

COMPUTER APPLICATIONS

CLASS IX

(Code No.165)

Effective from the session 2018-19

1. Prerequisites

No background in computer science is required.

2. Learning Outcomes

1. Familiarity with basics of computers.
2. Ability to navigate the file system.
3. Create and edit rich text documents, spreadsheets, and presentations.
4. Perform basic data manipulation using spreadsheets.
5. Use Indian languages in documents.
6. Send and receive emails, follow email etiquette, and communicate over the internet.
7. Create and upload videos.
8. Safe and correct usage of websites, social networks, chat sites, and email.

3. Distribution of Marks

Unit No.	Unit Name	Marks
1.	Basics of Information Technology	5
2.	Cyber safety	10
3.	Office Tools	5
4.	Scratch/Python	10
5.	Lab Exercises	70
	Total	100

4.1. Unit 1: Basics of Information Technology

- Familiarity with the basics of computers: design of computers, and overview of communication technologies
- Computer Systems: characteristics of a computer, components of a computer system – CPU, memory, storage devices and I/O devices
- Memory: primary (RAM and ROM) and secondary memory
- Storage devices: hard disk, CD ROM, DVD, pen/flash drive, memory stick
- I/O devices: keyboard, mouse, monitor, printer, scanner, web camera
- Types of software: system software (operating systems), application software, mobile applications
- Operating systems: kernel, device drivers, and file systems (very basic idea)
- Computer networking: wired/wireless communication, common protocols: Wi-Fi, Bluetooth, cloud computers (private/public)
- Multimedia: images, audio, video, animation
- Chat sites, and social networks.

4.2. Unit 2: Cyber-safety

- Safely browsing the web and using social networks: identity protection, proper usage of passwords, privacy, confidentiality of information, cyber stalking, reporting cybercrimes
- Safely accessing websites: viruses and malware

4.3. Unit 3: Office tools

- Introduction to a word processor: create and save a document.
- Edit and format text: text style (B, I, U), font type, font size, text colour, alignment of text. Format paragraphs with line and/or paragraph spacing. Add headers and footers, numbering pages, grammar and spell check utilities, subscript and superscript, insert symbols, use print preview, and print a document.
- Insert pictures, change the page setting, add bullets and numbering, borders and shading, and insert tables – insert/delete rows and columns, merge and split cells.
- Use auto-format, track changes, review comments, use of drawing tools, shapes and mathematical symbols.
- Presentation tool: understand the concept of slide shows, basic elements of a slide, different types of slide layouts, create and save a presentation, and learn about the different views of a slide set – normal view, slide sorter view and hand-outs.
- Edit and format a slide: add titles, subtitles, text, background, and watermark, headers and footers, and slide numbers.
- Insert pictures from files, create animations, add sound effects, and rehearse timings.
- Spreadsheets: concept of a worksheet and a workbook, create and save a worksheet.
- Working with a spreadsheet: enter numbers, text, date/time, series using auto fill; edit and format a worksheet including changing the colour, size, font, alignment of text; insert and delete cells, rows and columns. Enter a formula using the operators (+, -, *, /), refer to cells, and print a worksheet.
- Use simple statistical functions: SUM (), AVERAGE (), MAX (), MIN (), IF () (without compound statements); embed charts of various types: line, pie, scatter, bar and area in a worksheet.

4.4. Unit 4: Scratch or Python

Alternative 1: Educational programming language - Scratch

- Introduction to Scratch.
- Drag and drop commands, creating simple scripts, repeating blocks of commands.
- Discuss x-y plane, create scripts to move the cat (Scratch mascot).
- Create a script to draw diagrams using the pen feature.

Alternative 2: Python - (provided as an option to children with special needs)

- Introduction to Python
- A simple "Hello World" program
- Running a Python program
- The notion of data-types and variables: integer, float, string
- Arithmetic operations: +, -, *, /

5. Lab Exercises

- Basic I/O devices: use the mouse and keyboard, draw a figure.
- Working with the operating system: Navigation of the file system using a mouse and keyboard, and then doing the same with shell commands.
- Word processing: create a text document, create a letter, report, and greeting card.
- Create a text document with figures in it. It should describe a concept taught in another course.
- Discuss the following in a text document about the basic organisation of a computer: CPU, memory, input/output devices, hard disk.
- Create a text document in an Indian language other than English.
- Create a presentation.
- Create a presentation with animation.
- Create and edit existing images, and then include them in a presentation.

- Animate pictures and text with sound effects in a presentation
- Create a simple spreadsheet and perform the following operations: min, max, sum, and average.
- Create different types of charts using a spreadsheet: line, bar, and pie.
- Send an email to your friends. Attach some documents that you have prepared earlier. Put some friend in the CC and BCC list. Interact with friends to find out who was in the BCC list.
- Do an online chat with multiple friends. Transmit documents using the chat platform.
- Create a video and upload it on YouTube.
- Write basic Scratch/Python programs.

Breakup of marks for the Practicals:

S.No.	Unit Name	Marks
1.	Lab Test (30 marks)	
	Proficiency with the OS	2.5
	Word processing	5
	Handling spreadsheets	7.5
	Creating presentations	7.5
	Writing basic Python/Scratch programs	7.5
2.	Report File + viva (25 marks)	
	Report file:4 documents each with a word processor, spreadsheet, and presentation tool	20
	Viva voce (based on the report file)	5
3.	Project (that uses most of the concepts that have been learnt)	15