

**Note : Internal Assessment is not Applicable for the B.A. courses offered by Department of Distance Education, Punjabi University, Patiala.**

## **SYLLABUS OF**

**B.A./B.Sc. Part-I (COMPUTER SCIENCE)  
(Semester Ist & IInd)  
(2020-21, 2021-22 and 2022-23 Sessions)**



**PUNJABI UNIVERSITY PATIALA**  
(Established under Punjab Act no. 35 of 1961)

**B.A./B.Sc. Part-I (COMPUTER SCIENCE)**  
**(Semester I)**  
**(2020-21, 2021-22 and 2022-23 Sessions)**

**PAPER BAP-101: FUNDAMENTALS OF INFORMATION TECHNOLOGY**

**For Regular Students**

**External Marks: 45**

**Minimum Pass Marks: 35%**

**Internal Assessment: 15**

**For Distance Education Students**

**External Marks:60**

**Minimum Pass Marks:35%**

**Maximum Time: 3 Hrs.**

**Lectures to be delivered: 45-55**

**A) Instructions for paper-setter**

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 40% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 20% marks in all.

**B) Instructions for candidates**

1. Candidates are required to attempt two questions each from sections A & B of the question paper and the entire section C.
2. Use of non-programmable scientific calculator is allowed.

**SECTION A**

**Computer Fundamentals:** Block diagram of a computer, characteristics of computers and generations of computers. Categories of Computers - Supercomputer, mainframe computer, network server, Workstation, Desktop computers, notebook computer, Tablet PC, handheld PC, smart phone.

**Input Devices:** Keyboard, Mouse, Joy tick, Track Ball, Touch Screen, Light Pen, Digitizer, Scanners, Speech Recognition Devices, Optical Recognition devices – OMR, OBR, OCR

**Output Devices:** Monitors, Impact Printers - Dot matrix, Character and Line printer, Non Impact Printers – DeskJet and Laser printers, Plotter.

**Memories:** Memory Hierarchy, Primary Memory – RAM, ROM, Cache memory. Secondary Storage Devices - Hard Disk, Compact Disk, DVD, Flash memory.

**Software:** Types of Software- System Software, Application Software, Firmware. Type of System Software: Operating Systems, Language Translators, Utility Programs, Communications Software.

**Commonly Used Application Software:** Word Processor, Spreadsheet, Database, Education, Entertainment Software.

**Computer Languages:** Machine language, assembly language, high level language, 4GL.

**SECTION B**

**Number System:** Non-positional and positional number systems, Base conversion, Concept of Bit and Byte, binary, decimal, hexadecimal, and octal systems, conversion from one system to the other. Binary Arithmetic: Addition, subtraction and multiplication, 1's complement, 2's complement, subtraction using 1's complement and 2's complement.

**Computer Codes:** weighted and non-weighted code, BCD, EBCDIC, ASCII, Unicode.

**Computer Network:** Network types, network topologies.

**Internet Related Concepts:** Internet, World Wide Web, Hypertext, Uniform Resource Locator, Web

Browsers, IP Address, Domain Name, Internet Services Providers, Internet Security, Web Search Engine, Net Surfing, web portal, Wiki, Blog.

**Advanced Trends in IT :** Mobile Internet, GPS, 3G, 4G, Wi-Fi, Bluetooth, Cloud Technology, Virtual LAN Technology, Firewall, E-Commerce, M-Commerce, Nanotechnology, Virtual Reality, BPO and KPO, Online shopping, Social Media - YouTube, FaceBook, LinkedIn, Twitter, Google+.

**Applications of IT:** IT in Business and Industry, IT in Education & training, IT in Science and Technology, IT and Entertainment, Current Trends in IT Application - AI, Virtual Reports, voice recognition, Robots, Multimedia Technology.

**Reference Books:**

1. Peter Nortorn, Introduction to Computers, Seventh Edition
2. V. Rajaraman, Fundamentals of Computers, PHI.
3. Larry E. Long and Nancy Long, Computers: Information Technology in Perspective, PHI.
4. N. Subramanian, Introduction to Computers, Tata McGraw-Hill.
5. D.H. Sanders, Computers Today, McGraw- Hill.

**PAPER BAP-102: PRACTICAL BASED ON PAPER BAP-101**

**Maximum Marks: 40**

**Maximum Time: 3 Hrs.**

**Minimum Pass Marks: 35%**

**Practical Units to be conducted: 45-55 Hrs**

The laboratory course will comprise of Activities related to Windows and exercise to what is learnt under Paper BAP-101 such as:

**Windows**

**Activity 1:** Windows 7 Installation and Software & Drivers installation.

**Activity 2:** Basic components of Window-Desktop, Icons, Taskbar, Status Bar, Wallpapers, Screen Saver

**Activity 3:** Start Menu: Accessories- Notepad, Calculator, Clock, Date and Time, Disk Defragmentation, Working with Control Panel.

**Activity 4:** Taskbar properties - Maximize Minimize, Restore, and Close.

**Activity 5:** Creating Files, Folders, Shortcuts, Moving folders (right click options)

**Internet**

**Activity 1:** Connecting through Wi-fi, Blue tooth and Hot Spot.

**Activity 2:** Web Surfing, searching contents through Search Engines.

**Activity 3:** Creating and maintaining Web Blogs and Web portals

**Social Media**

**Activity 1:** Creating account, linking accounts, setting profiles and preferences.

**Activity 2:** Posting messages, replying, forwarding, tagging contents.

**Activity 3:** Online shopping, comparing prices etc.

**Activity 4:** Creating and maintaining social profiles at LinkedIn, FaceBook, Twitter etc.

The breakup of marks for the practical will be as under:

Lab Record	:	05 Marks
Viva Voce	:	10 Marks
Program Development And Execution	:	25 Marks

**B.A./B.Sc. Part-I (COMPUTER SCIENCE)**  
**(Semester II)**  
**(2020-21, 2021-22 and 2022-23 Sessions)**

**PAPER BAP-103 : MS-OFFICE AUTOMATION TOOLS**

**For Regular Students**

**External Marks: 45**

**Minimum Pass Marks: 35%**

**Internal Assessment: 15**

**For Distance Education Students**

**External Marks:60**

**Minimum Pass Marks:35%**

**Maximum Time: 3 Hrs.**

**Lectures to be delivered: 45-55**

**A) Instructions for paper-setter**

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 40% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 20% marks in all.

**B) Instructions for candidates**

1. Candidates are required to attempt two questions each from sections A & B of the question paper and the entire section C.
2. Use of non-programmable scientific calculator is allowed.

**SECTION A**

**MS-OFFICE:** Basic layout, components, Office Characteristics, Common Office Controls and shortcuts for Home, Insert, Page Layout, Mailing, Review and View

**MS Word 2010:** Introduction to Word Processing, Toolbars, Ruler, Menus, Keyboard Shortcut. Previewing documents, Printing documents, Formatting documents, Checking the grammar and spelling, Formatting via find and replace, Using the Thesaurus, using Auto Correct, word count, Hyphenating, Mail merge, mailing Labels Wizards and Templates, Handling Graphics, tables as Converting a word document into various formats.

**MS PowerPoint 2010:** Introduction, Elements of Power Point Package, Starting and exploring Power Point menus (Insert, Format, Tools, Slide Show, Window, Help options and all of their features, Options and sub options etc.), Creating, inserting, deleting and formatting slides, Formatting and enhancing text, Slides with graphs, Giving Animation to slides, Transfer of files between Power Point and other word processors and software packages.

**SECTION B**

**MS-EXCEL 2010:** Creating worksheet, entering data into worksheet, Entering data into worksheet, Entering, data, dates, alphanumeric, values, saving & quitting worksheet, Opening and moving and existing worksheet, Toolbars and Menus, keyboard shortcut. Working with single and multiple workbooks, working with formulation & cell referencing, formatting of worksheet.

**MS-ACCESS 2010:** Introduction to MS-ACCESS-2010 working with databases and tables, queries in Access. Introduction to forms, sorting and filtering, controls. Creating reports, Using Macro

**Reference Books:**

1. Rob Tindrow, Jim Boyce, Jeffrey R. Shapiro, Windows 10 Bible, Wiley.

## **PAPER BAP-104: PRACTICAL BASED ON PAPER BAP-103**

**Maximum Marks: 40**

**Maximum Time: 3 Hrs.**

**Minimum Pass Marks: 35%**

**Practical Units to be conducted: 45-55 Hrs**

The laboratory course will comprise of Activities related to MS-OFFICE and exercise to what is learnt under Paper BAP-103 such as:

### **MS-Word**

#### **Activity 1:**

- i. Create, open, save and close a document.
- ii. Typing, copying, moving and deleting data in word document.
- iii. Perform Save and Save as, Cut and Copy, Paste and Paste Special.

#### **Activity 2:**

Formatting of data in word Document:-

- i. Text formatting (font size, font style, font color, subscript, superscript, upper/lower case etc.)
- ii. Text Alignment and character spacing
- iii. Indention and line spacing
- iv. Border and shading
- v. Bullets and Numbering

#### **Activity 3:**

- i. Find and replace and data sorting in a document.
- ii. Protect your document.
- iii. Add chart in word document. Create different types of Charts in word.
- iv. Set a size, margin, orientation of page, Hyphenation, Columns and Line Numbers in MS-Word.

#### **Activity 4:**

- i. Set Page Color, Page Border, Themes, and Watermarks in MS-Word
- ii. Adding Tables, header/footers, pictures, page numbers and special symbols, Text Box in your word document.
- iii. Showing Ruler, Gridlines, Document Map, Thumbnails, Inserting Word Art, Drop Cap, Hyperlink, Equation etc. in word document

#### **Activity 5:**

- i. Arranging, splitting windows in MS-word
- ii. Perform Mail-merge in MS-word
- iii. Create and run Macros in MS-Word
- iv. Set the print properties of a word document

### **PowerPoint**

#### **Activity 1:**

- i. Create, open, save and close a Presentation
- ii. Typing, copying, moving and deleting data in presentation.
- iii. New Slide, understanding Slide Layout, adding and deleting slides.

#### **Activity 2:**

Formatting of data in slides:-

- i. Text formatting (font size, font style, font color, subscript, superscript, upper/lower case etc.)

- ii. Text Alignment and character spacing
- iii. Indention and line spacing
- iv. Border and shading
- v. Bullets and Numbering

**Activity 3:**

- i. Set a size, margin, orientation of slides in PowerPoint.
- ii. Adding Tables, header/footers, pictures, page numbers and special symbols, Text Box etc. in your presentation

**Activity 4:**

- i. Adding Animation and Transition Effects in Slides, Understanding Slide Show
- ii. Presentation Views, Understanding Formatting commands in PowerPoint

**Activity 5:**

- i. Create and run Macros in PowerPoint
- ii. Arranging, splitting windows in MS-PowerPoint.

**MS-Excel**

**Activity 1:**

- i. Create, open, save and close workbook?
- ii. Create a new worksheet, renaming and moving sheet.
- iii. Entering, copying, moving and deleting data in cells and worksheets.
- iv. Insert and delete cells, columns and rows in MS-Excel.

**Activity 2:**

- i. Formatting of data in cells:-
- ii. Text formatting (font size, font style, font color, Cell border etc.)
- iii. Text Alignment
- iv. Text Orientation, Text Direction, Text Control.

**Activity 3:**

- i. Find and replace data in a sheet
- ii. Perform data sorting and data filtering in MS-Excel
- iii. Protect your Worksheet and Workbook?
- iv. Enter and perform some basic formulas in ms-excel.

**Activity 4:**

- i. Perform some basic Functions in MS-Excel.
- ii. Create a chart in MS-Excel.
- iii. Create different types of Charts in excel.
- iv. Set a size, margin, orientation of page in Ms-Excel.
- v. The print properties of worksheet in MS-Excel.

**Activity 5:**

- i. Hide and unhide row and column in MS-Excel
- ii. Set column width and row height in MS-Excel.
- iii. Adding text Box, header/footers, pictures and special symbols in your worksheet.
- iv. Arranging, splitting and hiding windows in MS-Excel. And also freezing panes.
- v. Create and run Macros in MS-Excel.

**MS-Access 2010**

**Activity 1:**

- i. Creating with databases and tables
- ii. Linking various Tables

- iii. Queries in Access

**Activity 2:**

- i. Creating forms
- ii. Filling information in forms
- iii. Saving forms

**Activity 3:**

- i. Sorting data
- ii. Filtering Data

**Activity 4:**

- i. Creating reports,
- ii. Using Macro

The breakup of marks for the practical will be as under:

Lab Record	:	05 Marks
Viva Voce	:	10 Marks
Practical Work	:	25 Marks