Name of Techer	DR. SATNAM SINGH	
Department	COMPUTER SCIENCE	
Class & Section	BA 1ST SEM	
Subject and Code	PAPER I Computer and Programming Fundamentals	
Semester Duration	1st September 2022 - 24th December 2022	

Topics

1st September 2022 - 15th September 2022

Computer Fundamentals: Definition, Block Diagram along with its components, characteristics & classification of computers, Applications of computers in various fields.

Memory: Concept of primary & secondary memory,

16th September 2022 - 30th September 2022

RAM, ROM, types of ROM, flash

memory, Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, CD, DVD.

1st October 2022 - 15th October 2022

Computer hardware & software: I/O devices, relationship between hardware and software, types of software,

Operating system: Definition, functions of operating system,

16th October 2022 - 31st October 2022

concept of multiprogramming, multitasking, multithreading, multiprocessing, time-sharing, real time, single-user & multi-user operating system.

Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation, Techniques of Problem Solving: Flowcharting, algorithms, pseudo code,

decision table, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming.

Computer Virus, WORMS, Trojan,

1st December 2022 - 15th December 2022

Searching, Sorting, and Merging: Linear & Binary Searching, Bubble, Selection, and Insertion Sorting, Merging, Design of algorithms for searching, sorting and merging.

16th December 2022 - 24th December 2022

Computer Languages: Analogy with natural language, machine language, assembly language, high-level language, language translators, characteristics of a good programming language.

& REVISION

Note:-

Name of Techer	DR. SATNAM SINGH
Department	COMPUTER SCIENCE
Class & Section	BA 1ST SEM
Subject and Code	PAPER II PC Software
Semester Duration	1st September 2022 - 24th December 2022

Topics

1st September 2022 - 15th September 2022

WINDOWS: Introduction to Windows and its Features, Hardware Requirements of Windows. Windows Concepts, Windows Structure, Desktop, Taskbar, Start Menu, My Pictures, My Music, My Documents, Recycle Bin. Managing Files, Folders and Disk.

16th September 2022 - 30th September 2022

My Computer, Windows Explorer and its Facilities, Using CD, DVD, Pen Drive, Burning CD. Windows Accessories. Entertainment- Media Players, Sound Recorder, Volume Control.

1st October 2022 - 15th October 2022

ADVANCED FEATURES OF WINDOWS:

Managing Hardware & Software - Installation of Hardware & Software,
Using Scanner, Web Camera, Printers. System Tools - Backup, Character Map,
Clipboard Viewer, Disk Defragmenter,
Drive Space, Scandisk, System Information, System Monitor,

16th October 2022 - 31st October 2022

Disk Cleanup, Using Windows Update. Browsing the Web with Internet Explorer, Multiple User Features of Windows, Creating and Deleting User, Changing User Password, etc.

Accessibility Features of Windows - Sharing Folders and Drives, Browsing the Entire Network, Using Shared Printers. Control Panel & its components

Introduction and area of use, Working with Excel, Toolbars, Menus and Keyboard Shortcuts, concepts of Workbook & Worksheets, Using Wizards, Various Data Types, Using different features with Data, Cell and Texts, Inserting, Removing & Resizing of Columns & Rows, Working with Data & Ranges,

Different Views of Worksheets, Column Freezing, Labels, Hiding, Splitting etc., Using different features with Data and Text, Cell Formatting including Borders & Shading.

1st December 2022 - 15th December 2022

ADVANCED FEATURES OF EXCEL:

Multiple Worksheets: Concept, Creating and Using Multiple Worksheets; Use of Formulas, Calculations & Functions, Various types of Functions, Cell Referencing, Absolute and Relative Addressing, Working with Different Chart Types, Chart Wizard, Printing of Workbook & Worksheets with various options,

16th December 2022 - 24th December 2022

Database: Creation, Sorting, Query and
Filtering a Database; Creating and Using Macros; Pivot table & Pivot chart
&
REVISION

Note:-

Name of Techer	DR. SATNAM SINGH	
Department	COMPUTER SCIENCE	
Class & Section	BSC 1ST SEM	
Subject and Code	PAPER I Computer and Programming Fundamentals	
Semester Duration	1st September 2022 - 24th December 2022	

Topics

1st September 2022 - 15th September 2022

Computer Fundamentals: Definition, Block Diagram along with its components, characteristics & classification of computers,
Applications of computers in various fields.
Memory: Concept of primary & secondary memory,

16th September 2022 - 30th September 2022

RAM, ROM, types of ROM, flash memory, Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, CD, DVD.

1st October 2022 - 15th October 2022

Computer hardware & software: I/O devices, relationship between hardware and software, types of software, Operating system: Definition, functions of operating system,

16th October 2022 - 31st October 2022

concept of multiprogramming, multitasking, multithreading, multiprocessing, time-sharing, real time, single-user & multi-user operating system.

Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation, Techniques of Problem Solving: Flowcharting, algorithms, pseudo code,

decision table, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming.

Computer Virus, WORMS, Trojan,

1st December 2022 - 15th December 2022

Searching, Sorting, and Merging: Linear & Binary Searching, Bubble, Selection, and Insertion Sorting, Merging, Design of algorithms for searching, sorting and merging.

16th December 2022 - 24th December 2022

Computer Languages: Analogy with natural language, machine language, assembly language, high-level language, language translators, characteristics of a good programming language.

& REVISION

Note:-

Name of Techer	DR. SATNAM SINGH
Department	COMPUTER SCIENCE
Class & Section	BSC 1ST SEM
Subject and Code	PAPER II PC Software
Semester Duration	1st September 2022 - 24th December 2022

Topics

1st September 2022 - 15th September 2022

WINDOWS: Introduction to Windows and its Features, Hardware Requirements of Windows. Windows Concepts, Windows Structure, Desktop, Taskbar, Start Menu, My Pictures, My Music, My Documents, Recycle Bin. Managing Files, Folders and Disk.

16th September 2022 - 30th September 2022

My Computer, Windows Explorer and its Facilities, Using CD, DVD, Pen Drive, Burning CD. Windows Accessories. Entertainment- Media Players, Sound Recorder, Volume Control.

1st October 2022 - 15th October 2022

ADVANCED FEATURES OF WINDOWS:

Managing Hardware & Software - Installation of Hardware & Software, Using Scanner, Web Camera, Printers. System Tools - Backup, Character Map, Clipboard Viewer, Disk Defragmenter, Drive Space, Scandisk, System Information, System Monitor,

16th October 2022 - 31st October 2022

Disk Cleanup, Using Windows Update. Browsing the Web with Internet Explorer, Multiple User Features of Windows, Creating and Deleting User, Changing User Password, etc.

Accessibility Features of Windows - Sharing Folders and Drives, Browsing the Entire Network, Using Shared Printers. Control Panel & its components

Introduction and area of use, Working with Excel, Toolbars, Menus and Keyboard Shortcuts, concepts of Workbook & Worksheets, Using Wizards, Various Data Types, Using different features with Data, Cell and Texts, Inserting, Removing & Resizing of Columns & Rows, Working with Data & Ranges,

Different Views of Worksheets, Column Freezing, Labels, Hiding, Splitting etc., Using different features with Data and Text, Cell Formatting including Borders & Shading.

1st December 2022 - 15th December 2022

ADVANCED FEATURES OF EXCEL:

Multiple Worksheets: Concept, Creating and Using Multiple Worksheets; Use of Formulas, Calculations & Functions, Various types of Functions, Cell Referencing, Absolute and Relative Addressing, Working with Different Chart Types, Chart Wizard, Printing of Workbook & Worksheets with various options,

16th December 2022 - 24th December 2022

Database: Creation, Sorting, Query and
Filtering a Database; Creating and Using Macros; Pivot table & Pivot chart
&
REVISION

Note:-

Name of Techer	DR. SATNAM SINGH
Department	COMPUTER SCIENCE
Class & Section	B.COM (CAV) 1ST SEM
Subject and Code	BC(Voc)-105 Computer Fundamentals & Logical Organizations
Semester Duration	1st September 2022 - 24th December 2022

Topics

1st September 2022 - 15th September 2022

Introduction to computers: definition, components and characteristics of computers; input and output devices: memory and mass storage devices; memory hierarchy, RAM, ROM, EPROM, PROM and other types of memory, cloud memory; logical organization of computer.

16th September 2022 - 30th September 2022

Number systems, binary arithmetic operations. character codes and error detecting and correcting codes

1st October 2022 - 15th October 2022

Boolean algebra, Boolean functions, truth tables, simplifications of Boolean functions, digital logic gates. combinational logic- adders subtractions, encoders, decoders, multiplexors, demultiplexors. Sequential

16th October 2022 - 31st October 2022

logic- flip flops, shift registers, counters, memory organization semiconductor RAMs and ROMs; machine instructions, instruction formats, addressing modes, instruction cycles; concept of micro-programming; I/O interface, I/O transfer - program - controlled, interrupt controlled, direct memory access.

Computer software – introduction, types of software - system, application and utility software; programming languages; introduction to operating system: types and function of operating system; real time applications;

16th November 2022 - 30th November 2022
operating systems for tabs, mobile phones, etc. – Android, etc; open source software: an
overview, Linux Ubuntu; concepts of translators, linkers and loader.
overview, Emax obunital, concepts of translators, inflicits and fodder
1st December 2022 - 15th December 2022
Application software: spreadsheets, word processors, database management software;
networks basic, types of networks, topologies, media, hardware and software required for
networking.
networking.
16th December 2022 - 24th December 2022
10th December 2022 - 24th December 2022
REVISION
Note:-
The teaching of topics to the students on the duration mentioned above may not be exactly followed and may have little
variations/fluctuations because of some unforeseen circumstances. For example: various Functions/Activities organized
by the College (Musical Meet, Blood Donation, Important Days Celebrations, Co-Curricular/Extra-curricular Activities
etc.), Response of Students in the Class, Request of Students for Repetition of some specific Topics, Practical

Examinations, Unpredicted Leaves, Restricted Holidays etc.

Name of Techer	DR. SATNAM SINGH
Department	COMPUTER SCIENCE
Class & Section	B.COM (CAV) 1ST SEM
Subject and Code	BC(Voc)-106 Business Data Processing & PC Software- 1
Semester Duration	1st September 2022 - 24th December 2022

Topics

1st September 2022 - 15th September 2022

Data processing, various business functions, use of computers in data processing and in carrying out business functions, concepts of data and information, characteristics of information, economics of business data processing,

16th September 2022 - 30th September 2022

impact of data processing on business organizations, information and product flow in production environment, concepts of records and files, various types of file organizations, data

1st October 2022 - 15th October 2022

capturing, data preparation, data verification and validation, and data editing. Word processing: application of word processing, menus and tool bars,

16th October 2022 - 31st October 2022

word processor: creating, entering, saving and printing the document, editing and formatting text, mail merge and macros (preferably latest version of MS Word or Libra Office Writer).

16th November 2022 - 30th November 2022
running statistical applications in Excel and Libra Office Calc,
1st December 2022 - 15th December 2022
creating formulae in spreadsheets. RDBMS software: an overview.
16th December 2022 - 24th December 2022
REVISION
Note:- The teaching of topics to the students on the duration mentioned above may not be exactly followed and may have little variations/fluctuations because of some unforeseen circumstances. For example: various Functions/Activities organized by the College (Musical Meet, Blood Donation, Important Days Celebrations, Co-Curricular/Extra-curricular Activities etc.), Response of Students in the Class, Request of Students for Repetition of some specific Topics, Practical

Examinations, Unpredicted Leaves, Restricted Holidays etc.

Name of Techer	DR. SATNAM SINGH
Department	COMPUTER SCIENCE
Class & Section	BCA 1ST SEM
Subject and Code	BCA-112 Windows and PC Software
Semester Duration	1st September 2022 - 24th December 2022

Topics

1st September 2022 - 15th September 2022

WINDOWS: Introduction to Windows and its Features, Hardware Requirements of Windows. Windows Concepts, Windows Structure, Desktop, Taskbar, Start Menu, My Pictures, My Music, My Documents, Recycle Bin. Managing Files, Folders and Disk.

16th September 2022 - 30th September 2022

My Computer, Windows Explorer and its Facilities, Using CD, DVD, Pen Drive, Burning CD. Windows Accessories. Entertainment- Media Players, Sound Recorder, Volume Control.

1st October 2022 - 15th October 2022

ADVANCED FEATURES OF WINDOWS:

Managing Hardware & Software - Installation of Hardware & Software, Using Scanner, Web Camera, Printers. System Tools - Backup, Character Map, Clipboard Viewer, Disk Defragmenter, Drive Space, Scandisk, System Information, System Monitor,

16th October 2022 - 31st October 2022

Disk Cleanup, Using Windows Update. Browsing the Web with Internet Explorer, Multiple User Features of Windows, Creating and Deleting User, Changing User Password, etc. Accessibility Features of Windows - Sharing Folders and Drives, Browsing the Entire Network, Using Shared Printers. Control Panel & its components

Introduction and area of use, Working with Excel, Toolbars, Menus and Keyboard Shortcuts, concepts of Workbook & Worksheets, Using Wizards, Various Data Types, Using different features with Data, Cell and Texts, Inserting, Removing & Resizing of Columns & Rows, Working with Data & Ranges,

Different Views of Worksheets, Column Freezing, Labels, Hiding, Splitting etc., Using different features with Data and Text, Cell Formatting including Borders & Shading.

1st December 2022 - 15th December 2022

ADVANCED FEATURES OF EXCEL:

Multiple Worksheets: Concept, Creating and Using Multiple Worksheets; Use of Formulas, Calculations & Functions, Various types of Functions, Cell Referencing, Absolute and Relative Addressing, Working with Different Chart Types, Chart Wizard, Printing of Workbook & Worksheets with various options,

16th December 2022 - 24th December 2022

Database: Creation, Sorting, Query and
Filtering a Database; Creating and Using Macros; Pivot table & Pivot chart
&
REVISION

Note:-

Name of Techer	DR. SATNAM SINGH
Department	COMPUTER SCIENCE
Class & Section	BCA 3RD SEM
Subject and Code	BCA – 233 COMPUTER ARCHITECTURE
Semester Duration	1st September 2022 - 24th December 2022

Topics

1st September 2022 - 15th September 2022

Basic Computer Organisation and Design: Instruction Codes, Computer registers, Computer Instructions, Timing and Control, Instruction Cycle,

16th September 2022 - 30th September 2022

Memory reference instructions, Input-Output and Interrupt, Design of Basic computer, Design of accumulator logic

1st October 2022 - 15th October 2022

Register Transfer and Microoperations: Register Transfer Language (RTL), register transfer, Bus and Memory Transfers, Arithmetic Microoperations, Logic Microoperations, Shift Microoperations,

16th October 2022 - 31st October 2022

Arithmetic Logic Shift Unit, Microprogrammed Control: Control memory; address sequencing, microprogram sequencer, Design of Control Unit

Central Processing Unit: General registers Organization, Stack Organization, Instruction formats, Addressing Modes, Data Transfer and Manipulation, Program Control, Program Interrupt, RISC, CISC.

Memory Organization: Memory hierarchy, Auxiliary Memory, Associative Memory, Interleaved memory, Cache memory, Virtual Memory,

1st December 2022 - 15th December 2022

Memory Management Hardware, Input Output Organization:
Peripheral devices, Input-Output Interface, Asynchronous data transfer, Modes of Transfer, Priority Interrupt, Direct Memory Access(DMA),Input-Output Processor(IOP).

16th December 2022 - 24th December 2022

REVISION

Note:-

Name of Techer	DR. SATNAM SINGH
Department	COMPUTER SCIENCE
Class & Section	BCA 5TH SEM
Subject and Code	BCA-353: Artificial Intelligence
Semester Duration	1st September 2022 - 24th December 2022

Topics

1st September 2022 - 15th September 2022

Artificial Intelligence: Intelligence, AI Concepts, Various definitions of AI, Knowledge, Knowledge Pyramid, People and Computers: What computers can do better that people, what people can do better than computers; Characteristics of AI Problems,

16th September 2022 - 30th September 2022

Problem Representation in AI, Components of AI, AI Evolution, Application Areas of AI, History of AI, The Turing Test, The Revised Turing Test

1st October 2022 - 15th October 2022

Expert System: Components of Expert System: Knowledge Base, Inference Engine, User Interface, Features of Expert System, Expert System Life Cycle, Categories of Expert System, Rule Based vs. Model Based Expert Systems,

16th October 2022 - 31st October 2022

Advantages/Limitations of Expert System, Developing an Expert System: Identification, Conceptualization, Formalization, Implementation, Testing, Using an Expert System, Application Areas of Expert System

AI and Search Process: Brute Force Search – Depth First/Breadth First Search, Heuristic Search: Hill Climbing, Constraint Satisfaction, Mean End Analysis, Best First Search, A* Algorithm, AO* Algorithm, Beam Search.

16th November 2022 - 30th November 2022		
Natural Language Processing: Introduction, Need, Goal, Fundamental Problems in Natural		
Language Understanding, How People overcome Natural Language Problems,		
1st December 2022 - 15th December 2022		
1St December 2022 - 15th December 2022		
Speech Recognition: Introduction, Advantages and Approaches, Introduction to Robotics:		
Parts of a Robot, Controlling a Robot,		
Intelligent Robots, Mobile Robots		
16th December 2022 - 24th December 2022		
REVISION		
Note:-		

Name of Techer	DR. SATNAM SINGH
Department	COMPUTER SCIENCE
Class & Section	BCA 5TH SEM
Subject and Code	BCA-354: Computer Networks
Semester Duration	1st September 2022 - 24th December 2022

Topics

1st September 2022 - 15th September 2022

Introduction to Data Communication and Computer Networks;
Uses of Computer Networks; Types of Computer Networks and their Topologies; Network
Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards
and PC Cards, Bridges, Switches, Routers, Gateways; Network Software: Network Design
issues and Protocols;

16th September 2022 - 30th September 2022

Connection-Oriented and Connectionless Services; OSI Reference Model; Networking Models: Distributed Systems, Client/Server Model, Peer-to-Peer Model, Web-Based Model and Emerging File-Sharing Model;

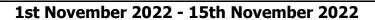
1st October 2022 - 15th October 2022

Analog and Digital data and signals; Bandwidth and Data Rate, Capacity, Baud Rate; Transmission Impairment; Data Rate Limits; Guided Transmission Media; Wireless Transmission; Communication Satellites; Switching and Multiplexing; Modems and Modulation techniques; ADSL and Cable Modems;

16th October 2022 - 31st October 2022

Data Link Layer Design issues; Error Detection and Correction; Sliding Window Protocols: One-bit,

Go Back N and Selective Repeat; Media Access Control: ALOHA,



Slotted ALOHA, CSMA, Collision

free protocols; Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet; Token Ring; Introduction to Wireless LANs and Bluetooth; VLANs

16th November 2022 - 30th November 2022		
Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Link State		
Routing, Hierarchical Routing; Congestion Control; Traffic shaping; Choke packets; Load shedding;		
1st December 2022 - 15th December 2022		
Elements of Transport Protocols; Network Security Issues: Security attacks; Encryption methods; Digital Signature; Digital Certificate		

16th December 2022 - 24th December 2022

REVISION

Note:-