

Lesson Plan Session: 2024-25 (ODD Semester)

Name of the Assistant Professor- Ritu Narwal Subject- Computer Science

Month	BCA (1st Sem) B23-CAP-102, Foundation of Computer Science.	BCA 5th Sem BCA-355, Visual Basic	BCA5th Sem BCA-356, Multimedia Tools.
July- August	Computer Fundamentals: Evolution of Computers through generations, Characteristics of Computers, Strengths and Limitations of Computers, Classification of Computers, Functional Components of a Computer System, Applications of computers in Various Fields. Types of Software: System software, Application software, Utility Software, Shareware, Freeware, Firmware, Free Software.	Introduction to VB: Visual & Non-Visual programming, Procedural, Object-Oriented, Object-Based and Event-Driven Programming Languages, VB as Even-Driven and Object-Based Language, VB Environment: Menu bar, Toolbar, Project explorer, Toolbox, Properties Window, Form Designer, Form Layout, Immediate window, Default Controls in Tool Box Visual Development and Event Driven programming	Multimedia: Basic Concept, Definition, Components & Applications of Multimedia, Hypermedia and Multimedia; Multimedia Hardware and Software; Multimedia Software Tools; Presentation Tools;
September	Memory Systems: Concept of bit, byte, word, nibble, storage locations and addresses, measuring units of storage capacity, access time, concept of memory hierarchy. Primary Memory - RAM, ROM, PROM, EPROM. Secondary Memory - Types of storage devices, Magnetic Tape, Hard Disk, Optical Disk, Flash Memory. I/O Devices: I/O Ports of a Desk Top Computer, Device Controller, Device Driver. Input Devices: classification and use, keyboard, pointing devices - mouse, touch pad and track ball, joystick, magnetic stripes, scanner, digital camera, and microphone Output Devices: speaker, monitor, printers: classification, laser, ink jet, dot-matrix, Plotter.	Basics of Programming: Variables: Declaring Variables, Types of variables, Converting Variables Types, User Defined Data Types, Forcing Variable Declaration, Scope & Lifetime of Variables. Constants: Named & Intrinsic, Operators: Arithmetic, Relational & Logical operators, Input/output in VB: Various Controls for I/O, Message box, Input Box, Print statement.	Multimedia Authoring: Introduction, Features, Types of Authoring Tools: Card or Page-Based, Icon-Based, Time-Based, Object-Oriented; VRML: History, Features Images: Graphics/Image Data Types, File Formats; Color Models in Images and Video; Video: Introduction, Types of Video Signals: Analog and Digital Video; Analog Video Standards: NTSC, PAL, SECA; Digital Video Standards: Chroma Subsampling, CCIR Standards, HDTV

Ritu Narwal

October	<p>Introduction to Operating System: Definition, Functions, Features of Operating System, Icon, Folder, File, Start Button, Task Bar, Status Buttons, Folders, Shortcuts, Recycle Bin, Desktop, My Computer, My Documents, Windows Explorer, Control Panel.</p> <p>The Internet: Introduction to networks and internet, history, Intranet, Intranet & Extranet, Working of Internet, Modes of Connecting to Internet.</p> <p>Electronic Mail: Introduction, advantages and disadvantages, User Ids, Passwords, e-mail addresses, message composition, mailer features. Browsers and search engines.</p>	<p>Decision Statements in VB - if statement, if-then-else, select-case; Looping Statements in VB: do-loop, for-next, while-wend; Exit statement, Nested Control Structure; Arrays: Declaring and using Arrays, One-dimensional, Two-dimensional and Multi-dimensional Arrays, Static and Dynamic arrays, Array of Arrays.</p>	<p>Digital Audio: Basic Concepts, Analog vs. Digital Audio, Digitization of Sound, Digital Audio File Formats, MIDI Quantization and Transmission of Audio; Coding of Audio; Pulse Code Modulation; Differential Coding of Audio; Lossless Predictive Coding; DPCM; DM; ADPCM</p>
November	<p>Threats: Physical & non-physical threats, Virus, Worm, Trojan, Spyware, Keyloggers, Rootkits, Adware, Cookies, Phishing, Hacking, Cracking.</p> <p>Computer Security Fundamentals: Confidentiality, Integrity, Authentication, Non-Repudiation, Security Mechanisms, Security Awareness, Security Policy, anti-virus software & Firewalls, backup & recovery.</p>	<p>Procedures: General & Event Procedures, Subroutines, Functions, Calling Procedures, Arguments - Passing Mechanisms, Optional Arguments, Named Arguments, Functions Returning Custom Data Types</p> <p>Simple Program Development in VB such as Sum of Numbers, Greatest among Numbers, Checking Even/Odd Number, HCF of Two Numbers, Generate Prime Numbers, Generate Fibonacci Series, Factorial of a Number, Searching, Sorting, etc.</p>	<p>Compression Techniques: Introduction, Types of Data Compression, Run-Length Coding, Variable-Length Coding, Dictionary-Based Coding, Transform Coding.</p> <p>Image and Video Compression Techniques: JPEG Standard for Image Compression; JPEG Mode, Video Compression Techniques: H.261, H.263, MPEG</p>

Subject/Month	July- August	September	October	November
B.A 1st Sem, SEC PAPER-I: Office and Spreadsheet Tools Learning	Operating System - Definition, Functions, Types of Operating System, Basics of Popular Operating Systems, The User Interface, Exploring Computer, Icons, taskbar, desktop, Using Menu and Menu-selection, managing files and folders, Control panel - display properties, add/remove software and hardware, Common utilities.	Word Processing - Introduction to Word Processing, Menus, Creating, Editing & Formatting Document, Spell Checking, Printing, Views, Tables, Word Art, Mail Merge, Macros, Inserting hyperlinks, Searching for text, Modifying page setup, Applying document themes, Applying document style sets, Inserting headers and footers.	Spread Sheet: Elements of Electronics Spread Sheet, Applications, Creating and Opening of Spread Sheet, Menus, Manipulation of cells: Enter text numbers and dates, Cell Height and Widths, Copying of cells, Mathematical, Statistical and Financial function, Drawing different types of charts, Sort and Filter Data.	Presentation Software: Creating, Modifying and enhancing a presentation, Type of presentation views, Using sound, Animation, Working with Objects, Printing

Subject/Month	July- August	September	October	November
B.A 3 rd Sem, SEC PAPER-I: Advance IT Skills	W/W and E-Governance - Website Address and URL, Introduction to IP, Address, ISP and Role of ISP, Internet Protocol, Modes of Connecting Internet (HotSpot, Wi-Fi, LAN Cable, Broadband, USB Tethering), Identifying and uses of IP/MAC/IMEI of various devices, Downloading Web Pages, Printing Web Pages Introduction to Blogs, Basics of E-commerce, Netiquettes, Overview of e-Governance Services like Railway Reservation, Passport, eHospital (ORS), Accessing e-Governance Services on Mobile, Digital Financial Tools and Applications Digital Financial Tools,	Understanding OTP [One Time Password] and QR [Quick Response] Code, UPI [Unified Payment Interface], AEPs [Aadhaar Enabled Payment System], USSD[Unstructured Supplementary Service Data], Card [Credit / Debit], eWallet, PoS [Point of Sale], Internet Banking, National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS), Immediate Payment Service (IMPS), Online Bill Payment	Cyber Security: Cyber Security, Defining Cyberspace, Architecture of cyberspace, Regulation of cyberspace, Concept of cyber security, Issues and challenges of cyber security. Classification of cybercrimes, Common cybercrimes- cybercrime targeting computers and mobiles, cybercrime against women and children, financial frauds, social engineering attacks, malware and ransomware attacks, zero day and zero click attacks, Cybercriminals modus-operandi . Reporting of cybercrimes, Remedial and mitigation measures, Legal perspective of cybercrime, IT Act 2000 and its amendments, Cybercrime and its offences, Organisations dealing with Cybercrime and Cyber security in India.	Overview of Futureskills: Introduction to Internet of Things (IoT), Big Data Analytics, Cloud Computing, Virtual Reality, Artificial Intelligence, Social & Mobile, Blockchain Technology, 3D Printing/ Additive Manufacturing, Robotics Process Automation.