SMARTBTR FOUNDATION

ESTD. 2024

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SMARTBTR INSTITUTE OF TECHNOLOGY INTERNATIONAL

GOSSAIGAON, KOKRAJHAR BTR ASSAM

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Course Title : ADCA (Advanced Diploma in Computer Applications)

Course Duration: 12 months

Course Fees: INR. : Rs. 6,000   **Eligibility:** 10+2 Passed with above 40%

Prerequisites: No experience required

Semester I

TOPICS

1. Computer Fundamentals
2. Microsoft Windows
3. Microsoft Excel
4. Microsoft Powerpoint
5. Email and Internet
6. Computer Network and Multimedia
7. Introduction to Computers
8. Principle of Programming
9. Word Processing and Spreadsheet
10. System Analysis and Design
11. Computer Graphics
12. Management Information Systems

Semester II

TOPICS

1. Corel Draw
2. Tally
3. Visual Basic
4. Photoshop CS
5. C Programming
6. C++ Programming
7. JAVA Programming
8. Python Programming
9. Operating System
10. Database

SEMESTER I

Session-1: Computer Fundamentals Basic Topics

- Introduction to Computers, Components of a Computer System(Hardware,_Software), Input and Output Devices, Memory and Storage(RAM, ROM, Hard Drives, SSDs) , Central Processing Unit (CPU), Operating Systems, Basic Computer Operations (Booting, File Management), Number Systems (Binary, Decimal, Hexadecimal), Basic Networking Concepts(LAN, WAN, Internet) , Introduction to Computer Software (System Software , Application Software), Computer Security Basics (Antivirus, Firewalls) ,Fundamentals of Databases, Introduction to Programming Languages, Basics of the Internet and Web Browsers, Email and Communication Tools ,Basic Troubleshooting

Session-2: Microsoft Windows Topics

- Introduction to Windows, Windows User Interface , Desktop (Taskbar, Start Menu) ,File Management(File Explorer, Creating, Moving, and Deleting Files and Folders),

System Settings(Control Panel, Settings App) , User Accounts(Creating and Managing User Accounts, User Permissions) , Software Installation and Management(Installing and Uninstalling Applications, Windows Update) , System Maintenance (Disk Cleanup , Defragmentation),Basic Troubleshooting(Task Manager, System Restore ,Safe Mode), Keyboard Shortcuts (Common Shortcuts (e.g., Ctrl+C, Ctrl+V),Windows Key Shortcuts (e.g., Windows + D))

Session-3: Microsoft Excel Topics

- Introduction to Excel, Creating and Saving Workbooks , Basic Cell Operations(Entering Data , Editing Data , Formatting Cells) , Formulas and Functions(Basic Arithmetic Operations , Common Functions (SUM, AVERAGE, MIN, MAX), Cell Referencing, Data Formatting, Working with Tables (Creating Tables , Table Styles, Worksheet Management (Inserting and Deleting Sheets , Renaming Sheets , Moving and Copying Sheets), Basic Printing Options(Print Preview , Setting Print Area , Page Setup)

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SESSION 4: Microsoft Powerpoint

- Introduction to PowerPoint , Creating and Saving Presentations, Slide Layouts and Templates , Inserting and Formatting Text , Adding and Formatting Images , Using Shapes and SmartArt , Working with Charts and Graphs , Applying Transitions between Slides , Adding Animations to Objects , Using Slide Master for Consistency , Running and Navigating a Slide Show , Speaker Notes and Presenter View , Printing Presentations , Sharing and Collaborating on Presentations , Exporting Presentations in Different Formats

SESSION 5: Email and Internet

- Introduction to Email and Internet, Email Basics (Setting up and managing email accounts , Composing, sending, and receiving emails , Understanding email etiquette and best practices) , Internet Fundamentals , Online Communication Tools, Privacy and Security (Protecting personal information online, Recognizing and avoiding online threats like malware and scams , Understanding the importance of data privacy and secure browsing habits) , Social Media Awareness (Understanding the role of social media platforms in online communication and networking , Practicing responsible and safe social media usage) , Utilizing email for tasks such as sending links and attachments.

SESSION 6: Computer Networks and Multimedia

- Computer Network basic, work flow , Understanding the concept of computer networks and their importance in modern computing , Exploring different types of networks (LAN, WAN, WLAN) and their characteristics , □ Network Protocols (TCP/IP, HTTP, and FTP) , Understanding the role of protocols in facilitating communication between devices on a network , Network Devices and Infrastructure , Network Security , Multimedia Fundamentals , Understanding multimedia elements such as (text, images, audio, video) , Emerging Trends , Exploring emerging trends in computer networking and multimedia technologies such as IoT (Internet of Things), AR/VR (Augmented Reality/Virtual Reality), and 5G networking.

SESSION 7: introduction to Computer

- What is a Computer , Definition of a computer(Purpose and functions , Evolution of computers), Hardware vs. Software , (Explanation of hardware and software , Examples of hardware components , Examples of software types) , Basic Computer Components { CPU (Central Processing Unit) , RAM (Random Access Memory) , Hard Drive/SSD (Solid State Drive) } , Input and Output Devices , Examples of input devices (keyboard, mouse), Examples of output devices (monitor, printer) , Data Storage (Types of data storage devices , Difference between HDDs and SSDs , Importance of data storage) , Computer Software (Explanation of system software , Explanation of application software , Examples of each type) , Computer Operations (Booting Up , Managing files and folders , Shutting down) , Computer Security , Importance of computer security , Basic security measures (antivirus, firewalls) , Tips for keeping computers secure

SESSION 8: Principle of Programming

- Fundamental concepts of programming , Overview of programming languages , Importance of programming in modern technology , Understanding algorithms , Breaking down Programm into smaller steps , Debugging and troubleshooting code

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SESSION 9: Word Processing and Spreadsheet

- Word Processing (Introduction to word processing software , Creating, editing, and formatting text documents , Working with fonts, styles, and formatting options) ,
- Spreadsheet Basics (Introduction to spreadsheets and spreadsheet software , Understanding cells, rows, columns, and worksheets , Entering and editing data in cells) ,
- Formulas and Functions (Using basic arithmetic formulas in spreadsheets (e.g., addition, subtraction) , Introduction to common functions (e.g., SUM, AVERAGE, MAX, MIN)) , Referencing cells and ranges in formulas)

SESSION 10: System Analysis and Design

- Introduction to System Analysis and Design (Definition and importance of system analysis and design , The role of a systems analyst) ,
- System Development Life Cycle (Overview of the SDLC phases: Planning, Analysis, Design, Implementation, and Maintenance , Importance of each phase in the system development process) ,
- Requirements Gathering and Analysis (Techniques for collecting system requirements (interviews, surveys, observation) , Analyzing and documenting requirements , Creating use case diagrams and flowcharts)

SESSION 11:Computer Graphics

- Introduction to Computer Graphics: (Definition and importance of computer graphics , Applications of computer graphics in various fields) ,
- Graphics Hardware and Software: (Overview of graphics hardware (e.g., GPUs, monitors) , Introduction to graphics software and tools (e.g., Adobe Photoshop, Blender)) ,
- Basic Concepts and Techniques: (Understanding pixels, resolution, and color
- RGB, CMYK) , Basic drawing techniques (lines, shapes, text) , Image manipulation (scaling, rotating, cropping))

SESSION 12: Management Information Systems (MIS)

- Introduction to Management Information Systems : (Definition and purpose of MIS , Importance of MIS in organizations)
- Components of MIS: (Hardware, software, data, procedures, and people , How these components interact to support business processes) ,
- Types of Information Systems: (Transaction Processing Systems , Decision Support Systems , Executive Information Systems)

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SEMESTER II

SESSION 1: Corel DRAW

- Introduction to CorelDRAW: (Overview of CorelDRAW and its uses , Understanding the interface and workspace) ,
- Basic Drawing and Shaping Tools: (Using basic drawing tools (line, rectangle, ellipse) , Modifying shapes and lines) ,
- Working with Text and Colors: (Adding and formatting text , Applying and managing colors and fills)

SESSION 2: Tally

- Introduction to Tally: (Overview of Tally and its uses in accounting , Understanding the interface and basic navigation) ,
- Creating and Managing Accounts: (Setting up company information , Creating and managing ledgers and groups) ,
- Voucher Entry and Transactions: (Recording different types of vouchers (sales, purchases, payments, receipts) , Managing and viewing transaction reports)

SESSION 3: Visual Basic

- Introduction to Visual Basic: Overview and history of Visual Basic , Understanding the Visual Basic Integrated Development Environment (IDE) ,
- Basic Programming Concepts in Visual Basic Variables and data types , Basic syntax and operators , Control structures: If statements, loops (For, While) ,
- Creating User Interfaces: (Designing forms and adding controls (buttons, text boxes, labels) , Event-driven programming: handling events like button clicks and form inputs)

SESSION 4: Photoshop

- Introduction to Photoshop CS: (Overview of Photoshop and its uses , Understanding the interface and workspace) , Basic Image Editing: (Opening, saving, and exporting images , Basic tools: crop, resize, and rotate) , Working with Layers (Creating and managing layers , Layer blending modes and opacity)

SESSION 5: Programming Languages

- C Programming:
- What is C programming?
- Basic structure of a C program (including main function)
- Writing and running a simple C program (e.g., Hello World)
- C++ Programming:
- What is C++ programming?
- Basic structure of a C++ program
- Writing and running a simple C++ program (e.g., Hello World with basic class example)
- Java Programming:
- What is Java programming?
- Why Java is widely used (platform independence)
- Basic structure of a Java program
- Writing and running a simple Java program (e.g., Hello World)
- Python Programming:
- What is Python programming?
- Why Python is popular (ease of use, readability)
- Basic structure of a Python program
- Writing and running a simple Python program (e.g., Hello World)
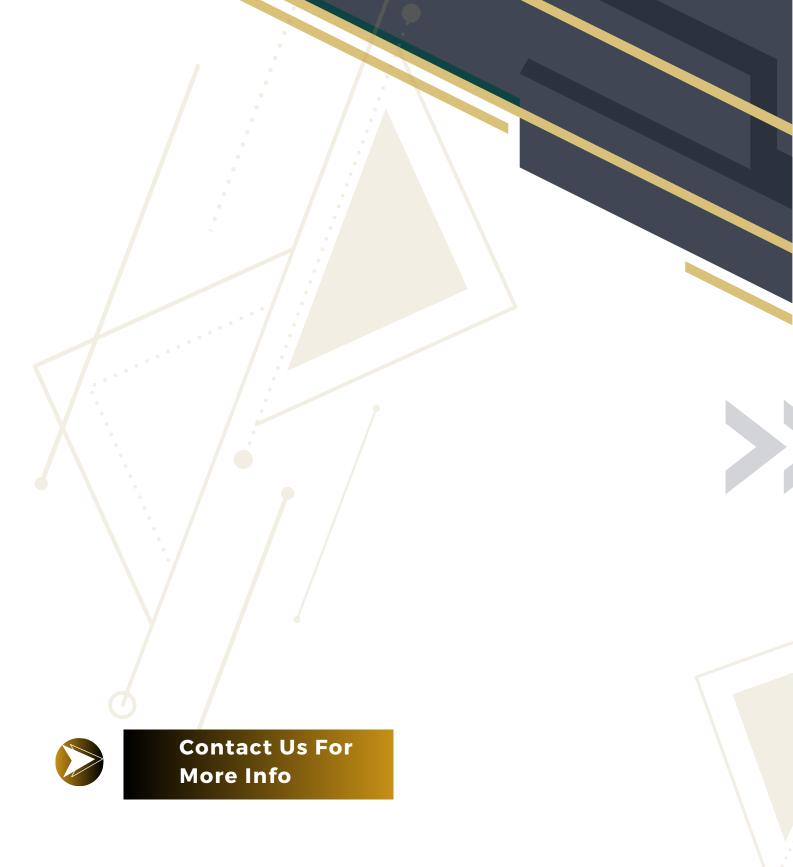
SESSION 6: Operating Systems

- Introduction to Operating Systems: (What is an operating system (OS)? , Importance of OS in computer systems , Examples of popular operating systems (Windows, macOS, Linux) , Basic Functions of an Operating System: (Managing hardware resources (CPU, memory, storage) , Providing user interfaces (GUI, command-line interface) , Handling file management and I/O operations , Types of Operating Systems: (Single-user vs. multi-user operating systems , Single-tasking vs. multi-tasking operating systems , Real-time operating systems (RTOS) ,

- **Key Concepts in Operating Systems: (Process management: creation, scheduling, and termination of processes , Memory management: allocation and deallocation of memory resources , File system management: organizing and accessing files and directories) , Security and Protection: (User authentication and access control , Data security measures (encryption, permissions) , Protection mechanisms to prevent unauthorized access and ensure system integrity , Introduction to System Administration: (Basics of system administration tasks (user management, system updates, backups) , Role of a system administrator in managing and maintaining an operating system**

SESSION 7: Database

- **Introduction to Databases: (Understanding what a database is and its importance ,Basic overview of database management systems (DBMS) ,**
- **Relational Database Concepts: (Tables, rows, and columns , Primary keys and foreign keys) ,**
- **Database Design:**
- **Constraints such as NOT NULL, UNIQUE, Ensuring data consistency and integrity**

Contact Us For More Info

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