

Computer Syllabus – Class VI

Duration: 12 Months

11 Theory + 19 Practical

Course content and structure

Unit 1: Computer Basics-I

- Introduction to computer
- Starting and Shutting down the computer
- Identify the Parts of computer and their functionality
- Identify the Keys of Keyboard
- Identify the Mouse and its Buttons

04 Theory + 01 Practical

- Precautions to be taken while opening and closing computers
- Do's and Don'ts of Computer Lab
- Feature of the Computers
- Strengths and limitation of the computers
- Understanding the Generation of the computers

Unit 2: Desktop and Computer peripherals

- About Desktop/Screen,
- Identify icons of the desktop
- Start button and task bar
- My Computer, Recycle bin,
- Input and Output devices
- Keyboard Mouse, Monitor, printer, speaker, etc.
- Memory devices

02 Theory + 02 Practical

- Primary and Secondary Memory
- CPU
- Concept of Hardware and Software
- Basics of Types of Software
- Concept of File/Folder
- Creating/moving/deleting files and folders

Unit 3: Using Paint Brush

- Introduction
- Introduction about available paint-brush applications in computers
- Starting Paint brush application

01 Theory + 03 Practical

- Pencil, eraser, Fill with Color, Pick color, brush, air Brush,
- Selection, rectangle selection, freeform selection, View menu, Zoom-in, Zoom-out, Full Screen

Unit 4: Word processor

- Introduction to Word processor
- Tools of (Brief about) different word processors like MS Word, WordPad, etc
- Locating and Brief about the word processor available/installed in the computer like Libre Office Writer,

02 Theory + 04 Practical

- Creating a file
- Saving, opening, editing, printing a file
- Selection of text in a document
- Move and Copy text in a document
- Find and Replace text

- Formatting fonts of a document
- Inserting symbols in a document
- Checking Spelling
- Automatic Spell Checking
- Checking spelling manually
- Insertion of picture into a document
- Formatting text-Font Size, color,sub-
super script,bold italic, underline,

- Numbering and bullets, Alignment,
Change case
- ,Special characters,
- Hindi typing,
- Inserting different things like – Word
Art, Page break, images, Clip art, date
and time, text box, page numbers etc.

Unit 5: Internet

01 Theory + 03 Practical

- What is internet
- Need of Internet, requirements of internet connection,
- Search engines and opening and closing,

Unit 6: Working with Applications Software

01 Theory + 06 Practical

- Introduction to Spreadsheets such as Excel, Libre Office Calc
- Preparation of simple worksheet with basic formula +, -, /,
- Introduction to presentation tools (MS Powerpoint, LibreOffice Impress)
- Creating Simple Presentation

Computer Syllabus – Class VII

Duration : 12 Months

22 Theory + 39 Practical

1. Prerequisites:

No compulsory requirement of computer background.

2. Learning Outcome:

- a. Familiarity with Basics of Computers
- b. Identify the different parts of computers,
- c. Identify different components/hardware installed in computer Lab
- d. Create and edit and print rich text documents, spreadsheets and presentation.
- e. Perform basic data manipulation using spreadsheet
- f. Use Indian languages in Documents

3. Course content and structure

Unit 1: Fundamental of Computers-I

03 Theory + 01 Practical

- Review of Brief History of Computer
- Basic components of Computers
- Different I/O Devices
- Software definitions AND its types
- Computer Memory and its different types
- Storage units of computers
- Different types of computers
- Concept of ASCII, BCD, EBCD etc...
- Classification of Computers- Micro, Mini, Mainframe, Analog, Digital, etc

Unit 2: Hands on Computers

02 Theory + 02 Practical

- Using paints and other utilities of computers like calculators, notepad/gedit, taskbar utilities, starting and shuttingdown,etc

Unit 3: Operating System

02 Theory + 02 Practical

- Introduction to Operating System: What/Why/Use etc..
- Different Operating System – Ubuntu (Open Source),
- Microsoft Windows, Microsoft DOS etc.
- Commands of MS DOS/Ubuntu

Unit 4: More on Operating System

02 Theory + 04 Practical

- MS DOS commands/
- General Linux commands
- How to install software in MS Windows OS/Linux OS/Unix OS/ Ubuntu

- Installing Drivers of Printer/Scanner/networking components

Unit 4: Word Processor

- Working with Table
- Formatting Paragraphs (Tab, Indentation, line spacing, word wrap etc.)

01 Theory + 05 Practical

- Bullet and numbering,
- Hyperlink,
- Page setup and Print Setup

Unit 5 : Spreadsheet

- Working with spreadsheet
- Formatting spreadsheets : Row/column-height/width/deleting/hide/unhide
- Freeze panes

02 Theory + 05 Practical

- Using basic formulas and functions – sum/max/min/count/if/text/trim/upper/lower/etc.
- Fill
- Page setup and print setup

Unit 6 : Multimedia

- Introduction to multimedia
- Hardware and Software required
- Locating software installed for multimedia, sound recorder, etc.
- Locating media player

02 Theory + 04 Practical

- Playing Video/audio/Sound recorder
- Video making/editing-inserting images/setting timeline/publishing

Unit 7 : Internet

- About Internet
- Web Browsers
- Websites
- Search Engine
- Wikipedia

02 Theory + 04 Practical

- Browsing website of NCERT/Jharkhand Govt official websites, etc.
- E-books

Unit 7 : Making Presentation

- Introduction

02 Theory + 04 Practical

- Introduction about different applications/packages/software

- for making presentation such as MS Power point, Libraoffice- Impress,
- LibraOffice- Impress a presentation programme-Detail
 - Utility of presentation
 - Creating and saving presentation
 - Adding text/picture/chart in presentation slide

- Different views in Impress
- Setting Slide background/Transition/Design template
- Printing and Page setup
- Diferent slide show option
- Set up slide show

Unit 8 : Making Powerful presentation

02 Theory + 04 Practical

- Presentation Skill
- Formating Presentation
- Slide Transition
- Animation and Effects
- Viewing presentation in different ways

- Showing presentation using projector
- Reviewing presentation and printing presentation

Unit 10 : Use of Internet : E-Mail

02 Theory + 04 Practical

- Creating Email IDs
- Using Email-
Inbox/outbox/trash/spam/subject/
to/cc/bcc

- Social networking sites-
advantages/ disadvantages
- Network of networks

Computer Syllabus – Class VIII

Duration: 12 Months

24 Theory + 32 Practical

1. Course content and structure

Unit 1: Computer Security

03 Theory + 01 Practical

- Threats to Computers
- Viruses and different types of Viruses
- Antivirus Software and different antivirus
- Firewall and its uses

Unit 2: More on Computer Security

03 Theory + 01 Practical

- Cyber Crime and Cyber Ethics
- Hackers and Crackers
- Cyber Law and importance

Unit 3 : HTML

01 Theory + 03 Practical

- Introduction to HTML
- Creating HTML Pages
- About tag
- Heading tag (H1 to H6)
- `
``<comment>`/etc.
- Background color, images etc, font-size,color,type, etc.
- Unicode

Unit 4 : More onHTML

01 Theory + 03 Practical

- Text and Paragraph alignment
- List Tag
- Ordered and unordered list
- Creating and working with Table
- Anchor Tag
- Hyperlinks

Unit 5 : Programming

03 Theory + 02 Practical

- Computer Languages-Machin Languages,Assembly Languages, High Level Languages, 4th Generartion Languages,

- Introduction about Programming
- Algorithm
- Flow charts
- Question based on sequence, selection and iteration

Unit 6 : Number System

- Introduction about number System
- Different number system – Binary/Octal/Decimal/Hexadecimal

04 Theory + 00 Practical

- Conversion from one number to other number system

Unit 7 : Audio and Video conversion

- What is it?, Use of it,
- Hardware and Software required for Audio and Video conferencing.
- Factors affecting video quality

01 Theory + 02 Practical

- Usefulness of video conferencing
- Some application for sharing desktop—team viewer, ammyy etc.

Unit 8 : Word Processor

- Review topics covered in Class VI/VII under Word processor
- Creating a word documents: Reports
- Advance Word processor features such AS Mail Merge,

02 Theory + 05 Practical

Spell Check , Formatting, Creating large documents with different formatting page numbering, hyperlinks, Tables, Track Changes etc

Unit 9: Spreadsheet

- Review topics covered in Class VI/VII under Spreadsheet
- Creating a workbook: Mark sheet
- Cell Referencing – Relative, Absolute and Mixed Cell Reference

2 Theory + 05 Practical

- Advance formula such as vlookup, hlookup, financial, date and time formula,
- conditional formatting,
- Pivot table (Summarising data),
- Sorting,
- Filtering,

- different print layouts etc

Unit 10: Presentation

2 Theory + 05 Practical

- Review topics covered in Class VI/VII under presentation
- Creating powerful presentation : ADARSH Vidyalay
- Animation, embedding Video / Audio.

Unit 10: Internet and Email

2 Theory + 05 Practical

- Review topics covered in Class VI/VII under Internet
- E-mail
- Creating group of contacts (of email).
- Attachments, sending big files,
- Concept of cc, bcc, forward, signature, etc.
- File Transfer applications such as FTP,
- Using command line interface for sending files
- Sending & Downloading attachment files
- Removing unwanted mail messages

Computer Syllabus – Class IX.

Part I : Preparatory Course for Computer Education at Secondary Level

Duration : 4 Months

13 Theory + 23 Practical

2. Prerequisites:

No compulsory requirement of computer background.

3. Learning Outcome:

- a. Familiarity with Basics of Computers
- b. Identify the different parts of computers,
- c. Identify different components/hardware installed in computer Lab
- d. Ability to navigate the file System
- e. Create and edit and print rich text documents, spreadsheets and presentation.
- f. Perform basic data manipulation using spreadsheet
- g. Use Indian languages in Documents
- h. Send and receive emails, follow email etiquette, and communication over the internet,
- i. Safe and correct uses of websites, social networks, chat sites, and emails

4. Course content and structure

Unit 1: Computer Basics-I

- Introduction to Computer
- Starting and Shutting down the computer
- Identify the Parts of Computer and their functionality
- Identify the Keys of Keyboard
- Identify the Mouse and its Buttons
- Precautions to be taken while opening and closing computers
- Do's and Don'ts of Computer Lab
- Feature of the Computers
- Strengths and limitation of the computers
- Different types of computers
- Concept of ASCII, BCD, EBCDetc...

02 Theory + 02 Practical

- Classification of Computers- Micro, Mini, Mainframe, Analog, Digital, etc
- About Desktop/Screen,
- Identify icons of the desktop, Star button and task bar, My Computer, Recycle bin,
- Components of a computer system – CPU, memory, storage devices and I/O devices
- Input and Output devices
Keyboard Mouse, Monitor, printer, speaker, etc.
- Memory devices
Primary and Secondary Memory

Unit 2: Using Paint Brush

- Introduction
- Introduction about available paint-brush applications in computers
- Starting Paint brush application

Unit 3: Using GIMP Image

- To use Paths
- Using & manipulating Layers.

Unit 4: Introduction to Computer Software

- Concept of Hardware and Software
- Introduction to OS
- Different OS such as Ubuntu, MS Windows, MS DOS
- Commands of MS DOS, Ubuntu

Unit 5: Introduction to Word processor

- Introduction to Word processor
- Tools of (Brief about) different word processors like MS Word, WordPad, etc
- Locating and Brief about the word processor available/installed in the computer like LibreOffice Writer,
- Creating a file
- Saving, opening, editing, printing a file
- Selection of text in a document
- Move and Copy text in a document
- Find and Replace text
- Formatting fonts of a document
- Inserting symbols in a document

Unit 6: Internet

- What is internet

01 Theory + 01 Practical

- Pencil, eraser, Fill with Color, Pick color, brush, air Brush,
- Selection, rectangle selection, freeform selection, View menu, Zoom-in, Zoom-out, Full Screen

01 Theory + 02 Practical

- Retouching & De-touching with GIMP to enhance photo quality
- Printing pictures in GIMP.

01 Theory + 02 Practical

- Basics of Types of Software
- Concept of File/Folder
- Creating/moving/deleting files and folders

01 Theory + 03 Practical

- Checking Spelling
- Automatic Spell Checking
- Checking spelling manually
- Insertion of picture into a document
- Formatting text-Font Size, color, sub-super script, bolditalic, underline, Numbering and bullets, Alignment, Change case
- Special characters,
- Hindi typing/Hindi Fonts,
- Inserting different things like – Word Art, Page break, images, Clip art, date and time, text box, page numbers etc

01 Theory + 02 Practical

- Need of Internet, requirements for internet connection,

- Internet Service Providers (ISPs)
- Hardware and software requirement for internet service
- Search engines and opening and closing, Browsing Website of NCERT,

- Jharkhand government, etc.
- Creation of Email and using It.
- Social networking sites, its advantages and disadvantages,
- Networking of Networks

Unit 7: Introduction to Spreadsheets packages

- What is spreadsheet
- Use of Spreadsheets
- Different spreadsheet packages
- Working with spreadsheet, Workbook, sheets, etc..
- Formatting Spreadsheet : Row/column - height width, Deleting/hiding

01 Theory + 02 Practical

- row/column,
- Different types of View
- Freeze Panes
- Using formula sum, average, min, max, count,
- Auto fill, fill handle, etc.
- Printing Sheets

Unit 8: Introduction to Multimedia

- Introduction to multimedia, uses of multimedia, Hardware and software required,
- Introduction about different media player
- Locating media player, sound recorder ,

01 Theory + 02 Practical

- etc in the system
- Media Player
- Playing Video/Audio
- How to use Sound recorder
- Video making/Editing – inserting images ,setting timeline, publishing

Unit 9: Introduction to Presentation Package

- Introduction about different applications available for making presentation such as MS power point, LibreOffice Impress
- Creating & Saving a Presentation
- Adding Text and Picture in slide

01 Theory + 02 Practical

- Different views in Impress
- Setting up Slide background and applying Design Template
- Different Slide show options
- Setup Slide Show and animation

Unit 10: Introduction to Computer Security

- Threats to Computers
- Viruses and its types
- Antivirus software and its examples
- Firewall and its uses.

01 Theory + 01 Practical

- Safely browsing the web and using social networks: identity protection, proper usage of passwords, privacy, confidentiality of information, cyber

- stalking, reporting cybercrimes
- Safely accessing websites: viruses and

- malware
- Antivirus packages

Unit 11: HTML

01 Theory + 02 Practical

- Introduction to HTML,
- Creating HTML pages
- About tag,

- Heading (H1 to H6)
- `
<hr><comment>`, etc.
- Background color font, tag

Unit 12: Programming

02 Theory + 02 Practical

- Computer Languages – Machine language, Assembly language, High Level languages...4th gen language
- Introduction about Programming

- Algorithm
- Flow charts
- Question based on sequence, selection and iteration

Unit 13: Some ICT tools

04 Theory + 08 Practical

- **KGeography**
 - To be able to read maps to identify different Districts of States.
 - Different States of India & other Countries – their Capitals & flags
- **Celestia**
 - To enhance the knowledge about Solar System.
- **Stellarium**
 - Planetarium program
- **Marble**
 - A geographical atlas and a virtual globe used to look up places.
 - To easily create maps.
 - Measure distances and to retrieve detail information about locations on our home planet.
- **GeoGebra**
 - A combination of Geometry and Algebra to construct different geometric shapes.

Computer Syllabus – Class IX.

Part II : Computer Application (CBSE Course Code: 165)

Duration: 8 Months

13 Theory + 25 Practical

5. Prerequisites:

No compulsory requirement of computer background. However Preparatory Course for Computer Education is suggested.

6. Learning Outcome:

- a. Familiarity with Basics of Computers
- b. Ability to navigate the file System
- c. Create and edit rich text documents, spreadsheets and presentation.
- d. Perform basic data manipulation using spreadsheet
- e. Use Indian languages in Documents
- f. Send and receive emails, follow email etiquette, and communication over the internet,
- g. Create and upload videos
- h. Safe and correct uses of websites, social networks, chat sites, and emails

7. Course content and structure:

Unit 1: Basics of Information Technology

03 Theory + 02 Practical

- Familiarity with the basics of computers: design of computers, and overview of communication technologies
- Computer Systems: characteristics of a computer, components of a computer system – CPU, memory, storage devices and I/O devices
- Memory: Primary (RAM and ROM) and secondary memory
- Storage devices: hard disk, CD ROM, DVD, pen/flash drive, memory stick
- I/O devices: keyboard, mouse, monitor, printer, scanner, web camera
- Types of software: system software (operating systems), application software, mobile applications
- Operating systems: kernel, device drivers, and file systems (very basic idea)
- Computer networking: wired/wireless communication, common protocols: Wi-Fi, Bluetooth, cloud computers (private/public)
- Multimedia: images, audio, video, animation, Chat sites, and social networks.

Unit 2: Cyber safety

03 Theory + 00 Practical

- Safely browsing the web and using social networks: identity protection, proper usage of passwords, privacy, confidentiality of information, cyber

- stalking, reporting cybercrimes
- Safely accessing websites: viruses and

malware

Unit 3: Office Tools

- **Introduction to a word processor:** create and save a document.
- Edit and format text: text style (B, I, U), font type, font size, text color, alignment of text. Format paragraphs with line and/or paragraph spacing. Add headers and footers, numbering pages, grammar and spell check utilities, subscript and superscript, insert symbols, use print preview, and print a document.
- Insert pictures, change the page setting, add bullets and numbering, borders and shading, and insert tables – insert/delete rows and columns, merge and split cells.
- Use auto-format, track changes, review comments, use of drawing tools, shapes and mathematical symbols.
- **Presentation tool:** understand the concept of slide shows, basic elements of a slide, different types of slide layouts create and save a presentation, and learn about the different views of a slide set – normal view, slide sorter view and hand-outs.

04 Theory + 06 Practical

- Edit and format a slide: add titles, subtitles, text, background, and watermark, headers and footers, and slide numbers.
- Insert pictures from files, create animations, add sound effects, and rehearse timings.
- **Spreadsheets:** concept of a worksheet and a workbook, create and save a worksheet.
- Working with a spreadsheet: enter numbers, text, date/time, series using auto fill; edit and format a worksheet including changing the colour, size, font, alignment of text; insert and delete cells, rows and columns. Enter a formula using the operators (+, -, *, /), refer to cells, and print a worksheet.
- Use simple statistical functions: SUM (), AVERAGE (), MAX (), MIN (), IF () (without compound statements); embed charts of various types: line, pie, scatter, bar and area in a worksheet

Unit 4: Scratch or Python

Alternative 1: Python Educational
programming language - Scratch

- Introduction to Scratch.
- Drag and drop commands, creating simple scripts, repeating blocks of commands.
- Discuss x-y plane, create scripts to move the cat (Scratch mascot).
- Create a script to draw diagrams using

03 Theory + 03 Practical

the pen feature.

Alternative 2: Python - (provided as an option to children with special needs)

- Introduction to Python
- A simple "Hello World" program
- Running a Python program
- The notion of data-types and variables: integer, float, string
- Arithmetic operations: +, -, *, /

8. Lab Exercises

01 Theory + 14

Practical Following Lab exercise is required to be completed essentially by each student. For this students may be allowed to do Lab excercises after school teaching hours also

- Basic I/O devices: use the mouse and keyboard, draw a figure.
- Working with the operating system: Navigation of the file system using a mouse and keyboard, and then doing the same with shell commands.
- Word processing: create a text document; create a letter, report, and greeting card.
- Create a text document with figures in it. It should describe a concept taught in another course.
- Discuss the following in a text document about the basic organisation of a computer: CPU, memory, input/output devices, hard disk.
- Create a text document in an Indian language other than English.
- Create a presentation.
- Create a presentation with animation.
- Create and edit existing images, and then include them in a presentation.
- Animate pictures and text with sound effects in a presentation
- Create a simple spreadsheet and perform the following operations: min, max, sum, average etc..
- Create different types of charts using a spreadsheet: line, bar, and pie.
- Send an email to your friends. Attach some documents that you have prepared earlier. Put some friend in the CC and BCC list. Interact with friends to find out who was in the BCC list.
- Do an online chat with multiple friends. Transmit documents using the chat platform.
- Create a video and upload it on YouTube.
- Write basic Scratch/Python programs

Computer Syllabus – Class X

Computer Applications (CBSE-Course Code:165)

Duration: 12 Months

14 Theory + 32 Practical

1. Prerequisites:

Preparatory Course for Computer Education.

2. Learning Outcome:

1. Ability to create a simple website
2. Ability to embed images, audio and video in an HTML page
3. Ability to use style sheets to beautify the web pages.
4. Ability to write iterative programs with Scratch/Python.
5. Ability to Interface a web site with a web server and record the details of a user's request.
6. Ability to follow basic cyber ethics
7. Ability to familiarize with network concepts

3. Course content and structure

Unit 1: Networking

- Internet: World Wide Web, web servers, web clients, web sites, web pages, web browsers, blogs, news groups, HTML, web address, e-mail address, downloading and uploading files from a remote site. Internet protocols: TCP/IP, SMTP, POP3, HTTP, HTTPS.
- Remote login and file transfer protocols: SSH, SFTP, FTP, SCP, TELNET, SMTP, TCP/IP.

03 Theory + 06 Practical

- Services available on the internet: information retrieval, locating sites using search engines and finding people on the net;
- Web services: chat, email, video conferencing, e-Learning, e-Banking, eShopping, e-Reservation, e-Governance, e-Groups, social networking.
- Mobile technologies: SMS, MMS, 3G, 4G.

Unit 2: Using HTML

- Introduction to web page designing using HTML: create and save an HTML document, access a web page using a web browser.
- HTML tags: html, head, title, body, (attributes: text, background,

03 Theory + 06 Practical

bgcolor, link, vlink, alink), br (break), hr(horizontal rule), inserting comments, h1..h6 (heading), p (paragraph), b (bold), i (italics), u (underline), ul (unordered list), ol (ordered list), and li (list item).

Description lists: dl, dt and dd.

Attributes of ol (start, type), ul (type).

- Font tags (attributes: face, size, color).
- Insert images: img (attributes: src, width, height, alt), sup (super script), sub (subscript).
- HTML Forms: Textbox, radio buttons, checkbox, password, list, combobox.

- Embed audio and video in a HTML page.
- Create a table using the tags: table, tr, th, td, rowspan, colspan
- Links: significance of linking, anchor element (attributes: href, mailto), targets.
- Cascading style sheets: colour, background-colour, border-style, margin,height, width, outline, font (family, style, size), align, float.

Unit 3: Cyber ethics

03 Theory + 02 Practical

- Netiquettes.
- Software licenses and the open source software movement.
- Intellectual property rights, plagiarism and digital property rights

- Freedom of information and the digital divide
- E-commerce: Privacy, fraud, secure data transmission.

Unit 4: Scratch or Python

03 Theory + 08 Practical

Alternative 1: Scratch Revision of the basics of Scratch

Alternative 2: Python (only for children with special needs)

- Sprite, tempo, variables, and events
- Coordinates and conditionals
- Drawing with iteration
- Update variables repeatedly, iterative development, ask and answer blocks
- Create games, animated images, stories and songs

- Revision of Python basics
- Conditionals: if, if-else statements
- Loops: for, while (e.g., sum of first 10 natural numbers)
- Practice simple programs

4. Lab Exercises

02 Theory + 10 Practical

Following Lab exercise is required to be completed essentially by each student. For this students may be allowed to do Lab exercises after school teaching hours also

- Create static web pages
- Use style sheets to enforce a format in an HTML page (CSS).

- Embed pictures, audio and videos in an HTML page.
- Add tables and frames in an HTML page.
- Decorate web pages using graphical elements.
- Create a website using several web pages. Students may use any open source or proprietary tool.
- Work with HTML forms: text box, radio buttons, checkbox, password, list, combo box.
- Write a blog using HTML pages discussing viruses, malware, spam and antiviruses
- Create a web page discussing plagiarism.
- List some reported cases of plagiarism and the consequent punishment meted out.
- Explain the nature of the punishment in different countries as per their IP laws.
- Create simple stories with Scratch (involving at least two objects/characters) and iteration
OR write programs for finding the sum/product of first n natural numbers using Python

Computer Syllabus – Class XI.

Part I: Preparatory Course for Computer Education at Higher Secondary Level

Duration : 4 Months

12 Theory + 21 Practical

1. Prerequisites:

No compulsory requirement of computer background.

2. Learning Outcome:

- a. Familiarity with Basics of Computers
- b. Identify the different parts of computers,
- c. Identify different components/hardware installed in computer Lab
- d. Ability to navigate the file System
- e. Create and edit and print rich text documents, spreadsheets and presentation.
- f. Perform basic data manipulation using spreadsheet
- g. Use Indian languages in Documents
- h. Send and receive emails, follow email etiquette, and communication over the internet,
- i. Safe and correct uses of websites, social networks, chat sites, and emails

3. Course content and structure

Unit 1: Computer Basics-I

02 Theory + 02 Practical

- Introduction to Computer
- Starting and Shutting down the computer
- Identify the Parts of Computer and their functionality
- Identify the Keys of Keyboard
- Identify the Mouse and its Buttons
- Precautions to be taken while opening and closing computers
- Do's and Don'ts of Computer Lab
- Feature of the Computers
- Strengths and limitation of the computers
- Different types of computers
- Concept of ASCII, BCD, EBCDetc...
- Classification of Computers- Micro, Mini, Mainframe, Analog, Digital, etc
- About Desktop/Screen,
- Identify icons of the desktop, Start button and task bar, My Computer, Recycle bin,
- Components of a computer system – CPU, memory, storage devices and I/O devices
- Input and Output devices
Keyboard Mouse, Monitor, printer, speaker, etc.
- Memory devices
Primary and Secondary Memory

Unit 2: Using Paint Brush

01 Theory + 01 Practical

- Introduction
- Introduction about available paint-brush applications in computers
- Starting Paint brush application

Unit 3: Introduction to Computer Software

- Concept of Hardware and Software
- Introduction to OS
- Different OS such as Ubuntu, MS Windows, MS DOS/Terminal
- Commands of MS DOS, Ubuntu

Unit 4: Introduction to Word processor

- Introduction to Word processor
- Tools of (Brief about) different word processors like MS Word, WordPad, etc
- Locating and Brief about the word processor available/installed in the computer like LibreOffice Writer,
- Creating a file
- Saving, opening, editing, printing a file
- Selection of text in a document
- Move and Copy text in a document
- Find and Replace text
- Formatting fonts of a document
- Inserting symbols in a document

Unit 5: Internet

- What is internet
- Need of Internet, requirements for internet connection,
- Internet Service Providers (ISPs)
- Hardware and software requirement for internet service
- Search engines and opening and closing,

- Pencil, eraser, Fill with Color, Pick color, brush, air Brush,
- Selection, rectangle selection, freeform selection, View menu, Zoom-in, Zoom-out, Full Screen

01 Theory + 02 Practical

- Basics of Types of Software
- Concept of File/Folder
- Creating/moving/deleting files and folders

01 Theory + 03 Practical

- Checking Spelling
- Automatic Spell Checking
- Checking spelling manually
- Insertion of picture into a document
- Formatting text-Font Size, color, sub-super script, bold italic, underline, Numbering and bullets, Alignment, Change case
- Special characters,
- Hindi typing/Hindi Fonts,
- Inserting different things like – Word Art, Page break, images, Clip art, date and time, text box, page numbers etc

01 Theory + 02 Practical

- Browsing Website of NCERT, Jharkhand government, etc.
- Creation of Email and using It.
- Social networking sites, its advantages and disadvantages,
- Networking of Networks

Unit 5: Introduction to Spreadsheets packages

- What is spreadsheet
- Use of Spreadsheets
- Different spreadsheet packages
- Working with spreadsheet, Workbook, sheets, etc..
- Formatting Spreadsheet : Row/column - height width, Deleting/hiding row/column,

Unit 6: Introduction to Multimedia

- Introduction to multimedia, uses of multimedia, Hardware and software required,
- Introduction about different media player
- Locating media player, sound recorder ,

Unit 7: Introduction to Presentation Package

- Introduction about different applications available for making presentation such as MS power point, LibreOffice Impress
- Creating & Saving a Presentation
- Different type of slide templates

Unit 8: Introduction to Computer Security

- Threats to Computers
- Viruses and its types
- Antivirus software and its examples
- Firewall and its uses.
- Safely browsing the web and using social networks: identity protection,

Unit 8: HTML

01 Theory + 02 Practical

- Different types of View
- Freeze Panes
- Using formula and functions sum, average, min, max, count, If – else, Text functions etc
- Auto fill, fill handle, etc.
- Comment add/edit/hide/unhide in cell
- Printing Sheets

01 Theory + 02 Practical

- etc in the system
- Media Player
- Playing Video/Audio
- How to use Sound recorder
- Video making/Editing – inserting images ,setting timeline, publishing

01 Theory + 02 Practical

- Adding Text and Picture in slide
- Different views in Impress
- Setting up Slide background and applying Design Template
- Different Slide show options
- Setup Slide Show and animation

01 Theory + 01 Practical

- proper usage of passwords, privacy, confidentiality of information, cyber stalking, reporting cybercrimes
- Safely accessing websites: viruses and malware
- Antivirus packages

01 Theory + 02 Practical

- (a) Introduction to Web Page Designing using HTML
- (b) Creating and Saving an HTML document
- (c) Accessing an HTML document using a web browser
- (d) Basic structure of an HTML document – tags, attributes, elements (HTML, HEAD, TITLE, BODY)
- (e) Comments in HTML document
- (f) Some HTML elements and their attributes used in designing a web page :-
 - i. <BODY> ... </BODY>
 - ii. ...
 - iii. <CENTER>,
, <HR>
 - iv. H1..H6, <P>, , <I>, <U>
 - v. , ,
- (g) Inserting images in a Web Page - tag & its attributes
- (h) Linking in Web Pages
 - i. Internal & External linking
 - ii. Anchor tag (<a>) and its attributes
- (i) Cascading Style Sheets (CSS)
- (j) Project on HTML scripting
- (k) HTML & Bluefish Editor
 - i. To understand features of Bluefish Editor & its interface.
 - ii. writing & saving a HTML Script
 - iii. Running HTML Script in web browser.
 - iv. Using Cascading Style Sheets (CSS).

Unit 8: Programming

- Computer Languages – Machine language, Assembly language, High Level languages...4th gen language
- Introduction about Programming

02 Theory + 02 Practical

- Algorithm
- Flow charts
- Question based on sequence, selection and iteration

Unit 9: Some ICT tools

- **KGeography**
 - To be able to read maps to identify different Districts of States.
 - Different States of India & other Countries – their Capitals & flags
- **Celestia**
 - To enhance the knowledge about Solar System.
- **Stellarium**
 - Planetarium program
- **Marble**
 - A geographical atlas and a virtual globe used to look up places.
 - To easily create maps.
 - Measure distances and to retrieve detail information about locations on our home planet.
- **GeoGebra**
 - A combination of Geometry and Algebra to construct different geometric shapes
- **Other tools**

Computer Syllabus – Class XI.

Part II: Computer Application

Duration: 8 Months

10 Theory + 30 Practical

Unit 1. Word processor: Advance

- Installation/De-installation of Office Package
- Hyperlink text of a document to a file or web page
- Manipulating Table in a Writer document
 - Inserting Table in a document
 - Entering data into the Table
 - Formatting inserted Table
 - Resizing rows and columns
 - Selecting cells, rows, columns and entire table
 - Insertion and deletion of rows and columns
 - Using built-in Table Format
 - Cell Protection
 - Sorting Tabular data
 - Using formula in a Table
 - Writing Hindi Script in a Table
- Inserting Fontwork and Auto-shapes, Drop Cap
- Page Setup – Margins, Orientation and Paper Size, Tab Set,
- Inserting Header & Footer in a document
- Mail Merge and others tools operation
- Creating and embedding different types of Chart
- Etc...

Unit 2. Database Management Software

Application to be used : MS Access/Base (in case of open office)/MySQL/NoSQL

- Concept of database
- Creating a database (single table)
 - Creating database structure
 - Assigning Primary Key
 - Inserting records into a table
- Editing a database
 - Changing database structure
 - Modify / Delete records
- Creating Query using Design View
- Creating Form
- Preparation of Report using Table / Query
- Relational databases: idea of a database and the need for it, relations, keys, primary key, foreign key;
- use SQL commands to create a table, keys, foreign keys; insert/delete an entry, delete a table.
- SQL commands: select, project, and join; indexes, and a lot of in-class practice.
- Basics of NoSQL databases - Mongo DB.

Unit 3. Typing tutor

- KTouch – a touch typing tutor
 - Starting KTouch and understanding different parts of KTouch window
 - Test your typing skills
 - Creating a text file using gedit/Notepad text editor
 - Using text file as typing content for KTouch

Unit 4. Internet and the ICT Environment

- Introduction to Social Networking.
- Massive Open Online Courses (MOOCs) <http://mooc.org/>(A) Introduction to Social Networking
- Web Chatting/Web Broadcasting.
- Massive Open Online Courses (MOOCs) <http://mooc.org/>
- Internet Security and Working with Antivirus Software
- Appropriate usage of social networks: spread of rumours, and common social networking sites (Twitter, LinkedIn, and Facebook) and specific usage rules

Computer Syllabus – Class XII.

Part II: Computer Application

Duration: 8 Months

25 Theory + 25 Practical

Unit 1. Computer Networks (CN)

(10 Theory + 10 Practical)

- Structure of a network: Types of networks: local area and wide area (web and internet), new technologies such as cloud and IoT, public vs. private cloud, wired and wireless networks; concept of a client and server.
- Network devices such as a NIC, switch, hub, router, and access point.
- Network stack: amplitude and frequency modulation, collision in wireless networks, error checking, and the notion of a MAC address, main idea of routing.
- IP addresses: (v4 and v6), routing table, router, DNS, and web URLs, TCP: basic

- idea of retransmission, and rate modulation when there is congestion (analogy to a road network),
- Protocols: 2G, 3G, 4G, WiFi. What makes a protocol have a higher bandwidth?
- Basic network tools: trace route, ping, ipconfig, nslookup, whois, speed-test.
- Application layer: HTTP (basic idea), working of email, secure communication: encryption and certificates (HTTPS), network applications: remote desktop, remote login, HTTP, FTP, SCP, SSH, POP/IMAP, SMTP, VoIP, NFC.

Unit 2 Society, Law and Ethics

(10 Theory)

- Intellectual property rights, plagiarism, digital rights management, and licensing (Creative Commons, GPL and Apache), open source, open data, privacy.
- Privacy laws, fraud; cyber-crime-phishing, illegal downloads, child pornography, scams; cyber forensics, IT Act, 2000.

- Technology and society: understanding of societal issues and cultural changes induced by technology.
- E-waste management: proper disposal of used electronic gadgets.
- Identity theft, unique ids, and biometrics.
- Gender and disability issues while teaching and using computers.

Unit 3 Working in Spreadsheet Packages: Advance

(5 Theory + 10 Practical)

- Installation/De-installation of Office Package
- Microsoft Excel, Libre Office-Calc, Google Sheets
- Using formula for Sheets references and workbook reference
- Formatting sheets

- Cell Referencing – Relative, Absolute and Mixed Cell Reference
- Working with formula across sheets
- Specifying Header & Footer
- Page setup & printing spreadsheets
- Sorting and Filtering records
- Embedding Charts
- Using Form for data entry

- Protecting spreadsheet/Work book
- Exporting spreadsheet in PDF format
- Conditional Formatting
- Data Sort & Filter
- Inserting Pivot table
- Using advance formula and functions (Text, Logical, Financial etc)
- More on advance options available in Spreadsheet package...etc.

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