

**Macao Polytechnic Institute**  
**School of Health Sciences and Sports**  
**Bachelor of Science in Biomedical Technology**  
**(Pharmacy Technology)**

**Module Outline**

**Academic Year 2021/2022 Semester 1**

<b>Learning Module</b>	Information Technology Fundamentals		<b>Class Code</b>	COMP1101
<b>Pre-requisite(s)</b>	Nil			
<b>Medium of Instruction</b>	English and Chinese		<b>Credit</b>	2
<b>Lecture Hours</b>	26 hrs	<b>Lab/Practice Hours</b>	4 hrs	<b>Total Hours</b> 30 hrs
<b>Instructor</b>	Liam Lei		<b>E-mail</b>	liamli@ipm.edu.mo
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**Description**

This is an introductory learning module on computers and their role in the modern world, preparing students for the challenges of tomorrow's workplace by equipping them with knowledge to engage in fast-moving information technology. It is designed to develop an in-depth understanding of why computers are essential components in the business world and society.

Topics include basic concepts of software and hardware, theory behind the computer operations, and some simple applications.

**Learning Outcomes**

After completing the learning module, students will be able to:

1. Impart a level of computer literacy appropriate for general computer use.
2. Explain basic local networking and Internet functions in depth.
3. Explain the applications of software and hardware in depth.
4. Explain the significance of the role of the computer in society including security, ethical and legal issues.

## **Content**

1. Introducing Today's Technologies: Computers, Devices, and The Web (3 hours)
  - 1.1. Today's Technology
  - 1.2. Computers, Mobile and Game Devices
  - 1.3. Data and Information
2. Connecting and Communicating Online: The Internet, Websites, and Media (3 hours)
  - 2.1. The Internet
  - 2.2. The World Wide Web
  - 2.3. Other Internet Services
3. Computers and Mobile Devices: Evaluating Options for Home and Work (3 hours)
  - 3.1. Mobile Computers and Desktops
  - 3.2. Cloud Computing
  - 3.3. Protecting Hardware
  - 3.4. Health Concerns of Using Technology
4. Programs and Apps: Productivity, Graphics, Security, and Other Tools (3 hours)
  - 4.1. Productivity Applications
  - 4.2. Graphics and Media Applications
  - 4.3. Personal Interest Applications
  - 4.4. Communications Applications
  - 4.5. Utility Programs
5. Digital Security, Ethics, and Privacy: Threats, Issues, and Defenses (3 hours)
  - 5.1. Digital Security Risks
  - 5.2. Internet and Network Attacks
  - 5.3. Unauthorized Access and Use
  - 5.4. Software Theft, Information Theft, and Hardware Theft
  - 5.5. Ethics and Society
  - 5.6. Information Privacy

6. Computing Components: Processors, Memory, the Cloud, and More (3 hours)
  - 6.1. Inside the Case
  - 6.2. Processors, Cloud Computing, Memory, Adapters, Buses, and Power Supply
  - 6.3. Data Representation
7. Input and Output: Extending Capabilities of Computers and Mobile Devices (3 hours)
  - 7.1. Input Devices
  - 7.2. Output Devices
  - 7.3. Assistive Technology Input and Output
8. Digital Storage: Preserving Content Locally and on the Cloud (3 hours)
  - 8.1. Hard Drives
  - 8.2. Portable Flash Memory Storage
  - 8.3. Cloud Storage and Enterprise Storage
  - 8.4. Other Types of Storage
9. Operating Systems: Managing, Coordinating, and Monitoring Resources (3 hours)
  - 9.1. Operating Systems Functions
  - 9.2. Desktop Operating Systems, UNIX, Server Operating Systems
  - 9.3. Mobile Operating Systems
10. Communicating Digital Content: Wired and Wireless Networks and Devices (3 hours)
  - 10.1. Communications
  - 10.2. Types of Networks
  - 10.3. Communications Software
  - 10.4. Network Communications Standards and Protocols
  - 10.5. Communications Devices and Transmission Media

### **Teaching Method**

Lectures lab practice and tutorials.

## **Attendance**

Attendance requirements are governed by the “Academic Regulations Governing Bachelor’s Degree Programmes of Macao Polytechnic Institute”. Students who do not meet the attendance requirements for the learning module will not be permitted to sit the final or re-sit examination and shall be awarded an ‘F’ grade.

## **Assessment**

This learning module is graded on a 100 point scale, with 100 being the highest possible score and 50 being the passing score.

	<b>Item</b>	<b>Description</b>	<b>Percentage</b>
1.	Assignment	Home-based exercises	10 %
2.	Test	Knowledge assessment	30 %
3.	Group Project	Knowledge assessment	10 %
4.	Examination	2-hour written examination	50 %
		<b>Total Percentage:</b>	<b>100 %</b>

Students with a score of less than 35 in the final examination must take the re-sit examination even if the overall score for the course is 50 or above.

Students with an overall final grade of less than 35 are NOT allowed to take the re-sit examination.

## **Teaching Material**

### **Textbook(s)**

1. Vermaat, Sebok, Freund, Campbell, and Frydenberg (2018). *Discovering Computers 2018* (1<sup>st</sup> ed.). Cengage Technology.

## **Reference**

### **Reference book(s)**

1. D. Morley, C. S. Parker. (2017). *Understanding Computers: Today and Tomorrow, Comprehensive* (16<sup>th</sup> ed.). Cengage Technology.
2. B. K. Williams, S. C. Sawyer. (2010). *Using Information Technology: a practical introduction to computers & communications* (8<sup>th</sup> ed.). McGraw-Hill.