manage local users and groups.
- Control access to files.
- Monitor and manage processes.
- Control services and daemons
- Configure and secure OpenSSH service.
- Analyze and store system logs.
- Configure a web server.
- Archive and copy files between systems.
- Install and update software packages.
- Access Linux file systems.

Learning Resources

Software:

- Terminal emulator

Flipped Learning Material:

- Weekly flipped material will be provided in class.
- This material should be reviewed before the following class

Accounts and Services:

- DigitalOcean
- sourcehut

Evaluation Criteria

Criteria	%	Comments
Flipped material review	10	10 reviews, 1% each. To be done in class
Labs	10	10 labs, 1% each. To be done in class
Tests	30	2 tests, 15% each
Midterm Exam	20	
Final Exam	30	

Attendance Requirements

Regular attendance in classes is critical to student success and is monitored. Unapproved absence of 2 or more classes may result in withdrawal from the course or program. Please see Policy 5101 - Student Regulations: <https://www.bcit.ca/files/pdf/policies/5101.pdf>

Course Specific Requirements

All material must be submitted using D2L, assignments submitted via email, messaging app... will not be graded.

Course Schedule and Assignments

Week	Week Start	Topics	Assessments
1	Sept 01	<ul style="list-style-type: none">- Introductions- Linux: what, where and why- Linux environment set up	Flipped material review Lab
2	Sept 08	<ul style="list-style-type: none">- Working in the Terminal- Executing commands- Navigating and exploring- Git review	Flipped material review Lab

Week	Week Start	Topics	Assessments
3	Sept 15	- The Linux filesystem - find files with find and grep - editing files with vi	Flipped material review Lab
4	Sept 22	- Processes - How commands are run in the shell - file path - shell configuration files	Flipped material review Lab
5	Sept 29	- Shell scripting 1	Flipped material review Lab Make up for Tuesday class (which falls on a holiday) will happen Oct 07, after Test 1.
6	Oct 06	Test 1	Test 1
7	Oct 13	- Shell scripting 2	Flipped material review Lab
8	Oct 20	Midterm week, no class	Midterm Exam
9	Oct 27	- Managing users and groups - permissions	Flipped material review Lab
10	Nov 03	- Linux services - Service managers	Flipped material review Lab
11	Nov 10	- Securing a remote server - Working with logs	Flipped material review Lab Make up for Tuesday class (which falls on a holiday) will happen Nov 18, after Test 2.
12	Nov 17	Test 2	Test 2
13	Nov 24	- File sharing - Web servers	Flipped material review Lab
14	Dec 01	Review/makeup	
15	Dec 08	Final Exam week, no class	Final Exam

Course Schedule is subject to change based on class progress.

BCIT Policy

The following statements are in accordance with the BCIT Policies 5101, 4501, 5103, 5104, and 7507, and their accompanying procedures. To review these policies and procedures please click on the links below.

Attendance

In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with their instructor or Program/Department Head, stating the reason for the absence. When absences result in missed safety requirements, exams, or other deadlines, an instructor or Program/Department Head may request appropriate supporting documentation, including a medical note. For all other absences, the student is responsible to ensure they seek out missed information, preferably from a classmate or recording (when available). Please see [BCIT Policy 5101 - Student Regulations \[4\]](#), and accompanying procedures, for more information.

Attempts

As stated in [BCIT Policy 5103 - Student Evaluation \[5\]](#), students must successfully complete a course within a maximum of three (3) attempts at the course. Students with two attempts in a single course will be allowed to repeat the course only upon permission from the Associate Dean. Students who have not successfully completed a course within three attempts will not be eligible to graduate from their respective program. For those courses or programs that have Education Council approval, the number of attempts as stated in the evaluation section of the course outline shall apply.

Academic Integrity

It is the responsibility of all students to be familiar with the Student Code of Academic Integrity. Violations of the Code, including plagiarism, cheating, misrepresentation, and academic advantage, are prohibited and will be handled in accordance with [BCIT Policy 5104 – Student Code of Academic Integrity \[6\]](#), and accompanying procedures.

Accommodation

Any student who may require accommodation from BCIT because of a physical or mental disability should refer to [BCIT's Policy 4501 - Accommodation for Students with Disabilities \[7\]](#), and contact BCIT's Accessibility Services (SW1 2360, 604-451-6963) at the earliest possible time. Requests for accommodation must be made to Accessibility Services, and should not be made to a course instructor or Program area.

Any student who needs special assistance in the event of a medical emergency or building evacuation (either because of a disability or for any other reason) should promptly inform their course instructor(s) and Accessibility Services of their personal circumstances.

Human Rights, Harassment and Discrimination

The BCIT community is made up of individuals from every ability, background, experience and identity, each contributing uniquely to the richness and diversity of the BCIT community as a whole. In recognition of this, and the intrinsic value of our diversity, BCIT seeks to foster a climate of collaboration, understanding and mutual respect between all members of the community and ensure an inclusive accessible working and learning environment where everyone can succeed.

[Respect, Diversity, and Inclusion \[8\]](#) is a supportive resource for both students and employees of BCIT, to foster a respectful learning and working environment. Any student who feels that they are experiencing discrimination or harassment (personal or human rights-related) can confidentially access this resource for advice and support. Please see [BCIT Policy 7507 – Harassment and Discrimination \[9\]](#) and accompanying procedure.

Students should make themselves aware of additional Education, Administration, Safety and other BCIT policies listed at [https://www.bcit.ca/about/administration/policies.shtml \[10\]](https://www.bcit.ca/about/administration/policies.shtml [10])

Guidelines for School of Computing and Academic Studies

No school specific policies, please refer to main BCIT Policy.

Approved

I verify that the content of this course outline is current.

Nathan McNinch, Instructor

September 04, 2025

I verify that this course outline has been reviewed.

Thomas Lane, Program Head

September 04, 2025

I verify that this course outline has been reviewed and complies with BCIT policy.

Donna Turner, Associate Dean

September 05, 2025

Note: Students will be given reasonable notice if changes are required to the content of this course outline.

*Course hours and credits are calculated per [Policy 5012 \[11\]](#) and the associated procedure [\[12\]](#).

Total hours – Example of 3 credit lecture/lab course:

- **Full-time course:** 45 hours of scheduled learning
- **Flexible Learning course:** 36 hours of scheduled learning plus 9 hours of independent (non-scheduled, non-instructional) learning

List of links found on this page

This list includes all links found on this page for your reference.

- [1] <https://www.squamish.net/>
- [2] <https://twnation.ca/>
- [3] <https://www.musqueam.bc.ca/>
- [4] <https://www.bcit.ca/files/pdf/policies/5101.pdf>
- [5] <https://www.bcit.ca/files/pdf/policies/5103.pdf>
- [6] <https://www.bcit.ca/files/pdf/policies/5104.pdf>
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- [10] <https://www.bcit.ca/about/administration/policies.shtml>
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- [12] <https://www.bcit.ca/files/pdf/policies/5012-pr1.pdf>