

# **DIPLOMA IN COMPUTER APPLICATIONS**

## **ONE YEAR DIPLOMA PROGRAMME**

### **SYLLABUS**

**SESSION 2007-08**



**MAHATMA GANDHI CHITRAKOOT GRAMODAYA  
VISHWAVIDYALAYA, CHITRAKOOT, SATNA (M.P.)**

# **DIPLOMA IN COMPUTER APPLICATION**

## **BACKGROUND**

Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya is the first modal of a full - fledged Rural University setup on the basis of Dr. Radhakrishanan Commission Report (1994). In a way it represented a rebellion against the traditional elitist top-down pattern of education and indeed represents a movement for people's education

The Gramodaya Vishwavidyalaya setup in February 1991 is completing 15 years of its functioning and is ready for an innovative programme of practice based learning; action based reach and need based extension programmed. Development of new courses based on the needs and aspiration of the society is a continuous process in this university. The academic programmes offered job oriented, which is the need of the day.

## **DIPLOMA IN COMPUTER APPLICATIONS**

Due to ever inversing potential of Information Technology, Madhya Pradesh is planning to use Information Technology an effective tool to solve many hitherto unsolvable social and economic problems of eth tribal and remote rural areas.

Gramodaya University has started a One Year Diploma course in Computer Applications to answer the present day needs of enterprises and IT supported e-governance and e-commerce in the village context.

## **OBJECTIVES OF THE COURSE**

- (1) To provide deep training to youth from rural sector working skill in all those areas of IT that has a bearing on social sector.
- (2) To provide a deeper perception of the problem and solution approaches in the rural development.

## **CAREER AVENUES OF THE COURSE ARE**

Employment & Self-Employment avenues like Web Designing, System Analysis, Software Development Organization, Networking Tasks, Information Centers, Computer Dealership and Consultancy.

## **GENERAL INSTRUCTION**

- Period of the programme – 1 Year
- Course Fees –
- Entrance Qualification – Intermediate (10+2)
- Admission Process – Through distance education MGCGV.
- Course Administration – As per norms of MGCGV, Chitrakoot.

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**DIPLOMA IN COMPUTER APPLICATIONS**

**SCHEME EXAMINATION**

**FIRST SEMESTER**

<b>Sub. Code</b>	<b>Subject</b>	<b>Credit</b>	<b>CFA</b>	<b>ESE</b>
DCA 101	Fundamentals of Computers & IT	3+0=3	20	80
DCA 102	PC Package	3+0=3	20	80
DCA 103	Operating System (DOS, Window & Unix)	3+0=3	20	80
DCA 104	Lab-I (MS Office & Networks	0+3=3	20	80
	Total Credit	9+3=12		

**SECOND SEMESTER**

<b>Sub. Code</b>	<b>Subject</b>	<b>Credit</b>	<b>CFA</b>	<b>ESE</b>
DCA 105	Internet & Web Designing	3+0=3	20	80
DCA 106	Programming using C	3+0=3	20	80
DCA 107	Lab-II (Programming using C & Web Designing)	3+0=3	20	80
DCA 108	Computer Networks	3+0=3		
DCA 109	Project	0+1=1	20	80
	Total	9+4=13		
	Total Credit (I-Sem. + II-Sem.)	12+13=25		

# **DCA 101 - FUNDAMENTALS OF COMPUTERS & IT**

3+0=3 Credit

**Unit-1:** Fundamentals of Computers & Information Technology: A simple model of a computer, computer generations and classification. Computer system characteristics, types of computers, applications of computers, algorithms, flow chart, introduction of information technology.

**Unit-2:** Number System & Information Representation: Number systems, binary, decimal, octal and hexadecimal, representation of integers and fractions, number systems conversion, coding – BCD, ASCII, ISCII, EBCDIC & Gray Code.

Binary Arithmetic: Binary addition, binary subtraction, signed numbers, two's complement representation of numbers, addition/subtraction of numbers in 2's complement notation, binary division.

**Unit-3:** Input/Output units & Computer Memory: Input unit & devices, output unit & devices, memory cell, types of memory, read and memory, serial access memory, magnetic hard disk, floppy disk, compact disk, magnetic tapes and pen drive.

**Unit-4:** Computer Languages: Programming language, machine & assembly language, higher level languages, compiler, assembler and interpreter.

**Unit-5:** Computer & Communication: Analog & digital signals, modulations, modem, data communication, physical communication media, twisted, coaxial, fiber-optics, wireless in local loop, cellular communication system, networks, type of networks, topologies, communication protocols, internet.

## **REFERENCE BOOKS**

- Fundamentals of computers – V. Raja Raman
- Digital Computer Fundamentals – Thomas C. bartee

# DCA 102 - PC PACKAGE

3+0=3 Credits

**Unit-1:** MS windows, Introduction to M.S. Windows, features of windows, various versions of windows & its use, working with windows, my computer & recycle bin, desktop, icons and windows explorer, screen description & working styles of windows, dialog boxes & toolbars, working with files & folders, shortcuts & auto starts, accessories and windows settings using control panel, start button & program lists, installing new hardware & software.

**Unit-2:** MS Word basics, introduction to MS Office, introduction to MS Word, features & area of use, working with MS Word, menus & commands, toolbars & buttons shortcut menus, wizards & templates, creating a new document, different page views and layouts, applying various text enhancements working with styles, text attributes, paragraph and page formatting, text editing using various features, bullets, numbering, auto formatting, printing & various print options.

**Unit-3:** Advanced features of MS Word, spell check, thesaurus, find & replace, headers & footers, inserting – page numbers, pictures, files, auto texts, symbols etc. working with columns, tabs & indents, creation & working with tables including conversion to and from text, margins & space management in document, adding references and graphics, mail merge, envelopes & mailing labels.

**Unit-4:** MS Excel, introduction and area of use, working with MS Excel, concepts of workbook & worksheets, using wizards, various data types, using different features with data, cell and texts, inserting, removing & resizing of columns & rows, working with data & ranges, different views of worksheets, column freezing, labels, hiding, splitting etc. using different features with data and text, use of formulas, calculations & functions, cell formatting including borders & shading, working with different chart types, printing of workbook & worksheets with various options.

**Unit-5:** MS PowerPoint: Introduction & area of use, working with MS PowerPoint, creating a new presentation, working with presentation, using wizards, slides & its different views, inserting, deleting and copying of slides, working with notes, handouts, columns & lists, adding, graphics, sounds and movies to a slide, working with PowerPoint, objects, designing & presentation of a slide show, print presentations, notes handouts with print options

## REFERENCE BOOKS

- Microsoft Office 2000, 8 in 1 by Joe Harbraken, Prentice Hall of India, ISBN – 91-203-1582-0.

# **DCA 103 - OPERATING SYSTEM (DOS, WINDOW & UNIX)**

3+0=3 Credits

**Unit-1:** Introduction of Operating System: History & evolution, types of OS, need of OS, type: single user, multi-user, batch processing, multitasking, multiprogramming, multiprocessing, time sharing, real time, major functions of O.S., layered organization, comparative study of popular OS.

**Unit-2:** MS-DOS: Introduction, terminology of MS-DOS, Structure of MS-DOS, OS commands, internal commands (dir, del, copy, cd, rd, md, rename, prompt, ver, vol. type, path, time, date, etc.), External Commands (tree, chkdsk, fdisk, backup, restore, format etc.)

**Unit-3:** Advance MS-DOS: Use of function keys in DOS, file redirection and pipelining, batch commands, use of and creation of batch file, configuring files, DOS ways of formatting disk, handling files.

**Unit-4:** Windows: Important feature of Windows (9x onwards), basic elements, GUI, OLE, DESDTOP and its icons, creating, renaming and moving various folders and files, creating shortcuts, windows explorer, control panel and accessories, equivalent windows command for the DOS internal and external commands.

**Unit-5:** UNIX: Evolution of UNIX, feature of UNIX, components of UNIX, file system and concept of files, directories, file oriented commands like – is, mkdir, cd, rmdir, inter user communication commands like – write, mail, etc. other commands like – kill, date, who, sleep, who, ps etc.

## **REFERENCE BOOKS**

- Mastering Windows 3.1 (BPB) – Cowart R.
- UNIX for you (THM) – Kopaker P.K.
- DOS 6 and 6. Instant reference (BPB) – Thomas R.

## **DCA 104 – LAB-I (Lab DCA-102)**



## **SECOND SEMESTER**

### **DCA 105 – INTERNET & WEB DESIGNING**

3+0 = 3 Credits

**Unit-I:** Internet Overview – Importance and applications of internet, world wide web, email, web browsers, web clients and servers, URL, internet protocols: HTTP, FTP, TCP/IP, Domain names portals.

**Unit-2:** Web Design: Software and hardware requirements, rules for good website design, web publishing concepts, domain name registration, space on host server for website, concepts of search engines.

**Unit-3:** HTML Basics: Introduction to HTML, concepts of hypertext, version of HTML, Elements of HTML, syntax, head and body section, building HTML documents, inserting text & images, hyperlinks, backgrounds and color controls, different HTML tags, table layout and a presentation use of font size and attributes, list type and its tags, use of frames and forms in web pages.

**Unit-4:** Beyond Basic: Adding flair and impact to the web pages using graphical and animation techniques, Netscape editor, FrontPage and PhotoShop tools, gif and jpg files, scanning pictures.

**Unit-5:** Advanced HTML: Use of tables, frames, forms, dynamic web pages, and multimedia on web.

#### **REFERENCE BOOKS**

- Html Complete: BPB Publication
- The Internet – Christian Crumlish
- Teach Yourself Internet in 24 hours - Tec media

# DCA 106 – PROGRAMMING USING C

3+0 = 3 Credits

**Unit-1:** Basic History of “C” language, basic structure of “C” program, constant and variables, identifiers and keywords, character-set, data types, declaration of variables, assigning values to variables, defining symbolic constants, various operators – Arithmetic, relational, logical, assignment, increment and decrement operators, conditional operators, bit wise operators, special operators, type conversions in expression, reading/writing character and numeric formatted input & output.

**Unit-2:** Decision making and Branching & Looping – Simple IF, IF – ELSE, nesting of IF – ELSE, ELSE – IF ladder, switch statement, go to statement, WHILE statement, do statement, FOR statements, jumps in loops.

**Unit-3:** Arrays Character & Strings – One dimensional, Two dimensional and Multi dimensional array, initializing arrays, handling of character string – declaring and initializing string variables, reading and writing strings, arithmetic operation in characters, concept of pointer.

**Unit-4:** Functions: String handling functions, user defined functions, definition functions, scope and lifetime of variables in functions. Return values and their types, functions calls, category of functions, handling of non-integer functions, nesting of functions, recursion, functions with arrays & string.

**Unit-5:** Structures and Unions – Structure definition, giving values to members, structure initialization, comparison of structure variables, arrays of structures, arrays within structure, structures within structures, structures and functions, unions, bit fields.

## REFERENCE BOOKS

- Programming in C - E. Balagurusamy
- Introduction to C - Cooper

# **DCA 107 – LAB-II (PROGRAMMING USING C & WEB DESIGNING)**

# DCA 108 – COMPUTER NETWORK

3+0 = 3 credits

**Unit-1:** Introduction: Network goals, application of networks, network classifications – WAN, LAN, MAN; networks, examples of networks.

**Unit-2:** Reference Model and Transmission Media: OSI reference model, TCP/IP reference model, comparison of OSI and TCP/IP reference model, transmission media: magnetic media, twisted pair, broadband and broadband coaxial cable, fiber optics, wireless transmission: electromagnetic spectrum, radio transmission, microwave transmission, infrared and millimeter waves, light wave transmission.

**Unit-3:** Data Link and Multiple Access Protocols: Simplex, stop and wait and sliding window protocol, protocol specification and verification, multiple access protocol, ALOHA, CSMA, IEEE standard.

**Unit-4:** Switching Technique and Routing Algorithms: Circuit switching, message switching, packet switching.

**Unit-5:** Network Security: Cryptography, secret key-algorithms and public key algorithms, introduction of DNS, SNMP, Electronic mail, Usenet news and www.

# **DCA 109 – PROJECT**

0+1 = 1 credits