

## **Module I [60 Hours IT Training]**

### **Chapter One: Computer Fundamentals [5 Hours]**

#### **Learning Objectives**

- *To acquire the basic knowledge on computer fundamentals including computer hardware, and software,*
- *To understand the operating system, structure and organization of file system,*
- *To gain practical knowledge of computer networks and their applications in an organization,*
- *To familiarize with computer security and its different dimensions,*
- *To understand how a computer program is written and how it works, and*
- *To become acquainted with internet and intranet technology.*

#### **1.1 Computer and Digital Basics**

- 1.1.1 Computer Basics: Definitions, History, types and applications,
- 1.1.2 Digital basics: Definition, Digital computers and their features, Digital Vs Analog computers.

#### **1.2 Computer Hardware and Software**

- 1.2.1 Computer Hardware: Monitor, Mother board, Storage Devices, Processor, Printer, Scanner, Keyboard, Mouse, Power supply, Different types of Memory,
- 1.2.2 Computer Software: Definition, Application Software and System Software.

#### **1.3 Operating Systems and File Management**

- 1.3.1 Introduction to an Operating System,
- 1.3.2 Functions of an Operating System,
- 1.3.3 Types of Operating System,
- 1.3.4 File Management in MS DOS and MS Windows Operating System.

#### **1.4 Basic Concepts to Programming/Coding and Working Mechanism of a Computer Program**

- 1.4.1 Introduction to a computer program,
- 1.4.2 Programming Languages and their types: high level and low level,
- 1.4.3 Solving a problem using a computer.

#### **1.5 Computer Network and Types**

- 1.5.1 Introduction to Computer Network,
- 1.5.2 Advantages of Computer Network,
- 1.5.3 Types of networks: LAN, WAN and MAN,
- 1.5.4 Network Topologies,
- 1.5.5 Ethernet cables and their types,
- 1.5.6 Most frequently used Network equipment,
- 1.5.7 Concept of IP address,
- 1.5.8 Corporate Network Structure.

## **1.6 Data Security, Privacy, System Security and Data Backup**

- 1.6.1 Introduction to computer security: System Security, Information Security, Data Security, Application Security and Network Security,
- 1.6.2 Basic components in computer security: CIA triad,
- 1.6.3 Privacy and Freedom of Expression,
- 1.6.4 Security threats and attacks,
- 1.6.5 Introduction to Firewall and its use in an organization,
- 1.6.6 Security Tools and Mechanisms,
- 1.6.7 Data Backup and Disaster Recovery.

## **1.7 Internet, Intranet, Ethernet, Website, and E-mail**

- 1.7.1 Application of Internet, Intranet and Ethernet in an organization,
- 1.7.2 Website development and hosting for an organization,
- 1.7.3 Use of Email in an organization and its requirement.

## **1.8 Graphical User Interface**

- 1.8.1 Introduction to GUI and CUI,
- 1.8.2 Advantages and Disadvantages of GUI and CUI,
- 1.8.3 Features of GUI based Operating System: Pointer, Icons, Desktop, Windows, Menus, Folders.

## **Chapter Two: MS Office Application [1 hour]**

### **Learning Objectives**

- *To familiarize with Microsoft Office and its historical development,*
- *Understanding the basic uses and features of various MS Office components.*

### **2.1 Introduction to MS Office (Based on recent version of MS Office)**

- 2.1.1 Introduction,
- 2.1.2 Different versions of MS Office,
- 2.1.3 Components in MS office.

### **2.2 Uses and basic features of MS- Word, Excel, and Power-Point**

- 2.2.1 Uses and basic features of MS Word,
- 2.2.2 Uses and basic features of MS Excel,
- 2.2.3 Uses and basic features of MS Power-point,
- 2.2.4 Uses and basic features of MS Access,
- 2.2.5 Uses and basic features of MS One Note.

## **Chapter Three: MS - Word [7 hours]**

### **Learning Objectives**

- *To learn to create and format a content in MS word,*
- *To perform common tasks in MS Word, such as opening, viewing, editing, saving, and printing documents,*

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- *To expose students to text and paragraphs formatting including font, size, color, background etc.*
- *To work with the mail merge option available in MS word,*
- *To use formulas and Citations, and*
- *To customize MS word options to make them more convenient*

### **3.1 Creating Content**

- 3.1.1 Create a blank word document,
- 3.1.2 Create a document from template,
- 3.1.3 Components/Elements of the MS Word user interface (Menu, Toolbars, Status bar, Rulers, Scrollbars),
- 3.1.4 Saving and closing a word document,
- 3.1.5 Opening a word document,
- 3.1.6 Change font, font-size, font-style and other text effects (bold, italics, underline etc.),
- 3.1.7 Copying, Moving, and Deleting the text,
- 3.1.8 Finding and Replacing text,
- 3.1.9 Setting Page Layout,
- 3.1.10 Creating lists with bullets and numbering,
- 3.1.11 Creating and Manipulating Tables;
- 3.1.12 Creating superscript and subscript,
- 3.1.13 Using borders and shading,
- 3.1.14 Working with picture, Shapes, Chart, SmartArt,
- 3.1.15 Insert Symbols and Equations,
- 3.1.16 Protect document (Set password, restrict editing).

### **3.2 Formatting, Printing documents**

- 3.2.1 Formatting text (font, size, color, alignment, background, line & paragraph spacing),
- 3.2.2 Page setup,
- 3.2.3 Margin Formatting,
- 3.2.4 Change orientation of the document,
- 3.2.5 Use of Indentation and Tab Setting,
- 3.2.6 Inserting Header, Footer, Footnotes, Endnotes, Page Numbers,
- 3.2.7 Inserting Page break and Section break,
- 3.2.8 Insert and Format Graphics, Pictures, Charts, Watermark, Word Art, Symbols & Organization Chart,
- 3.2.9 Inserting formulas and functions in tables,
- 3.2.10 Create and apply styles,
- 3.2.11 Creating Table of Content, Table of Figures, and Citations,
- 3.2.12 Use of format painter to copy formatting,
- 3.2.13 Use of track changes and comments,
- 3.2.14 Printer properties Setup,
- 3.2.15 Settings for printing a document,
- 3.2.16 Previewing and printing document.

### **3.3 Mailing documents**

- 3.3.1 Introduction to mail merge,
- 3.3.2 Applications of mail merge in an organization,
- 3.3.3 Working mechanism of mail merge.

### **3.4 Customizing Microsoft Word**

- 3.4.1 Customize toolbars and menu,
- 3.4.2 Customize quick access tool bar,
- 3.4.3 Customize ribbon,
- 3.4.4 Customize status bar,
- 3.4.5 Proofing Word Options (Autocorrect, spelling and grammar options),
- 3.4.6 Other customizations using Word Options.

## **Chapter Four: MS -Excel [14 Hours]**

### **Learning Objectives**

- *To familiarize with the Microsoft Office Excel environment,*
- *To understand the concept of cell referencing (addressing) and use it in formulas and functions of MS Excel,*
- *To work with multiple worksheets and multiple workbooks,*
- *To understand how to use functions and formulas in MS Excel,*
- *To create and modify charts and graphics from Excel Data,*
- *To format rows, columns and cells as per requirement,*
- *To work with Excel for sorting and filtering data,*
- *To apply conditional formatting in a cell,*
- *To create and use pivot tables and charts for data analysis in Excel,*
- *To import data into Excel from other sources and export the excel data into other formats,*
- *To consolidate the data from multiple worksheets and workbooks,*
- *To make setting and validate the input data in Excel document,*
- *To protect the Excel sheet from unauthorized use,*
- *To customize MS Excel options to make them more convenient.*

### **4.1 Creating Worksheet and Managing Multiple Worksheets, Cell Referencing, Range**

- 4.1.1 Basic terminologies in MS Excel: Cells, Rows, Columns, Worksheet, Workbook and Workspace,
- 4.1.2 Elements of MS Excel Environment (Menu, Toolbars, Status bar, Rulers, Scrollbars etc.),
- 4.1.3 Creating a blank workbook and a workbook from template,
- 4.1.4 Opening and Viewing workbooks (Opening an existing workbook, opening a recent workbook, opening multiple workbooks, protected view),
- 4.1.5 Editing, Copying, Moving, Deleting Cell Contents,
- 4.1.6 Cell range,
- 4.1.7 Cell referencing (Relative Cell References, Absolute Cell References, and Mixed Cell References),

- 4.1.8 Working with multiple worksheets (Viewing multiple worksheets at once, using formulas to link worksheets, consolidating data from multiple worksheets, importing multiple excel sheets from multiple Excel workbooks),
- 4.1.9 Saving workbook,
- 4.1.10 Page Setting, Previewing and Printing Work Book.

#### **4.2 Formatting data and contents, Excel Charts, Hyperlink**

- 4.2.1 Format Cells (Number, Alignment, Font, Border, Fill, Protection, Wrap Text, Merge cells),
- 4.2.2 Cell styles,
- 4.2.3 Font formatting (font, size, color),
- 4.2.4 Inserting and Deleting rows, columns and cells,
- 4.2.5 Changing column width and row height,
- 4.2.6 Hiding Columns and Rows,
- 4.2.7 Format Painter,
- 4.2.8 Inserting Header and Footer, Picture, Object and Document,
- 4.2.9 Creating Excel charts (2-D and 3-D Column Charts, 2-D and 3-D Bar Charts, Line diagram, 2-D, 3-D and Doughnut Pie Charts, Scatter diagram etc.),
- 4.2.10 Creating hyperlink.

#### **4.3 Importing and Exporting Data**

- 4.3.1 Exporting Excel data into other formats (Export to PDF/XPS document, Change file types such as .CSV, .txt, .xls, .ods etc),
- 4.3.2 Importing data from other data sources (Microsoft Access Database, Web Page, Text File).

#### **4.4 Formulas including advanced Excel Functions**

- 4.4.1 Creating and using a formula,
- 4.4.2 Creating and using common formula functions (sum, average, maximum, minimum, count etc.),
- 4.4.3 Use commonly used Mathematical, Financial, Date and Time, String, Logical, and Statistical functions,
- 4.4.4 Differences between Formulas and Functions in Excel.

#### **4.5 Filter, Conditional Formatting and logical operators**

- 4.5.1 Data sorting,
- 4.5.2 Filter data in a range or table (Use of Single and Multiple filters, Text/Number Filters and Filter by Color),
- 4.5.3 Use of conditional formatting (Highlight Cell Rules, Top/Bottom Rules, Data bars, Color Scales, Icon sets),
- 4.5.4 Create a custom conditional formatting rule,
- 4.5.5 Use of logical operators (AND, OR, XOR, NOT).

#### **4.6 Consolidation of Data and Data Analysis, Multi-dimensional analysis of data**

- 4.6.1 Consolidating Data in the Same Workbook,
- 4.6.2 Consolidating Data from Different Workbooks,

- 4.6.3 Dynamic Data Consolidation,
- 4.6.4 Data analysis Using Analysis Tools: Descriptive Statistics, Histogram, Correlation, Covariance,
- 4.6.5 Summarizing Data with Sub Totals,
- 4.6.6 What-If Analysis,
- 4.6.7 Working with Goal Seek and Scenario Manager for What-If-Analysis,
- 4.6.8 Multidimensional data analysis with Excel pivot table.

#### **4.7 Data Validation and Protection**

- 4.7.1 Data validation (Setting rules, Input Message, Error Alert),
- 4.7.2 Circle Invalid Data,
- 4.7.3 Protect Workbook (Set password, Mark as Final, protect Workbook structure and protect Sheet).

#### **4.8 Pivot table report, pivot chart report**

- 4.8.1 Create a PivotTable in Excel,
- 4.8.2 Use PivotTable to create Customs Reports in Excel,
- 4.8.3 Create a Pivot chart from a PivotTable.

#### **4.9 Customizing Excel**

- 4.9.1 Customize toolbars and menu,
- 4.9.2 Customize quick access tool bar,
- 4.9.3 Customize ribbon,
- 4.9.4 Customize status bar,
- 4.9.5 Proofing Excel Options (Autocorrect, spelling and grammar options),
- 4.9.6 Adding and Removing Add-ins,
- 4.9.7 Other customizations using Excel Options.

### **Chapter Five: MS-PowerPoint [8 Hours]**

#### **Learning Objectives**

- *To familiarize with the Microsoft Office PowerPoint environment,*
- *To create presentation slides, and use themes and templates,*
- *To create slide presentations that include text, graphics, animation, and transitions,*
- *To make attractive presentation slides by formatting the content as per requirement,*
- *To learn to show the presentation in different ways,*
- *To learn how to share the presentation with others in a team,*
- *To use content of other office tools such as MS Excel and MS Word in a presentation,*
- *To protect presentation document from unauthorized actions.*

#### **5.1 Creating Content, Templates and theme, SmartArt Graphics**

- 5.1.1 Creating blank presentation,
- 5.1.2 Creating presentation from templates,
- 5.1.3 Basic components in presentation slide,
- 5.1.4 Saving a presentation,
- 5.1.5 Opening a presentation,

- 5.1.6 Change presentation view,
- 5.1.7 Change the slide layout,
- 5.1.8 Adding a new slide,
- 5.1.9 Adding a slide from other presentation,
- 5.1.10 Using themes in presentation slide,
- 5.1.11 Use of SmartArt graphics in slides.

## **5.2 Editing and Formatting content and Video**

- 5.2.1 View modes,
- 5.2.2 Designing slides,
- 5.2.3 Format color, text, background,
- 5.2.4 Replace fonts throughout the presentation,
- 5.2.5 Format placeholder,
- 5.2.6 Use of bullets and numbering,
- 5.2.7 Edit document properties,
- 5.2.8 Change layout,
- 5.2.9 Edit slide master,
- 5.2.10 Working with an image (Photo album, format picture),
- 5.2.11 Add clip art,
- 5.2.12 Inserting Audio and Video files into slide and formatting them,
- 5.2.13 Add header and footer.

## **5.3 Animation, Style galleries, working with animation effects**

- 5.3.1 Add animation (Entrance, Emphasis, Exit),
- 5.3.2 Use of animation pane,
- 5.3.3 Use of animation painter,
- 5.3.4 Edit animations,
- 5.3.5 Slide Transitions and effect options,
- 5.3.6 Quick styles.

## **5.4 Managing and Showing Presentation**

- 5.4.1 Launch Slide Show: From beginning, From current slides, Customs slide show,
- 5.4.2 Navigation Slide Show,
- 5.4.3 Set Up Slide Show,
- 5.4.4 Set automatic timing,
- 5.4.5 Hide slides.

## **5.5 Sharing & editing presentation (PowerPoint collaboration tools)**

- 5.5.1 Saving power point in One Drive,
- 5.5.2 Sharing power point with others (Working together in a team).

## **5.6 Working with other applications (Word, Excel)**

- 5.6.1 Working with Word document,
- 5.6.2 Working with Excel document.

## **5.7 Protect PowerPoint Presentation**

- 5.7.1 Set password (to open the document and to modify the document),
- 5.7.2 Restrict access,
- 5.7.3 Restrict editing (Locking power point for editing).

## **Chapter Six: Office Utilities and Automation Tool [5 Hours]**

### **Learning Objectives**

- *To work in a team using collaboration tools like Outlook (Recent version),*
- *To familiarize with and use virtual meeting management tools such as Microsoft Teams and Zoom for hosting and joining meetings and webinars,*
- *To learn about project management tools such as Trello and to use it for the project management.*

### **6.1 Collaborative software (Email and Collaboration Tools)**

- 6.1.1 Introduction to Collaborative Software and their uses in an organization,
- 6.1.2 Outlook Setup (Adding one or more Email Accounts, Email management),
- 6.1.3 Appointment and Meeting setup in Outlook,
- 6.1.4 Calendar and Contact Management in Outlook.

### **6.2 Virtual Meeting Management (Such as; Microsoft Teams, Zoom, Webinar)**

- 6.2.1 Virtual meeting management tools,
- 6.2.2 Introduction to Webinar and tools used for the webinar,
- 6.2.3 Introduction to Microsoft Teams, Schedule meetings, invite participants, share meeting link, host meeting and join meeting in Microsoft Teams,
- 6.2.4 Introduction to Zoom, schedule meetings, sharing meeting link, host meeting and join meeting in zoom.

### **6.3 Project Management Tools (Basic use of Trello Software, Gantt Chart)**

- 6.3.1 Introduction to project management tools (Such as Trello Software (<https://trello.com/>), Gantt Chart),
- 6.3.2 Basic features of Project Management Tools,
- 6.3.3 Working with project management tool for teamwork
  - 6.3.3.1 Sign up,
  - 6.3.3.2 Create a board,
  - 6.3.3.3 Create a team,
  - 6.3.3.4 Create lists (To do, Doing, Done),
  - 6.3.3.5 Create cards,
  - 6.3.3.6 Assigning Cards and Due Dates,
  - 6.3.3.7 Monitoring activities and perform project management activities,
  - 6.3.3.8 Preparing Gantt Chart using Team Gantt tool.

## **Chapter Seven: Computerized Accounting Concepts (including Accounting Software), Enterprise Resource Planning (ERP) [10 Hours]**

### **Learning Objectives**



- *To familiarize with desktop and web-based accounting software,*
- *To work with computer-based accounting software,*
- *To understand international standard language for sharing business data on the internet,*
- *To familiarize with ERP and prepare for auditing in ERP environment,*
- *To learn about the importance of MIS and system generated reports in an organization,*
- *To know about system conversion from one to another and data migration strategies during system conversions,*
- *To understand access log and access control in a software.*

## **7.1 Basic of Accounting Information System (AIS)**

- 7.1.1 Understanding AIS and its features,
- 7.1.2 Components of an AIS,
- 7.1.3 Business functions of an AIS.

## **7.2 Demo of Accounting Software**

- 7.2.1 Installation of Accounting Software,
- 7.2.2 Configuring Accounting software for a company,
- 7.2.3 Basic operations.

## **7.3 Window and Desktop Based Accounting Software**

- 7.3.1 Architecture of Desktop-based software/Desktop application,
- 7.3.2 Overview of Desktop-based Accounting Software,
- 7.3.3 Working Mechanism of Desktop-based Accounting Software,
- 7.3.4 Advantages and disadvantages of Desktop-based Accounting Software.

## **7.4 Web- based Accounting Software**

- 7.4.1 Basic concept on Server and Client,
- 7.4.2 Introduction to Web-based Accounting Software,
- 7.4.3 Working Mechanism of web-based Accounting Software,
- 7.4.4 Advantages and disadvantages of web-based Accounting Software,
- 7.4.5 Difference between web-based accounting software and desktop-based accounting software.

## **7.5 XBRL: Financial Reporting on the Internet**

- 7.5.1 Introduction of XML
- 7.5.2 Understanding eXtensible Business Reporting Language (XBRL),
- 7.5.3 Working Principles of XBRL
- 7.5.4 Features of XBRL and its advantages,
- 7.5.5 XBRL Tools.

## **7.6 ERP Overview, Implementation and Control**

- 7.6.1 Introduction to ERP,
- 7.6.2 Basic Modules/Components in ERP,
- 7.6.3 Advantages of using ERP,
- 7.6.4 Implementing ERP system,
- 7.6.5 Controlling functions of ERP in an organization.

### **7.7 Auditing in ERP Environment**

- 7.7.1 Traditional environment and ERP environment,
- 7.7.2 Types of ERP audits (Process Audit, Compliance Audit, System Audit, Security Audit, Waste Audit),
- 7.7.3 Understanding risks in ERP environment,
- 7.7.4 Challenges of Auditing in ERP environment.

### **7.8 MIS, System Generated Report**

- 7.8.1 Introduction to Information System (IS) and Management Information System (MIS),
- 7.8.2 Types of MIS reports,
- 7.8.3 Benefits from MIS reports to an organization.

### **7.9 New System and data migration**

- 7.9.1 Need of System Conversion (Existing to new System),
- 7.9.2 Approaches to System Conversion (Direct Conversion, Parallel Conversion, Pilot Conversion and Phase-In Conversion),
- 7.9.3 Data Migration: Importance, Strategy and Best Practices.

### **7.10 Access Logs and controls**

- 7.10.1 Analyzing access logs in software,
- 7.10.2 Introduction to Access Controls and their applications in software.

## **Chapter Eight: Emerging Concepts [7 Hours]**

### **Learning Objectives**

- *To understand the concept of virtualization and cloud computing,*
- *To familiarize with machine learning and applications of AI in business,*
- *To gain knowledge of ecommerce and digital payment systems,*
- *To familiarize with social media marketing techniques,*
- *To understand the use of digital signature,*
- *To comprehend cyber threats as well as cybersecurity tools and techniques,*
- *To impart knowledge in blockchain technology and get familiarity with crypto currency.*

### **8.1 Virtualization and Cloud Computing**

- 8.1.1 Overview of Virtualization,
- 8.1.2 Pros and Cons of Virtualization,
- 8.1.3 Introduction to cloud computing,
- 8.1.4 Cloud Deployment Model (Public, Private, Hybrid and Community Model),
- 8.1.5 Cloud Service Model (IaaS, PaaS, SaaS),
- 8.1.6 Cloud computing vs traditional computing.

### **8.2 Machine Learning, Artificial Intelligence**

- 8.2.1 Overview of Machine Learning,
- 8.2.2 Working Mechanism of Machine Learning
- 8.2.3 Applications of Machine Learning,

- 8.2.4 Types of Machine Learning (Supervised and Unsupervised Learning),
- 8.2.5 Introduction to AI,
- 8.2.6 Contributing factor to AI
- 8.2.7 Human intelligence vs Artificial intelligence,
- 8.2.8 Some real-world applications of AI.

### **8.3 E-Commerce and Digital Payment Platforms**

- 8.3.1 Understanding e-commerce and e-business,
- 8.3.2 E-commerce business models
  - 8.3.2.1 Business to Consumer (B2C) E-Commerce
  - 8.3.2.1 Business to Business (B2B) E-Commerce
  - 8.3.2.1 Business to Government (B2G) E-Commerce
  - 8.3.2.1 Business to Business to Consumer (B2B2C) E-Commerce
  - 8.3.2.1 Consumer to Consumer (C2C) E-Commerce
  - 8.3.2.1 Consumer to Business (C2B) E-Commerce
- 8.3.3 Modes of e-Payment (Credit Card, Debit Card, Digital currencies, E-Wallet, Internet banking, Amazon Pay, Google Pay, Apple pay, EFT).

### **8.4 Social Media Marketing**

- 8.4.1 Overview of social media,
- 8.4.2 Introduction to social media marketing,
- 8.4.3 Social Media marketing platforms,
- 8.4.4 Advantages and disadvantages of social media marketing.

### **8.5 Digital Signature**

- 8.5.1 Basic concept on Cryptography,
- 8.5.2 Encryption and Decryption Technology,
- 8.5.3 Public (Asymmetric) and private (symmetric) key cryptography,
- 8.5.4 Digital signature and its features,
- 8.5.5 Features of digital signature.

### **8.6 Cyber Security**

- 8.6.1 Introduction to cyber security,
- 8.6.2 Basic components of cyber security: CIA,
- 8.6.3 Cyber-attacks and threats,
- 8.6.4 Goals of cyber security,
- 8.6.5 Security tools and mechanisms used in cyber security,
- 8.6.6 Cyber security in context of Nepal.

### **8.7 Blockchain and Crypto Currency**

- 8.7.1 Introduction to block chain technology,
- 8.7.2 Need of block chain technology / Features of block chain technology,
- 8.7.3 Applications of blockchain technology,
- 8.7.4 Introduction to cryptocurrency,
- 8.7.5 Examples of Cryptocurrency,
- 8.7.6 Working Mechanism of cryptocurrency

8.7.7 Issues in cryptocurrency.

## **Chapter Nine: E-Filing and Verification of Electronic Records [3 Hours]**

### **Learning Objectives:**

- *To familiarize with and work on the Inland Revenue Department's Taxpayer portal,*
- *To gain practical knowledge on online filing of TDS, VAT returns, and Income Tax Returns via Taxpayer portal,*
- *To gain knowledge in the legal provisions of Electronic Billing Software Registration with the Inland Revenue Department and the issuance of electronic VAT invoices.*

### **9.1 Preview of General Taxpayer Login**

### **9.2 E-TDS Filing and TDS Certificate**

### **9.3 VAT Billing Software and Electronic VAT Invoice**

### **9.4 Online VAT Return Filing and Verification**

### **9.5 Online Income Tax Return Filing**