CHAITANYA SCIENCE AND ARTS COLLEGE

(AUTONOMOUS)

PAMGARH, JANJGIR-CHAMPA (C.G.)

ACCREDIATED "A" GRADE BY NAAC

DEPARTMENT
OF
COMPUTER SCIENCE & APPLICATION

COURSE CURRICULUM & MARKING SCHEME

DIPLOMA PROGRAMME

DIPLOMA IN COMPUTER APPLICATION

PROGRAM CODE: CCDC01

FIRST & SECOND SEMESTER

Approved By	Board of Studies	Academic Council
Date	30/08/2025	04 SEP 2025

ACADEMIC YEAR 2025-26

SYLLABUS FRAMED ACCORDING TO THE NEP-2020

UNDER THE SCHEME OF CBCS (CHOICE BASED CREDIT SYSTEM)

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DIPLOMA IN COMPUTER APPLICATIONS (DCA)
ONE YEAR (TWO SEMESTER) COURSE

The **Diploma in Computer Applications (DCA)** program is spread over two semesters within one year. Upon successful completion of the course and passing the examinations, candidates will be awarded the Diploma in Computer Applications (DCA).

The academic year is divided into **two semesters: Semester I - 1st half of the year, Semester II 2nd half of the year**. The medium of instruction and examination is Hindi or English.

Eligibility for Admission:

Admissions for the first semester of the **Diploma in Computer Applications (DCA)** program are conducted **annually in the first half of the academic year**. Candidates from any stream **(Arts, Science, or Commerce)** are **eligible to apply,** provided they have **successfully completed the 10+2 (higher secondary) examination** from **a recognized board or equivalent qualification.**

Examination Scheme:

Each theory paper shall be of 100 marks (70 marks for written examination of 3 hrs. duration and 30 marks for internal assessment).

Each practical paper shall be of 100 marks (60 for practical exam and 40 for internal assessment). The basis for internal evaluation in theory shall be home assignment, internal test and regularities in the attendance.

The basis for internal assessment in the laboratory courses shall be timely submission of the lab. records, performance in the lab, internal tests etc.

Each theory paper examination will be of three-hour duration and shall carry 70 marks. Theory paper shall contain three parts.

Part A, will contain 12 questions (student will attempt any 10) of very short questions each carrying 1 mark.

Part B, will contain 4 short descriptive types of questions (1from each unit) each carrying 5 marks, all are compulsory.

Part C, will contain 4 long descriptive types of questions (1from each unit) each carrying 10 marks, all questions are compulsory with internal choice.

Each practical examination (Maximum marks 100) will be of 2-hours duration on one day and carry 60 marks for assigned exercise(s), Practical File and Viva-voce in the examination and 40 marks for the Internal Assessment.

Programme Outcome

This course aims to establish a academic foundation of computer courses such as basics of computer, software, hardware, networking as well as some programming languages like C/C++.

The program has been meticulously crafted to equip students with the necessary knowledge and skills such as Multimedia, operating system, HTML, Web development DTP and internet. Therefore, the curriculum places greater emphasis on programming and software applications. Through this course, students will be able to use productivity software such as MS Office and DTP.

Upon completion of the DCA program, students will possess the following capabilities:

PSO1: Demonstrate the ability to apply theoretical knowledge to various fields.

PSO2: Install, troubleshoot, and configure operating system.

PSO3: Prepare students in various technology disciplines, including computer applications, Web development, operating system, DTP, and programming.

PSO4: Improve logical ability and programming concepts through practical implementation in the programming lab.

PSO5: Understand the basic principle of Computer networking, software, hardware and computer architecture.

Scheme of Examinations & Syllabus
w. e. f. session 2025-26

Semester I

SR. No.	Subject Code	Course Title	Credit	Hours Per Week			Eo SE Duration (Hrs.)	
				L	T	P	Theory	P
1.	DCAT101	Computer Fundamental	4	4			3	
2.	DCAT102	PC Package	4	4			3	
3.	DCAT103	Desktop Publishing	4	4			3	
4.	DCAP104	PC Package Lab – 1	4			4		2
5.	DCAP105	DTP Lab - 2	4			4		2

Semester II

SR. No.	Subject Code	Course Title	Credit	Hours Per Week			EoSE Duration (Hrs.)	
				L	T	P	Thy	P
1.	DCAT201	Internet & Web Technology	4	4			3	
2.	DCAT202	Programming in C	4	4			3	
3.	DCAT203	Operating System	4	4			3	
4.	DCAP204	Programming in C Lab – 1	4			4		2
5.	DCAP205	Web Technology Lab – 2	4			4		2

DCA - I Semester
Computer Fundamental
Subject Code: DCAT101

COURSE OUTCOMES

CO1: Gain a comprehensive understanding of the working principle of computers and their memory systems.
CO2: Acquire knowledge about the functions and uses of input and output devices.
CO3: Differentiate between software types and hardware components and comprehend their interaction.
CO4: Understand various mediums of data transmission and evaluate their respective advantages and disadvantages.
CO5: Comprehend the internet, its applications, and the importance of internet security.

UNIT-I

Introduction to Computers: Characteristics of computers, generation of computers, classification of computers, applications of computers. Input and Output Devices: Keyboard, pointing devices, digital camera, scanners. Output devices- printers, plotters, monitors, projectors Computer System: Central processing unit (CPU).

UNIT-II

Memory- Memory hierarchy, random access memory (RAM), types of RAM, read only memory (ROM), types of ROM. Classification of secondary storage devices- magnetic tape, magnetic disk, optical disk. Number Systems: Number systems, conversion between number bases.

Memory System Design: Main Memory Concepts, Cache Memory Organization, Associative Memory Concepts, Virtual Memory and Paging. Input/output and Interfacing, DMA, I/O processors.

UNIT-III

Computer Software: Software definition, relationship between software and hardware, software categories, system software, application software. Operating System – Introduction of OS, Uses of OS, Functions of OS, booting process, Types of Reboots, Booting from different OS, Types of OS, DOS, Windows.

UNIT-IV

Networks – Introduction; Types of Networks; Topology: -Ring, Bus, Star, Mesh and Tree topologies. Computer Virus: Virus working principals, Types of viruses, Virus detection and Prevention Viruses on network, Antivirus software's.

Reference Books:

1. Rajaraman V. – Fundamental of Computers, Prentice Hall of India Pvt. Ltd., New Delhi.
2. Computer Fundamentals by P.K. Sinha; BPB Publication, New Delhi 8
3. Mano Morris, Computer system architecture, PHI, New Delhi.
4. Mano Morris, M. Digital Design, PHI, New Delhi.
5. Jain R. P., Modern Digital Electronics, Tata Mc Graw Hill, New Delhi.

DCA - I Semester

PC Package

Subject Code: DCAT102

COURSE OUTCOMES

CO1: Learning and Understanding MS Word, MS Power Point, MS Excel. CO2: Understanding of Disk Operating system and its commands.

CO3: Working knowledge of using word formatting, presentation styles and acceptable business style formatting conventions.

CO4: Acquiring basic mechanics and navigation of an Excel spreadsheet including functions, formulas, tables, chart.

CO5: Learning and analyzing presentation themes and styles including animations and transitions.

UNIT-I

Disk Operating System (DOS): Introduction, History & Versions of DOS, DOS System Files. DOS Commands: Internal and External, Executable V/s Non-Executable Files in DOS.

MS Windows: Introduction to MS Windows, Features of Windows, Various versions of Windows & its use, Working with Windows, My Computer & Recycle bin, Desktop, Icons and Windows Explorer, Dialog Boxes & Toolbars; Working with Files & Folders, simple operations like copy, delete, moving of files and folders from one drive to another, control panel, modem, printers, audio, network, fonts, creating users, internet settings, Installing and Uninstalling new Hardware & Software program on your computer.

UNIT-II

MS-Word Creating and Saving documents, Editing and Formatting Text, Page formatting, Finding and replacing text, Spell checking and Grammar checking, Printing document. Clipart, header & footer, Tables and its feature, inserting (Objects, picture, files, chart, shapes etc.), hyperlink, Design and layout, mail merge, Word Art, customizing MS Word.

UNIT-III

MS Excel Spreadsheet terminology, organization of the worksheet area, entering information, editing cells using commands and functions, moving copying, inserting and deleting rows and columns, formatting worksheet, printing worksheet, creating charts, database in a worksheet, creating, sorting, querying and maintaining the database, multiple worksheets and Macros, working with objects.

UNIT-IV

MS Power Point Anatomy of a power Point Presentation, Creating and Viewing a presentation,Inserting, Deleting and Copying of Slides; Working with Notes, Handouts, Columns & Lists, Managing Slide Shows, navigating through a presentation, adding graphics, multimedia and special effects, creating presentation for the web.

Reference Books:

1. Comdex Computer Course Kit (windows 7 with office 2010), Gupta Vikas, Dreamtech Publication
2. Mastering MS Office 2000, Professional Edition by Courter, BPB Publication.
3. MS Office 2000 Training Guide by Maria, BPB Publications.
4. MS Office complete by SYBEX.
5. PC Software Made Simple, Taxali, BPB.

DCA - I Semester
LAB

DCAP104 -PC Package LAB

Note: - Practical should cover syllabus of respected theoretical papers.

The break-up of marks for Practical will be as under:

Sr. No.	Argument	Total Credit
1.	Lab Record	
2.	Viva-voce	
3.	Program Development and Execution	

Total Marks:

DCAP105 DTP Lab - 2

Note: - Practical should cover syllabus of respected theoretical papers.

The break-up of marks for Practical will be as under:

Sr. No.	Argument	Total Credit
1.	Lab Record	
2.	Viva-voce	
3.	Program Development and Execution	

Total Marks:

DCA - I Semester

Desktop Publishing (DTP)

Subject Code: DCAT103

COURSE OUTCOMES

CO1: Understand Publisher Interface, its layout, commands.

CO2: Learning to import text and organize the layout of text boxes and placeholders within a publication and other related features.

CO3: Formatting text and paragraphs also themes to enhance the overall look of publication.

CO4: Introducing tools and features to edit/review text as well as tables for a organized layout.

CO5: Adding pictures and images to Publication and using various tools to format and fine tune their appearance.

CO6: Using Publisher's tools to check on design, preview, print and sent by email.

UNIT–I

Page Maker: Page Maker Icon and help, Tool Box, Styles, Menus etc., Different screen Views, Importing text/Pictures, Auto Flow, Columns, Master Pages and Stories, Story Editor, Menu Commands and short-cut commands, Spell check, Find & Replace, Import Export etc., Fonts, Points Sizes, Spacing etc., Installing Printers, Scaling (Percentages), Printer setup Use of D.T.P. in Advertisements, Books & Magazines, News Paper, Table Editor.

UNIT–II

Adobe Photoshop: Adobe Photoshop CS4: Menus and panels, Exploring the Toolbox, Working with Images: Working with Multiple Images, Rulers, Guides & Grids, Image Size Command, Adjusting Canvas Size & Canvas Rotation, Creating, Selecting, Linking & Deleting Layers, Painting with Selections, Red Eye Tool, Clone Stamp Tool, Color creation, Quick Mask Options, Creating Straight & Curved Paths, Creating Special Effects.

UNIT–III

CorelDraw: CorelDraw Command Bars & Tools, Drawing Area-Objects-Lines, Working with Text & Artistic Media Tool, Fills & Modifying Outlines, Drop Shadows, Importing and Editing OCR Text, Templates, Drawing and Editing Curves and Lines, Three-point Tools, Clipart, Special Characters and Creating Symbols, Working with Layers & Creating a Master Layer, Brush Tools and Adding Objects, Interactive Tools, PowerClip Feature and the Envelope Tool.

UNIT–IV

Other Work in DTP: Scanning, Type of Scanner, Importing image, text from scanner, ABBY fine reader, Acrobat (PDF) to Word, and Word to PDF, PDF Editor, PDF Annotator, PDF Infix, Voice to word conversion.

Reference Books:

1. Corel DRAW X4, Deborah Miller, Pearson Education
2. Photoshop CS4 Quicksteps, Carole Matthews & Gary David Bouton, TMH
3. Desktop Publishing Software: Adobe Creative Suite, Adobe Frame Maker, Adobe Indesign, Adobe PageMaker, Altsoft Xml2pdf, Bookmaking Software; Uni.press.org
4. Adobe Pagemaker 7.0 Inver 1st Edition, Kevin G. Proot, Ceneage Learning Pvt Ltd.
5. Corel Draw X4: The Official Guide, (Paperback), Gary David Bouton, TMH

DCA - II Semester

Internet and Web Technologies

Subject Code: DCAT201

COURSE OUTCOMES

CO1: Analysis the basics of Internet, its use and evolution
CO2: General introduction to WWW, connections and basics of E-mail.
CO3: Website development basics using HTML and its tags.

UNIT-I

Internet: Evolution & Protocols of internet, Applications of Internet, Internet Vs Internet, Growth of Internet, History of Internet.

UNIT-II

WWW, World Wide Web (WWW) History, Working, Web Browsers, client server architecture.
Connectivity - Dial-up, Leased line, VSAT etc., URLs, Domain names, Portals, Applications.

E-Mail: Concepts, Basics of Sending & Receiving, E-mail, Free E-mail services.

UNIT-III

Searching the Web, HTTP, URLs, Web Servers, Web Protocols. Web Publishing Concepts, Domain Name Registration, HTML, Design Tools, HTML Editors, Image Editors.

UNIT- IV

Introduction to HTML, HTML Concepts of Hypertext, Versions of HTML, Elements of HTML Syntax, Head & Body Sections, HTML tags, Inserting Texts formatting, text style. Images, Hyperlinks, Backgrounds and Color Controls, Table Layout and Presentation, Use of Font Size & Attributes, List types and its Tags, Forms.

Reference Books:

1. M.L. Young: Complete Reference b: Internet; 2nd Edition; Tata Mc Graw Hill,2006.
2. Thomas A. Powel; Web Design: C.R.; Second Edition; TMH, 2009.
3. Thomas A. Powel; HTML & XHTML: C.R.; Fourth Edition; TMH, 2008.
4. Harely Hahn: The Internet, Tata Mc Graw Hill.
5. G. Robertson: Hands on HTML, BPB Publications.
6. Joel Sklar: Principles of Web Design, BPB Publications

DCA - II Semester
Programming in C
Subject Code: DCAT202

COURSE OUTCOMES

CO1. Understanding the basic terminology used in computer programming.
CO2. Writing, compiling and debugging programs in C language using different data types. CO3. Designing programs involving decision structures, loops and functions, arrays and strings. CO4. Understanding pointers and use of structure and union.

UNIT-I

Fundamentals of C: Programming Concepts, Pseudocode, Algorithm, Flowchart, History and importance of C, Basic Structure and Execution of C Program, Constants, Variables, and Data Types, Operators and Expressions, Operator Precedence and Associativity, Managing Input and Output Operations.

UNIT-II

Branching & Looping: if statement, if…else statement, nesting of if else statement, else if ladder, switch statement, Goto statement. **Looping:** while loop, do while loop, for loop.
Arrays and Strings: One-dimensional arrays, Declaration and Initialization, Two-dimensional arrays, Declaration and Initialization, Character arrays.
String: Reading and Writing strings, String-handling functions.

UNIT-III

Functions: Need, Elements of user-defined functions, Definition of Functions, Function call and declaration, Category of Functions, Parameter Passing, Recursion, Passing arrays to functions, Passing strings to functions.
Storage Classes: Scope, visibility and life time of variables.

UNIT-IV

Understanding Pointers: Accessing the address of a variable, declaration and initialization of pointer variables, accessing a variable through its pointer, pointer arithmetic, pointer to pointer, Array through pointers.
Structures and Unions: Defining structure, declaring structure variables, Accessing structure members, Structure initialization, Operation on individual members, Array of structures, Union.

Reference Books:

1. E. Balagurusamy – Programming in ANSI C, 3rd Edn., TMH, New Delhi; 2004.
2. Programming with C, B.S.Gottfried (TMH).
3. Y. Kanetkar – Let us C, 4th Edition, BPB Publication, New Delhi; 2002.
4. Kerighan& Richie the C programming language (PHI Publication).

DCA - II Semester

Operating System

Subject Code: DCAT203

COURSE OUTCOMES

CO1. Recognizing the basic and types of operating system.
CO2: Understanding Process and CPU scheduling and deadlock handling to manage process. CO3: Understanding logical and physical address space, paging and segmentation.
CO4: Learning Device Management and file system implementation and file system interface.

UNIT-I

Introduction to Operating System: What is an Operating System, Architecture of Operating Systems, Types of Operating Systems, Process Model, Process States and Transitions, System Calls.

UNIT – II

Process Management: Process Scheduling, Cooperating Processes, Inter-process Communication, CPU Scheduling: Scheduling Criteria, Scheduling Algorithms, Process Synchronization: Background, Deadlocks.

UNIT – III

Memory Management: Background, Logical versus Physical Address space, swapping, Contiguous allocation, Paging, Segmentation, Segmentation with Paging, Virtual Memory: Demand Paging.

UNIT – IV

Device Management: Device Management: Techniques for Device Management, Dedicated Devices, Shared Devices.

File-System Implementation: A Simple File System, Logical & Physical File System, File- System Interface: Access Methods, Directory Structure, Free-Space Management, Directory Implementation.

Reference Books:

1. Operating System Concepts, Silbersachatz and Galvin, Pearson Education Pub.
2. Operating Systems Internals and Design Principle, William Stallings, Prentice Hall Publishers.
3. Operating Systems, A. S. Tannenbaum, PHI.
4. Operating Systems - A Concept Based Approach, Dhananjay M. Dhamdhere, TMH.
5.