

# Subject Title: Information and Communication Technology

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## *Introduction*

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Information and Communication Technology (ICT) is a diverse set of tools and resources used to communicate, create, disseminate, store and manage information. Communication and information are at the very heart of the education process. With the increased use of ICT in almost every aspect of our daily lives, ICT has become a potentially powerful enabling tool for educational change and reform. Effective use of ICT at school can help to develop transferable ICT skills and provide useful support in the different domains of the Pre-Vocational curriculum.

In the context of the current curriculum reform, rooted in an evolving social and economic context, students use ICT tools to find, explore, analyse, select, exchange and present information in a responsible and creative manner. They learn how to employ ICT for rapid access to information, ideas and experiences from a wide range of people, communities and cultures. Increased capability in the use of ICT promotes initiative and independent learning with students being able to make informed judgments about when and where to use ICT to the best effect, and to consider its implications for home and work, both at present and in the future.

## *The aims of ICT at Pre-Vocational Secondary*

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The learning of ICT as a subject on its own and ICT in an integrated approach in all the other domains provide opportunities for students to:

- have a learning support with the help of ICT tools within the different domains
- make use of ICT tools to analyse, interpret and present information judiciously
- embed ICT in the development of vocational skills
- develop the necessary technical mind frame, ICT skills and attitudes
- use effectively ICT tools for problem solving and intended trade skills

## *Assessment objectives*

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Students should be able to:

- demonstrate an understanding of the use of ICT in modern society.
- show confidence and competence in the handling of the computer and the use of computer applications.
- access, select, interpret and evaluate information for suitability, correctness, and currency.
- communicate with others, using computer-mediated communication.
- perform mathematical calculations and modelling using the computer.
- effectively present their work, using appropriate computer applications.

## *Mode of Assessment*

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Portfolio-based assessment

Learners at pre-vocational level need to master the ICT skills by hands-on practice. In so doing, it is proposed that activity sheets for each individual item in the syllabus be developed. Students are to work out the activities in a sequential and progressive manner and after successfully carried out the activities they will keep the copies in their portfolios. At the end of the week or a predetermined short period, educators will collect the portfolios for an evaluation of the work done and progress made. In this context, a summative assessment could also be carried out to determine the level of competencies acquired.

## Curriculum content

### Year 1

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Computers in our daily life	<ul style="list-style-type: none"><li>• State where computers are used.</li><li>• Demonstrate an awareness of the importance and role of computers in our everyday life.</li><li>• List the differences between a human brain and a computer.</li><li>• Name devices using microchips.</li></ul>
Knowing the computer room	<ul style="list-style-type: none"><li>• Identify a computer room and its layout design.</li><li>• Understand the guidelines to follow in a computer room/laboratory.</li><li>• Have an understanding of safety guidelines and care of the computer devices.</li><li>• Understand the precautions in using a computer in terms of proper posture and related health problems.</li></ul>
Fundamentals of a computer System	<ul style="list-style-type: none"><li>• Describe the various types of computers: microcomputer, minicomputer, mainframe, and supercomputer.</li><li>• Identify and name the basic components of a computer system.</li><li>• Differentiate between Input, Output and Storage devices.</li><li>• Identify the functions of the basic components of a computer system.</li></ul>
Computer Operations	<ul style="list-style-type: none"><li>• Switch on and shut down a computer properly and safely.</li><li>• Work with the Windows environment: minimize, maximize, restore and close windows</li><li>• Use the essential keys of the keyboard</li><li>• Use the mouse to select, click, double click, drag, cut,</li></ul>

	<p>copy and paste.</p> <ul style="list-style-type: none"> <li>• Work with files and folders: open, save and close files</li> </ul>
<p>MS Paint: Use of a graphic software as a drawing tool</p>	<ul style="list-style-type: none"> <li>• Open and close MS Paint.</li> <li>• Identify the different components of the Paint window.</li> <li>• Use different tools of the Drawing Tool Box</li> <li>• Add colours to drawings using the colour box</li> <li>• Insert Texts and Graphics.</li> <li>• Adjust the image size.</li> </ul>
<p>MS Word: Use of the Word Processing Software as a tool to formulate and express ideas</p>	<ul style="list-style-type: none"> <li>• Open and close MS Word.</li> <li>• Identify the different components of word processing window.</li> <li>• Type characters, words and short sentences.</li> <li>• Save and open a word document.</li> <li>• Carry out simple editing operations using Delete, Insert, Shift, Enter and Arrow Keys.</li> <li>• Demonstrate an understanding of the concepts of formatting of documents</li> <li>• Apply basic formatting functions.</li> </ul>

Fundamentals of a computer System	<ul style="list-style-type: none"><li>• Describe the characteristics of different types of computers: microcomputer, minicomputer, mainframe, and supercomputer.</li><li>• Describe the data processing task of a computer system.</li><li>• Identify the characteristics and uses of input, output and storage devices.</li><li>• Distinguish between the storage capacity units.</li><li>• Distinguish between digital and analog signals.</li></ul>
Computer Operations	<ul style="list-style-type: none"><li>• Working with Windows environment: Open and manage different windows simultaneously, Use the toolbars and menu.</li><li>• Exploring the program menu.</li><li>• Managing stored computer files: Locate and run files and programs from the start menu, search for files and folders, delete, copy, rename and move files and folders.</li><li>• Printing work done: use print and print preview</li></ul>
Word Processing: Further features	<ul style="list-style-type: none"><li>• Apply character formatting (font, size, colour, effects, etc.)</li><li>• Apply paragraph formatting (Alignment, Line spacing, Bullets and Numbering).</li><li>• Insert Headers/Footers, Page Numbers, Borders and Shading.</li><li>• Use Spell Check, Grammar and Thesaurus.</li><li>• Use Find and Replace.</li><li>• Use of Drawing Toolbar.</li><li>• Format pictures.</li><li>• Insert and format tables</li></ul>

MS Excel: Simple spreadsheet features	<ul style="list-style-type: none"> <li>• Understand the concepts of workbooks and worksheets.</li> <li>• Identify cell, row, column, cell reference.</li> <li>• Enter data.</li> <li>• Insert and Delete cells, columns and rows.</li> <li>• Format cells.</li> <li>• Use formula for simple arithmetic operations.</li> </ul>
MS PowerPoint: Presentation software as a tool for communication	<ul style="list-style-type: none"> <li>• Understand when and why to use presentation software.</li> <li>• Plan and Design a Presentation.</li> <li>• Prepare a simple presentation starting from a template.</li> <li>• Customise the presentation with different font types and sizes.</li> <li>• Apply different Slide Layout and Slide Designs.</li> <li>• Insert, delete or move slides.</li> </ul>
Internet: Web as a resource of information	<ul style="list-style-type: none"> <li>• Understand the World Wide Web.</li> <li>• Use a Search Engine.</li> <li>• Select relevant information and bookmark websites.</li> <li>• Upload and download text, image and audio files to and from the Internet.</li> </ul>

## Year 3

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Fundamentals of a computer system	<ul style="list-style-type: none"><li>• Discuss the importance of operating system.</li><li>• Describe the various types of operating system used in different platforms.</li><li>• Describe the different interfaces of operating system.</li></ul>
Ethical and social issues related to the use of ICT	<ul style="list-style-type: none"><li>• Demonstrate proper attitude and behaviour when using the Internet.</li><li>• Create an awareness of issues such as : Computer Ethics, Information Privacy and security of data, Ownership &amp; Copyright, misuse aspects of computers, Internet resources and its social impact, Software Piracy, Computer crime and hacking.</li></ul>
Computer Operations	<ul style="list-style-type: none"><li>• Use the different devices such as scanners, CD/DVD writers, microphones and speakers.</li><li>• Use the control panel to perform simple tasks such setting time and date, changing background of desktop, modifying attributes of the monitor, installing/uninstalling programs.</li><li>• Perform basic trouble-shooting tasks such as defragmentation of hard disk, disk cleanup, backup and restore.</li></ul>
MS Excel: Spreadsheet as a tool for problem solving	<ul style="list-style-type: none"><li>• Use the functions- Minimum, Maximum, Count, Sum, Average, and Percentage.</li><li>• Replicate formula and functions.</li><li>• Collect and organise data in a spreadsheet.</li><li>• Insert simple Graphs and Charts e.g. Line, Bar and Pie Charts.</li><li>• Analyse and interpret graphs and charts.</li></ul>
MS PowerPoint: presentation tool	<ul style="list-style-type: none"><li>• Insert Pictures from file and Clip Art into a document.</li><li>• Insert simple graphs and charts.</li><li>• Include custom animation effects.</li><li>• Apply slide transitions</li></ul>

	<ul style="list-style-type: none"><li>• Run the slide show</li></ul>
Internet: Electronic communication	<ul style="list-style-type: none"><li>• Understand the concept of electronic mail</li><li>• Create an email address</li><li>• Compose an email</li><li>• Attach a document to a mail</li><li>• Send/forward an email to one or more recipients</li><li>• Retrieve and reply an email.</li></ul>

## Year 4

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Economic issues related to the use of ICT	<ul style="list-style-type: none"><li>• Show understanding of economic issues: Economic impact and benefits for computerizations, Changes to the environment and training practices, Reliance on computers, Services to computer users – E-shopping, E-commerce, Online banking, Online booking, Telecommuting, Teleconferencing, Future of computers in our society</li></ul>
Computer network fundamentals	<ul style="list-style-type: none"><li>• Understand the concept of computer network and the Internet</li><li>• Distinguish between LAN (Local Area Network) and WAN (Wide Area Network)</li><li>• Accessing the World Wide Web (WWW)</li><li>• Hardware and Software for accessing the Web</li><li>• Internet Service Provider (ISP)</li><li>• Have an overview of network topologies</li></ul>
Computer viruses and antidotes	<ul style="list-style-type: none"><li>• Show understanding of the ways in which computers can be protected: Computer viruses and Antidotes, precautions on how to avoid virus attacks and data backups to avoid data losses</li></ul>
Computer Applications for generating reports and documents	<ul style="list-style-type: none"><li>• Produce word-processed and graphically-enhanced reports/documents</li><li>• Produce graph and charts using spreadsheet package</li></ul>
Multi-media presentations using PowerPoint	<ul style="list-style-type: none"><li>• Develop purposeful multi-media presentations for a given audience: enhance a presentation by inserting images and graphics, adding animation and transition effects</li></ul>
Internet: Sharing ideas and information	<ul style="list-style-type: none"><li>• Use the Internet to share ideas and information</li><li>• Engage in collaborative projects and online interaction</li><li>• Use ICT to share ideas in their intended trade skills</li></ul>