ACIT 1420 - Introduction to Systems Administration

School:	School of Computing and Academic Studies
Program:	Computer Information Technology
Course Credits:	4
Minimum Passing Grade:	50%
Start Date:	September 03, 2019
End Date:	December 13, 2019
Total Hours:	60
Total Weeks:	15
Hours/Weeks:	4
Delivery Type:	Lecture/Lab
CRN:	44279

Instructor Details

Name: Lei Zhang
Email: lzhang200@bcit.ca
Location: DTC 617
Office Hours:

Monday: 11:30 am - 12:30 pm

Tuesday: 12:30 pm - 1:30 pm

Wednesday: 9:30 am - 11:30 am

Or by appointment.

Course description

This course introduces students to the configuration, maintenance, and administration of a Windows laptop computer. Topics include: An introduction to PC hardware, functions of an operating system (OS), Windows OS architecture, file and disk management, BIOS and UEFI, multi-boot, virtual machines, software installation/removal, performance tuning, backing up and protecting data, troubleshooting, networking, security, virus protection, and firewalls

Course learning outcomes / competencies

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

- Explain the purpose of different personal computer (PC) hardware components.
- Discuss the features and services provided by a typical PC operating system.
- Describe the architecture of the Windows operating system.
- Customize BIOS and UEFI settings.
- Configure a PC as a multi-boot device.
- Explain OS virtualization.
- Install and configure a Virtual Machine.
- Manage partitions, files, and folders on a Windows PC.
- Backup and restore data files on a Windows PC.
- Use Windows System Restore capabilities to recover the Windows OS.
- Install, update, and remove PC software.
- Manage the PC using the Windows Control Panel.
- Use Windows PowerShell for basic PC management operations.
- Start, stop, and disable Windows services.
- Performance tune a Windows computer.
- Configure Windows PC firewall and security settings.

Evaluation criteria

Criteria	%	Comments
Quizzes	15%	• Passing grade for this course is 50% • Students must earn a minimum of 50% on the final exam to pass this course
Lab Assignments	25%	
Group Presentation	10%	
Participation	10%	
Midterm	15%	
Final	25%	
TOTAL	100	

Attendance requirements

Attendance in lectures and labs is mandatory. Since this is a full-time course, students are required to **work on campus** during regular school hours. Attendance will be taken in all scheduled lectures and labs (no makeup lectures or labs).

In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with his/her Instructor indicating the reason for the absence.

Prolonged illness which causes the student to miss **10%** or more of the lessons will require a BCIT-approved medical certificate submitted to the department, substantiating the reason for the absence.

Excessive absence of **10%** or more may result in failure or forced withdrawal from this course.

Learning resources

Required:

The course material will be a combination of online reading, and the book:
New Perspectives Computer Concepts 2018: Introductory, Loose-leaf Version (***ISBN-13: 978-1337388542***)

Recommended:

Mike Meyers' CompTIA A+ Guide to Managing and Troubleshooting PCs, Fifth Edition (Exams 220-901 & 220-902) 5th Edition (***ISBN: 978-1-25-958955-3***)

Principles of Computer Security: CompTIA Security+ and Beyond, Fifth Edition (***ISBN-13: 978-1260026016***)

Furthermore:

Students must bring an appropriate laptop (above minimum hardware requirements) that is running Windows 10 1803 above. Students must have administrative privileges on their laptop, as lesson will require installation, configuration and management of applications on their computer.

Course specific requirements

This course includes mandatory online learning activities. Lack of participation in the online portion of this class may result in failure of the course.

Course Website: This course has a website on BCIT D2L. The website is utilized for announcements, electronic handouts, and submission of assignments. All announcements related to the course will be posted on D2L. It is the responsibility of the students to regularly check the D2L site for announcements.

Online Participation: Weekly online activities include online reading and online discussion. Reading and Online Activities must be completed prior to the start of class. Readings will be assigned from textbook. Handouts will be distributed through the course's website (D2L). In order to get the full marks of participation, students must be actively involved in weekly online activities.

In-class Participation: During lab time, students will participate in online discussion, problem-solving exercises or work on their assignments. Students who are working on unrelated courses, reading email, Facebook, playing games etc., during class will be asked to leave.

In-class activities: Homework typically consists of reading, online discussion, or answering some questions assigned by your instructor, as well as pre-lab exercises. You will not be able to complete the lab work if you have not completed the pre-lab exercises before class.

Quizzes: Quizzes are based on the online learning materials, lecture materials, and the lab practice from the previous week. Students will receive a grade of zero if they miss the quiz.

Assignments: Assignments must be done on an individual basis unless otherwise specified by the instructor. Late assignments will not be accepted for marking. Any form of plagiarism will result in a grade of **ZERO** for the first instance.

Group Presentation: Each team will prepare 10-15 minutes presentation after Midterm. You have to find your own group members and select a team leader for your group. Discuss with your team members and your instructor to decide an appropriate topic.

Course schedule and assignments

Note: NP2018: New Perspectives Computer Concepts 2018

Week	Topics	Reading Assignments	Lab Assignment
1	**Online Week: Online Discussion** • Overview Systems Administration • Online Discussions	NP2018: Introduction	Online Discussion
2	**How Computers Work** • Binary Number • Digital Basics • Data Representation Basics • The Data Processing Cycle	NP2018: Module 1 Handout 1	Online Questions Lab 1
3	**PC Hardware** • Basic PC Components • Hardware Issues • Hardware troubleshooting tools	NP2018: Module 2 & 6 Handout 2	Online Questions Lab 2
4	**Windows Basics** • Functions of an Operating System (OS) • Windows OS Architecture • Process vs. Thread	Handout 3	Online Questions Lab 3

	• Introduction to Virtualization Technologies		
5	**Configuring and Customizing Windows OS** • Control Panel Applets • Install, update, and remove PC software • Windows Accessories • Customizing Startup Options	Handout 4	Online Questions Lab 4
6	**UEFI and BIOS** • What is BIOS, and How BIOS works • What is UEFI, and How is it different from BIOS • Customize BIOS and UEFI Settings	Handout 5	Online Questions Lab 5
7	**Course Review**	-------*NO*------	-------*NO*------
8	**Midterm Exam**	-------*NO*------	-------*NO*------
9	**Windows File and Disk Management** • File basics • Managing partitions, files, and folders on a Windows PC • RAID Structure	Handout 6	Online Questions Lab 6
10	**Digital Security** • Viruses, Spyware, Phishing, and Malware • Explanation of Compression and Encryption • How encryption is Implemented in Windows OS	NP2018: Module 7	Online Questions Lab 7
11	**Linux Basic** • Introduction to Linux OS • Basic Linux Commands • Installation and Basic Configuration on CentOS	Handout 8	Online Questions Lab 8
12	**Network** • Network Hardware, Software, Network Terminology	NP2018: Module 3	Online Questions Lab 9

	• Network Functionality and Architecture		
13	**Protect Your System** • Firewalls • Data Recovery • Disaster Recovery Plan (DRP)	Handout 9	Online Questions Lab 10
14	**Course Review**	-------*NO*------	-------*NO*------
15	**Final Exam**	-------*NO*------	--------*NO*-------

BCIT policy

The following statements are in accordance with the BCIT Policies 5101, 5102, 5104, and 7507, and their accompanying procedures. To review these policies and procedures please click on the links below.

Attendance/Illness:
In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with his/her instructor or Program Head or Chief Instructor, indicating the reason for the absence. Students who are seeking accommodation for a medical absence must have a BCIT approved medical certificate submitted to the department, substantiating the reason for absence. For other absences, the student should be prepared to provide appropriate supporting documentation. Unapproved absence in excess of the prescribed regulations within this outline may result in failure or forced withdrawal from the course or program. Please see Policy 5101 - Student Regulations, and accompanying procedures.

Academic Integrity:
Violation of academic integrity, including plagiarism, dishonesty in assignments, examinations, or other academic performances are prohibited and will be handled in accordance with Policy 5104 - Academic Integrity and Appeals, 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 on Accommodation for Students with Disabilities (Policy #4501), 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.

Campus Mediation Services 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 Policy 7507 – Harassment and Discrimination 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

Policy for School of Computing and Academic Studies

Attempts:
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 special written 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.