

### Basics of Computer Applications

#### *Theory(2 Hours / Week; 2 Credits)*

1. **Computer Fundamentals:** **3hrs**  
Definition, characteristics, history, computer terminology, computer organization, input & output devices, storage devices (including latest devices), classifications of computers (including current computer systems), binary conversions and ASCII code, application of computers in pharmacy, introduction to computer virus.
  
2. **Operating Systems:** **3hrs**
  - a. Definition, functions of an operating system, types of operating systems and their characteristics.
  - b. **DOS**  
Introduction, basic DOS commands such as creating directory, copying creating files, backup, restore, autoexec.bat file, config.sys file, etc. internal and external commands for file and directory management.
  - c. **Windows:**  
Desktop, start-menu, control panel, accessories, my computer, my documents, recycle bin, printer and mouse settings, maximizing, minimizing, restoring and closing of windows, windows explorer
  
3. **MS Word:** **6hrs**  
Word Essentials, the word workplace, Parts of MS Word screen, Typing and Editing, Finding and Replacing, Autocorrect and Autotext, Reusing Text and Graphics, use of spellcheck & grammer, thesaurus and scientific symbols, viewing of document by various ways Editing Tools, Formatting Text Formatting Text Character, Formatting Paragraphs, Formatting and Sorting Lists, Page Design and Layout, Page Setup : Margins, Page Numbers, and Other Items, Newspaper -style Columns, Working with Tables Creating and formatting of tables and sorting, merging etc. of data in tables. Inserting, deleting and sizing of rows and columns in tables, Opening, Saving and Protecting Documents, Locating and Managing Documents Printing, Assembling Documents with Mail Merge,
  
4. **MS Excel:** **6hrs**  
Introduction to EXCEL worksheet, calculations in EXCEL, preparation of templates for application in pharmaceutical chemistry, pharmaceutical technology, pharmacology and pharmacognosy (statistical treatment of data for Beers Lamberts curve, solution of problems based on physical chemistry, pharmaceutical engineering, stability study, area under the curve, bio-assay, bioequivalence study, extraction, Rf value, etc.) Special attention must be given to arithmetic expressions. Hierarchy of operation, library functions such as logarithm, squareroot, standard deviation, sum, average, t-test, ANOVA etc. Drawing graphs in EXCEL line graph, histogram, pie-chart- At least one graph for each discipline of chemistry, pharmaceutical technology, pharmacology and pharmacognosy -Editing chart features such as annotation, labeling of axis, changing legends etc.

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## B.Pharm Semester-I

5. **MS PowerPoint** **3hrs**  
Creating and viewing a presentation, adding animations and managing slide shows etc.
6. **Introduction to MS Access and Outlook** **3hrs**
7. Introduction to softwares for viewing pdf documents **3hrs**  
(ADOBE reader, ACROBAT), drawing simple chemical structures (CHEMDRAW, etc.)
8. **Networking & Internet:** **3hrs**  
Computer networks, networking technology, components of network. Internet – Basic terms, software and hardware requirement for internet, process of internet working, internet tools, Email- components and working, study of pharmaceutical web sites and search engines, searching through pharmaceutical data bases, study of patent websites.

### ***Practicals (2 Hours / Week; 3 Credits)***

Practical exercises should be based on theoretical topics. Exercise to familiarize students with the use of various DOS commands and WINDOWS environment. Exercises on word processing to execute various commands in preparing and editing documents, preparation of pharmaceutical documents and practical tables of pharmacognosy, pharmaceutical chemistry, pharmaceuticals and pharmacology in MS Word. Preparing and editing worksheets in MS EXCEL, drawing graphs, inserting formulas etc. Demonstration of softwares for viewing .pdf documents (ADOBE reader, ACROBAT), drawing simple chemical structures (CHEMDRAW, etc.)

Demonstration of pharmaceutical web sites including educational, government, commercial & search engines working with E-mail & e-mail software, patent Web-site.

### **Books Recommended:**

1. Windows Vista: Step by Step, Joan Preppernau and Joyce Cox, Prentice Hall of India, New Delhi, 2007.
2. Windows Vista: Plain & Simple, Jerry Joyce, and Marianne Moon, Prentice Hall of India, New Delhi, 2007.
3. DOS commands in easy steps, Harshad Kotecha, Dreamtech Press, New Delhi, 2000.
4. WORD 2000, Guy Hart Davis, BPB Publications, New Delhi, 1999.
5. WORD 2000:fast & easy, Diane Koers, BPB Publications, New Delhi, 2000.
6. Microsoft WORD 2000:Training Guide, Maria Reid, BPB Publications,

# Gujarat Technological University

## B.Pharm Semester-I

New Delhi, 2000

7. Exploring Microsoft Office XP, John Breeden and Michael Cheek, BPB Publications, New Delhi, 2001.
8. MS Office by Pierce, Prentice Hall of India, New Delhi, 2007
9. MS Office: Plain & Simple, Jerry Joyce, and Marianne Moon, Prentice Hall of India, New Delhi, 2007.
10. MS Office: Step by Step, Joyce Cox, Prentice Hall of India, New Delhi, 2007.
11. Pharmaceutical Statistics, S.Bolton, Marcel Dekker Inc. – 3<sup>rd</sup> Edition – 1997.
12. Common Statistical Tests - 1<sup>st</sup> edition - M.B.Kulkarni, S.B.Ghatpande & S.D.Core, Satyajeet Prakashan, Pune.
13. Taxali R.K., P.C. Software for Windows 98 made simple – 8<sup>th</sup> Edition – 2002 – Tata Mc, New Delhi.
14. MS – Office by Ed. Bott. & Woddy Leohad, Prentice Hall of India, New Delhi, 1999
15. An Introduction to Medical Statistics – 2<sup>nd</sup> Edition – Martin Bland – Published by ELBS – Oxford University – Great Britain – 1995
16. Accessing and Analysing Data with MS EXCEL, Cornell, Prentice Hall of India, New Delhi, 2007.
17. Manuals available with the software.