

**Computer Systems**  
**(Foundation-I)**

Time: 70 hours: Class-sessions 14 hrs, Lab-sessions 50 hrs, Tests/Presentations 6 hrs  
Marks Distribution: Theory 50% + Practical 50%

**OBJECTIVE:**

Development of the professional accountant as user of information systems. After completing this course, the student would be able to follow the technology trends and use office technologies necessary for an efficient and effective professional accountant.

**ABILITY REQUIRED:**

Practical experience and skills with office application packages. The student should be able to use office applications such as word processors, spreadsheet, presentation, email and database packages for organizing and managing different types of information.

- **Computer Systems Concepts (2hrs, 4%)**

General system theory, systems objectives

Information flows: Control, feedback, processing, input, output and data.

Open/Closed systems, well/ill structured, formal/informal, manual/automated systems.

Sub-systems, networks, distributed systems, mobile computing.

Hardware, systems software, applications and automated systems.

Networks and electronic data transfer.

- **Hardware Technologies (4hrs, 6%)**

Hardware trends: Multimedia, convergence, processing, storage technology trends.

Micro/workstation /mini/mainframe/ supercomputer, distributed processing

Internals: Central processing units (CPU), server, main memory, etc. Busline, cables, integrated circuit cards, micro-code, registers, etc.

Input Devices: Keyboard, mouse, text recognition, voice recognition, smart card, pen, display, tape, disk, scanner, printer, etc.

Output/Storage Devices: Data representation by computer, data compression: Tape, disk, compact disk read-only memory (CD-ROM), write once read many (WORM), computer output micro film (COM), Hardcopy, microfiche, optical imaging, storage formats

- **Networking Technologies (2 + 2=4hrs, 6%)**

Networking Trends: LAN, WAN, MAN, micro to mainframe links, mobile systems

Data transmission options and media, carrier services, types of service providers.

Network applications, Operations, management, and control of networks

Network hardware: Modem, switch, router, terminal, monitor, primary/backup network server.

**Lab Sessions (2 hrs)**

Email, Internet, WWW (search engines), address book, calendaring, scheduling, to-do lists, newsgroups.

- **Systems and Software (2 + 4 = 6hrs, 9%)**

Operating Systems trends, open/proprietary/shareware systems: Comparison of DOS, Windows, Windows NT, Linux, Unix, Windows CE etc

Operating System: Micro/workstation/mini/mainframe/supercomputer

Programming Trends: Machine code/assembly/procedural/4th generation languages (IDE), object-oriented languages. Multi-programming, multi-tasking and multi-processing

Client/server, File server, application server, email server, network server, group-ware server, intranet server, web server, print servers, authentication server etc.

Security: Type of viruses and anti-virus software, user profile, password, transaction logging

Backup and recovery: Tape/disk management systems.

- **Lab Sessions (4 hrs)**

General computer operations and hands-on proficiency on files and folders explorer, network neighbourhood, task management, control panel management on popular windows OS.

- **Lab Sessions: Spreadsheet Package (20hrs, 31%)**

File, edit, view, insert, format menu commands: Print/page setup, custom header/footer

Absolute, relative addressing, cell labeling. Formulas, copying formulas. Use of different types of functions. Cell formatting, bordering, alignment, number. Data types, formats, conversions

Tools: Sorting, filtering. Linking worksheets, pivot table, paste special

Import/export of data from/to word processors, databases, text-files. Data format conversion problems

Charts: Bar charts, pie charts, formatting. Suitability: When to use which type of chart.

The student should be able to compare/reconcile lists of transactions, analyze transactions records, prepare forecasting series using filtering/sorting, summarizing, formatting for decision making.

- **Lab Sessions: Word-processing (10 hrs, 16%)**

Editing, format, insert, view and file menu commands in word processor

Paragraph/page/character formats. Letters, reports, standard templates, user defined templates

Mail merge using data from spreadsheets and/or tables.

Tables and table menu commands; formatting, borders, size of columns, rows, captions.

Table of contents, table of figures and index, page layout, print formatting

Linking and embedding spreadsheet, presentation and other integrated package documents.

Presentation Package: File, edit, view, insert, format, slide master, menu commands for a presentation package, Drawing toolbox: Shapes, lines, text boxes, aligning, distributing, grouping, flipping objects. Slide animation commands. Inserting chart, table, picture word processor and spreadsheet

- **Database Concepts (4hrs, 6%)**

Data storage, access and sharing: Sequential access, Direct access, Indexed sequential access

File/ record design, Relational databases. Characters /files/records, data types, rows, columns

Conceptual data modeling: One-many, many-many: Master/ transactions tables

File layout/ schema/ data dictionary

Database administration, data organization and access profiles

- **Lab Sessions: Office Database Package (14hrs, 22%)**

Application of database concepts in popular office database packages.

Defining tables, rows, columns, data types, formatting and input constraints.

Relationships: One-many, many-many relationships. Resolving many-to-many relationships

Interactive queries on sample databases containing data and a number of tables.

Interactive development environments: Tables, Queries, Forms, Reports

Report Generators: Use of report tool available in popular office database packages.

Forms wizards: Use of form development tools/wizards in popular office database packages.

Interactive query tools. Use of GUI query tools in office database packages.

The student should be able to analyse (say) a sample database like Northwind or prepare a small database of (say) business contacts or suppliers and customers with some forms, reports and queries.

**Examination: Theory 50% Practical: 50%**

Practical would cover the hands on practice of the lab sessions specified for MS Windows, Outlook, Excel, Word, Power point and Access.

Core Text			
	Information Technology in Business	James A. Senn, BPB	Latest Edition
	Online help of MS Office		
Suggested Office Software			
	MS Office Professional		
	Windows OS, Outlook Express		
Supplementary Text			
	MOUS: Series of books on MS Office	Prentice Hall	Latest Edition
	Introduction to Information Systems	James O'Brien	Latest Edition