



## CMPH 209 - Introduction to Hardware

---

### Course Description:

This course introduces you to both the hardware and software essentials of computer systems. You will learn how to install and configure desktop, server and virtual operating systems, and use troubleshooting techniques to diagnose hardware and software problems, configure add-ons, and replace defective sub-systems. You will also perform software installations and testing, and learn backup and security processes, including anti-malware protection.

3 Credits

### Time Guidelines:

The standard instructional time for this course is 75 hours.

### Course Assessment:

Assignments	15%
Projects	60%
Labs	15%
Final Exam	10%
<hr/>	
Total:	100%

### Other Course Information:

#### Learner Engagement:

In order to be successful, the learner is expected to be engaged in learning activities for a total of 9 to 12 learning hours per course per week, which includes both in-class and out-of-class time.

#### SAIT Policies and Procedures:

For information on the SAIT Grading Scale, please visit policy AC 3.1.1 Grading Progression Procedure, found on the SAIT Academic Policies and Procedures page: <https://www.sait.ca/about-sait/administration/policies-and-procedures>

For information on SAIT Academic Policies, please visit: [www.sait.ca/about-sait/administration/policies-and-procedures/academic-student](http://www.sait.ca/about-sait/administration/policies-and-procedures/academic-student)

#### Course Learning Outcome(s):

1. Configure a hardware system.

Objectives:

- 1.1 Outline safety considerations when working with hardware.
- 1.2 Describe hardware components.

- 1.3 Describe various types of cables and connectors.
- 1.4 Explain how different hardware components interact.
- 1.5 Outline the different ways that resources impact component selection.
- 1.6 Demonstrate how to troubleshoot hardware issues.
- 1.7 Describe printer hardware.
- 1.8 Explain printer operations.

2. Manage an operating system.

Objectives:

- 2.1 Explain the architecture of an operating system.
- 2.2 Install an operating system.
- 2.3 Use various types of file management systems.
- 2.4 Utilize MS Command-Line tools.
- 2.5 Utilize MS control panel utilities.
- 2.6 Describe group policy.
- 2.7 Configure a user group.
- 2.8 Utilize features and tools of Linux.
- 2.9 Demonstrate how to troubleshoot operating systems.

3. Apply best practices to ensure efficient computer operations.

Objectives:

- 3.1 Demonstrate professional communication techniques.
- 3.2 Describe how operations are impacted by environmental factors.
- 3.3 Explain licensing models.
- 3.4 Configure storage solutions.
- 3.5 Contrast best practices for documentation.
- 3.6 Apply best practices for change management.
- 3.7 Apply best practices for disaster recovery.

4. Demonstrate proper configuration of virtual machines.

Objectives:

- 4.1 Describe how virtual machines operate.
- 4.2 Explain the concept of virtualization.
- 4.3 Configure virtualization and virtual machines.
- 4.4 Describe cloud computing scenarios.

5. Demonstrate best practices in IT security.

Objectives:

- 5.1 Explain physical security concepts.
- 5.2 Describe systems that protect from malware.
- 5.3 Describe various types of social engineering threats.
- 5.4 Demonstrate best practices to secure a workstation.
- 5.5 Demonstrate how to troubleshoot security issues.

---

© 2015 - 2021, Southern Alberta Institute of Technology (SAIT). All Rights Reserved.

This document and materials herein are protected by applicable intellectual property laws. Unauthorized reproduction and distribution of this publication in whole or part is prohibited.

---