DEPARTMENT OF COMPUTER APPLICATION

RAJEEV GANDHI GOVT. PG COLLEGE AMBIKAPUR (C.G.)



PROGRAM /COURSE STRUCTURE AND SYLLABUS for DIPLOMA IN COMPUTER APPLICATION (DCA)

Session 2023 - 24

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DCA (SEMESTER - I)

Course Code	Course (Paper/Subjects)	Theory Marks		Internal Marks		Practical Marks		Project Marks		Total	
		Max.	Min.	Max.	Min.	Min.	Max.	Min.	Max.	Min.	Max.
DCA 101	Essential of Information Technology and OS	70	25	30	11	-	-	-	-	100	40
DCA 102	Essential of Office Automation	70	25	30	11	-	-	-	-	100	40
DCA 103	Programming in C Language	70	25	30	11	-	-	-	-	100	40
DCA 104	Practical Based on (DCA 102)	-	-	-	-	25	9	-	-	25	9
DCA 105	Practical Based on (DCA 103)	-	-	-	-	25	9	-	-	25	9
	TOTAL									350	

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DCA (SEMESTER - II)

Course Code	de Course (Paper/Subjects)		Theory Marks		Internal Marks		Practical Marks		Project Marks		Total	
		Max.	Min.	Max.	Min.	Min.	Max.	Min.	Max.	Min.	Max.	
DCA 201	OBJECT ORIENTED PROGRAMMING USING C++	70	25	30	11	-	-	-	-	100	40	
DCA 202	DBMS	70	25	30	11	-	-	-	-	100	40	
DCA 203	Essential of E- Commerce	70	25	30	11	-	-	-	-	100	40	
DCA 204	Practical Based on (DCA 201)	-	-	-	-	25	9	-	-	25	9	
DCA 205	Practical Based on (DCA 202)	-	-	-	-	25	9	-	-	25	9	
	TOTAL									350		

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DCA (FIRST SEMESTER)

COURSE CODE: DCA101

COURSE TITLE: ESSENTIAL OF INFORMATION TECHNOLOGY AND OS

- 1. Acquire knowledge of basic computer technology.
- 2. Gain Knowledge about H/w and S/w Concepts with its technology areas.
- 3. Analyze & learning with MS-DOS & its basic terminology.
- 4. Understand the importance of windows operating system & its environment.
- 5. Design & Analyze the basic knowledge of Linux etc.

			(FI	DCA RST SEMESTER)					
PAPER C	CODE:	DCA101	(1 1						
PAPER T	PAPER TITLE: ESSENTIAL OF INFORMATION TECHNOLOGY AND OS								
MARKS:	100	THEORY:	70	CCA : 30	PRACTICAL: 00				
	Introductio	n to Computers:-							
UNIT-1 12 Hrs.	Repeatabilit Analog, Dig of Compute	y. Computer Hard ital, Hybrid Gener r Generations Cor	ware and al and Sp nputer Sy	Software, Block Diagr ecial Purpose Computer	ccuracy, Reliability, Memory capability, am of a Computer. Types of Computers: rs. Computer Generations: Characteristics & Main-frames. Introduction to a PC : T Pentium PC's.				
	Computer	Organization :-							
UNIT-2 12 Hrs.	Introduction to Input Devices : Keyboard, Direct Entry – Card Readers, Scanning Devices – O.M.R., Character Readers, MICR, Voice Input Devices, Pointing Devices – Mouse, Light Pen. Storage Devices Storage Fundamentals-Bits, Bytes, Primary Storage – RAM, ROM, Secondary Storage-Floppy Disks, Hard Disks, Optical Disks, CD/DVD. Computer Output : Output Fundamentals, Hardcopy Output Devices, Impact Printers, Non-Impact Printers, Plotters, Computer output, Softcopy Output Devices, Cathode Ray Tube, Flat Screen Technologies.								
	Operating S	System :							
UNIT-3 12 Hrs.	MS-DOS - Introduction, History and Versions of DOS. Booting Process, System Files and Command.com, Internal DOS Commands - DIR, MD, CD, COPY, DEL, REN, VOL, DATE, TIME, CLS, PATH, TYPE. Files & Directories, Elementary External DOS Commands - CHKDSK, MEM, XCOPY, PRINT, DISKCOPY, DISKCOMP, DOSKEY, HELP, TREE, SYS, LABEL, ATTRIB, Creating a Batch Files, Additional Commands - ECHO, PROMPT, MODE, EDIT, FORMAT, FDISK, BACKUP, RESTORE, MORE, SORT.								
	Windows:								
UNIT-4 12 Hrs.	Windows C Accessories	: Calculator, Noter	ad, Paint		Start Menu, My Computer, Recycle Bin. Map. Explorer: Creating folders and other o, Control Panel.				
UNIT- 5 12 Hrs.	-	, Directory Structu			res of Linux OS, Structure of Linux OS, nands, Linux commands cd, md, rm, mv,				

Text Books
1. Computer science: an overview, Brookshear, J.G., Pearson Education
2. Fundamental of Computers, Raja Raman V., Prentice Hall of India, New Delhi.
3. Introduction to Computers, Norton, Peter, , Mc-Graw-Hill.
4. Computer Fundamentals, B. Ram, New Age International Pvt. Ltd.
 Reference Books: 1. A+ Certification All-in-One Desk Reference for Dummies, Glen Clarke 2. IBM PC & Clones: Hardware Trouble Shooting and Maintenance, B. Govindarajalu, Tata McGraw Hill 3. Pc Upgrade & Repair Bible, Wiley India.

DCA (FIRST SEMESTER)

COURSE CODE: DCA102

COURSE TITLE: ESSENTIAL OF OFFICE AUTOMATION

- 1. Acquire knowledge of basic windows operating system.
- 2. Gain Knowledge while working with MS-Word along with its tools.
- 3. Analyze & learning with MS-Excel and its applications.
- 4. Understand the importance of MS-PowerPoint with setting templates and views .
- 5. Design & Analyze the interactive PowerPoint presentation using all its animations. etc.

	DCA (FIRST SEMESTER)
PAPER C	CODE: DCA102
PAPER T	TITLE: ESSENTIAL OF OFFICE AUTOMATION
MARKS	100 THEORY: 70 CCA: 30 PRACTICAL: 00
UNIT-1 12 Hrs.	MS-Word- Creating and editing word documents, formatting documents – aligning documents, indenting paragraphs, changing margin, formatting pages, formatting paragraph, printing labels, working with tables, formatting text in tables, inserting and deleting cells, rows and columns, use bulleted and numbering, checking spelling and grammar, finding synonyms, working with long documents, working with header and footer, adding page number and foot note, working with graphics, inserting clip art, working with pictures, Word art, creating chart & Graphs, creating flowcharts, working with mail merge, writing the form letter, merging form documents, merging to label, Working with Mailing lists and Data Sources, selecting merge records, creating macros, running macro.
UNIT-2 12 Hrs.	Working with MS-Excel – Introducing Excel, use of excel sheet, saving, opening and printing workbook ,Apply formats in cell & text, Divide worksheet into pages , setting page layout, adding Header & Footer. Using multiple documents, arranging windows i.e. (Cascade, Tiled, Split), protecting your work, password protection. Working with Functions & Formulas, using absolute reference, referencing cell by name , using cell label , giving name to cell and ranges , working with formulas (mathematical & trigonometric , statistical, date time , most recently used), Working with Excel graphics, creating chart & graphs. Working with lists & database, sorting a database, filtering a database ,using auto filter ,criteria range, calculating total and subtotal, creating pivot table, goal seek, recording & playing macros, deleting and selecting macro location.
UNIT-3 12 Hrs.	Presenting with PowerPoint – Creating presentation, working with slides, different types of slides, setting page layout, selecting background and applying design, adding graphics to slide, adding sound and movie, working with table, creating chart and graph, playing a slide show, slide transition, advancing slides, setting time, rehearsing timing, animating slide, animating objects, running the show from windows.
UNIT-4 12 Hrs	Introduction of DBMS through MS-Access – Introduction to Database, DBMS, RDBMS, Features of Access, Designing Database, Relationship (One to One, One to many, Many to Many), Create table (Design View, Wizard, Datasheet View), Query (Update Query, Delete Query, Selection Query, Cross table Query, Make table Query).

UNIT- 5 12 Hrs	Introduction to TALLY Accounting, Accounting Conventions (Single and Double Entry), Transactions, Types of Accounts, Personal Accounts, Real, Nominal, Rules of Accounting. Introduction to Accounting Software [Ex. TALLY] – Creating of Company, Ledgers & Groups.
	Voucher Entry; Types of Voucher, Capital and Revenue, Income, Expenditure, Receipts, Preparation of Trial Balance, Profit & Loss Account & Balance Sheet.
SUGGESTED READINGS	Text Books: 1. The Big Basics Book of MS-OFFICE: Fulton, et al. 2. Microsoft Office Training Guide, Visual Approach to Learning MS Office Package 3. Official Guide to Financial Accounting (Using Tally. Erp 9 With Gst) – Book by Tally Education Pvt.

DCA (FIRST SEMESTER)

COURSE CODE: DCA103

COURSE TITLE: PROGRAMMING IN C-LANGUGAE

- 1. Acquire knowledge of basic computer programming language.
- 2. Gain Knowledge about Procedural Oriented Programming Language.
- 3. Analyze & learning with C-Programming & its basic terminology.
- 4. Understand the importance of Array, Functions, Pointer and String.
- 5. Understand the implementation of Control Structure.

	DCA (FIRST SEMESTER)							
PAPER (
PAPER TITLE: PROGRAMMING IN C LANGUAGE								
MARKS	100 THEORY: 70 CCA : 30 PRACTICAL: 00							
UNIT-1 12 Hrs.	Introduction to C programming - structure and C compiler, Data representation : Simple data types like real integer, character etc. Program, statements and Header Files, Simple Input Output statements in C, Running simple C programs. Primitive data types in C, char, integer, float, Double Long, Double Void etc.							
UNIT-2 12 Hrs.	Operators and Expressions – Arithmetic Operators, Assignment Operators, increment and decrement operator, relational and Boolean operators, Mixing of Different data types and operators for forming expressions.							
UNIT-3 12 Hrs.	Control Structure : If - statement, If -else statement, Multiway decision, Compound Statement, Loops: For - loop, While -loop, Do-While loop, Break statement, Switch statement, Continue statement, Goto statement. Arrays, Strings, Multidimensional Arrays, Strings, Array of Strings.							
UNIT-4 12 Hrs.	Functions : Function main , Functions accepting more than one parameter, User defined and library functions, Concept associatively with functions, function parameter, Return value, recursion function, Structure and Union, Declaring and using Structure, Structure initialization, Structure within Structure, Operations on Structures, Array of Structure, Array within Structure.							
UNIT- 5 12 Hrs.	Pointers: Definition and use of pointer, address operator, pointer variable, referencing pointer, void pointers, pointer arithmetic, pointer to pointer, pointer and arrays, passing arrays to functions, pointer and functions, accessing array inside functions, pointers and two dimensional arrays, array of pointers, pointers constants, pointer and strings.							
SUGGESTED READINGS	Text Books: 1. Let us C - Yashwant Kanitkar. 2. Mastering in C - Venugopal 3. Shaum's Series - Venugopal							



DEPARTMENT OF COMPUTER APPLICATION

DCA (SEMESTER - II) ٠

Course Code	Code Course (Paper/Subjects)		Theory Marks		Internal Marks		Practical Marks		Project Marks		Total	
		Max.	Min.	Max.	Min.	Min.	Max.	Min.	Max.	Min.	Max.	
DCA 201	OBJECT ORIENTED PROGRAMMING USING C++	70	25	30	11	-	-	-	-	100	40	
DCA 202	DBMS	70	25	30	11	-	-	-	-	100	40	
DCA 203	Essential of E- Commerce	70	25	30	11	-	-	-	-	100	40	
DCA 204	Practical Based on (DCA 201)	-	-	-	-	25	9	-	-	25	9	
DCA 205	Practical Based on (DCA 202)	-	-	-	-	25	9	-	-	25	9	
	TOTAL									350		

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DCA (SECOND SEMESTER)

COURSE CODE: DCA201

COURSE TITLE: OBJECT ORIENTED PROGRAMMING USING C++

- 1. Acquire knowledge of basic computer programming language.
- 2. Gain Knowledge about Object Oriented Programming Language.
- 3. Analyze & learning with C++ Programming & its basic terminology.
- 4. Understand the importance of Data binding, functions and creating objects.
- 5. Understand the implementing concept of overloading and operator.

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PAPER C		DCA201 OBJECT ORIENTI	ED PROG	GRAMMING USING	C++			
MARKS:		THEORY:	50	CCA : 25	PRACTICAL: 00			
UNIT-1 15 Hrs.	Polymorp Types and Operators Operate-A	hism, Data Binding 1 sizes, Variable, Con :-Arithmetic, Relatio	, Encapson Stants an Inal, Assignation Inal, Assignation	ulation, Classes, subcl d its types, Use of « ar gnment, Logical, Increm s, Operator Precedence	OOP Concepts: Abstraction, Inheritance, asses and Objects; Basics of C++: Data ad » operators, Operators and Expressions: nent and Decrement Operators (++ and), ee, Precedence and Order of Evaluation,			
UNIT-2 20 Hrs.	 Program Flow & Decision Control: if, if - else, if - else if, Loop Control: while, do - while, for, break, continue, Case Control: switch, goto; Functions/Procedures, Returning values from functions, Arguments Passed by Value, Passing Addresses of Arguments, Pointers and Arrays: Pointer Initialization, Pointer Operators, Pointer Arithmetic, Functions and pointers, Arrays, Initializing Arrays, Passing Arrays to Functions, Pointers and Arrays, Pointer to an Array, Array of pointers, Strings: String I/O, Arrays of Strings, Structures, Arrays of Structures. 							
UNIT-3 20 Hrs.	Binding Data & Functions: Defining a Class, Creating an Object, Scope, Data Abstraction, Data Encapsulation, 'this' Pointer, Dynamic Creation of Objects, Constructors and Destructors: Parameterized & Copy constructor, Member Functions & Methods, Friend Class and Friendly Functions, Returning Objects, Arrays of Objects.							
UNIT-4 20 Hrs	Function and Operator Overloading, Rules for Overloading, Operator overloading and its uses: Overloading unary and binary operators, Overloading the Assignment Operator, Overloading the « Operator, Overloading the Increment & Decrement Operator, Converting data types: Basic to class type, Class to Basic Type, Class to Another Class Type.							
UNIT- 5 15 Hrs	Reusing Classes: Inheritance-Base and Derived classes, Inheritance types, Scope Resolution Operator, Access Modifiers, Multiple & Multilevel Inheritance, Calling Base Class Constructor, Overriding Base Class Members, Virtual functions and Polymorphism: Virtual & non-virtual Overriding, Rules for Virtual Functions, Pure Virtual Functions, Static and Dynamic Binding, Virtual Base Classes, Templates, Exception Handling, Throwing an exception.							
SUGGESTED READINGS	2. O Reference 1. A 2. P E	++, the Complete Re bject Oriented Progra e Books: n Introduction to OC rogramming Principle Education.	amming i P, 3rd Ed es and Pra	lition, T. Budd, Pearson actice Using C++, B.Str	afore, SAMS, Pearson Education			

DCA (SECOND SEMESTER)

COURSE CODE: DCA202

COURSE TITLE: DBMS

- 1. Acquire knowledge of basic Database design.
- 2. Gain Knowledge about Relational Model.
- 3. Analyze & learning with Database design concept.
- 4. Understand the importance of Normal forms.
- 5. Understand the implementation of Transaction Processing techniques.

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PAPER (CODE: DCA	202						
PAPER 7	TITLE: DBN	IS						
MARKS	100	THEORY:	70	CCA : 30	PRACTICAL: 00			
UNIT-1 12 Hrs	DML, Data I	ata, why datab Dictionary, Da	ata Structu	are and Correspo	an Architecture for a Data Base System, DDL & onding Operators, Data Models, The Relational acture and Access Method.			
UNIT-2 12 Hrs	ENTITY-RELATIONSHIP STRUCTURE : Entity – Relationship model as a tool for conceptual design-entities attribute and relationship. ER Diagram, Strong and weak entities, Generalization, specialization and aggregation, Converting and E-R Model into relational Schema.							
UNIT-3 12 Hrs	REKATIONAL DATA STRUCTURE : Relations, domain and attributes, keys extension and intentions, base table, indexes system R data manipulation, built – in- function, the system R dictionary.							
UNIT- 4 12 Hrs	Operations, Fu	gebra, Traditio arther Normali	nal set Op	nction dependen	ate Names for Derived Relations, special relations ace. First, Second and third normal form, Relations apositions, fourth normal form, fifth normal form.			
UNIT-5 12 Hrs	QUERY LANGUAGE : Embedded SQL, Introduction, operation not involving cursors, Operations involving cursor, dynamic statements, security & Integrity, security Specification in SQL. INTRODUCTION TO ORACLE : Introduction to Commercial data base query language, SQL & its environment. SQL as a data definition language, Creating tables, altering tables, inserting, deleting, updating, Retrieving data in a table, join concept (inner, outer, self, equi, non-equi), Nested Queries, Constraints Concept, Null, Not Null Concept, Primary Key, Foreign key, Unique Key, Concept and Authorization concept to ODBC Concept, Features of higher version of ORACLE.							
SUGGESTED READINGS		3ase System roduction to D	Data Base S		h & Siberschatz. Date			

DCA (SECOND SEMESTER)

COURSE CODE: DCA203

COURSE TITLE: ESSENTIAL OF E-COMMERCE

- 1. Acquire knowledge of E-commerce including its size, growth and future.
- 2. Gain Knowledge about Emergence of E-commerce.
- 3. Analyze & learning with Internet security its basic terminology in E-commerce.
- 4. Understand the importance of business practices using E-commerce.
- 5. Understand the working statics of HTML web design.

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PAPER C	ODE: DC	A 203			
PAPER T	ITLE : ESS	ENTIAL OF E-	COMMI	ERECE	
MARKS:	100	THEORY:	70	CCA : 30	PRACTICAL: 00
UNIT-1 12 Hrs.	of E-commo Definition o Emergence What is ED transaction,	erce market Wor f E-commerce; Bu of E-commerce PI, EDI in action, FEDI payment	ldwide a isiness m - E-com EDI bas system	nd in India; Internet and odels in E –Commerce envi umerce on private network sics, EDI standards, financ within the US, ACH cro	rce; Size, growth and future projection its impact on traditional businesses; ironment; Case studies. s, Electronic Data Interchange (EDI), cial EDI, FEDI for international trade edit transfer payment system FEDI, E-commerce on the web, E-commerce
UNIT-2 12 Hrs.	security, Ne Privacy, No key encrypti E-commerc Payment Mo	twork security; V n-repudiation; Pu on, public key end e Payment Syst odels; Credit Card	irus prote blic info cryption, c ems – I ; Debit C	ection and Hacking; Securi rmation, Private information digital signature. E-Commerce Payment Mo	ton in Internet/web environment; Client ty Measures: Authentication, Integrity, on, firewall tunnels, encryption, secret odels: Pure and Hybrid E-Commerce e debit to the accounts; and Alternative ve Bank of India.
UNIT-3 12 Hrs.	Types of E - Business–to (B2B2C) an transaction advantages	commerce – -Business (B2B d Consumer-to-C cycle, different and disadvantage), Busi onsumer types of s of E-N	ness-to-Consumer (B2C) (C2C) E- Commerce , Inter transactions in E-commer); Business-to-Business-to-Consumer er organizational transaction; Business rce environment; Electronic markets, ts; Inter- Organizational E-Commerce

UNIT-4 12 Hrs.	 HTML Basics & Web Site Design Principles – Concept of a Web Site, Web Standards, What is HTML? HTML Versions, Naming Scheme for HTML Documents, HTML document/file, HTML Editor, Explanation of the Structure of the homepage, Elements in HTML Documents , HTML Tags, Basic HTML Tags, Comment tag in HTML, Viewing the Source of a web page, How to download the web page source? XHTML, CSS, Extensible Markup Language (XML), Extensible Style sheet language (XSL), Some tips for designing web pages, HTML Document Structure. HTML Document Structure-Head Section, Illustration of Document Structure, <base/> Element, <isindex/> Element, <link/> Element ,META ,<title> Element, <SCRIPT> Element ,Practical Applications. HTML Document Structure-Body Section - Body elements and its attributes: Background; Background Color; Text; Link; Active Link (ALINK); Visited Link (VLINK); Left margin; Top margin ,Organization of Elements in the BODY of the document: Text Block Elements; Character References </th></tr><tr><th></th><td>,Text Block Elements: HR (Horizontal Line); Hn (Headings) ; P (Paragraph); Lists; ADDRESS ; BLOCKQUOTE; TABLE; DIV (HTML 3.2 and up) ; PRE (Preformatted); FORM ,Text Emphasis Elements, Special Elements Hypertext Anchors, Character-Level Elements: line breaks (BR) and Images (IMG),Lists ,ADDRESS Element, BLOCKQUOTE Element, TABLE Element ,COMMENTS in HTML ,CHARACTER Emphasis Modes, Logical & Physical Styles , Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER.</td></tr><tr><th>UNIT- 5
12 Hrs.</th><th> Image, Internal and External Linking between WebPages – Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER Insertion of images using the element IMG (Attributes: SRC (Source), WIDTH, HEIGHT, ALT (Alternative), ALIGN),IMG (In-line Images) Element and Attributes; Illustrations of IMG Alignment, Image as Hypertext Anchor, Internal and External Linking between Web Pages Hypertext Anchors ,HREF in Anchors ,Links to a Particular Place in a Document ,NAME attribute in an Anchor ,Targeting NAME Anchors, TITLE attribute, Practical IT Application. Designing web pages links with each other, Designing Frames in HTML. Practical examples. Creating Business Websites with Dynamic Web Pages – Concept of static web pages and dynamic web pages, Introduction to scripting, Types of Scripting languages, Scripting Files, Client Side Scripting with VB/Jscript/JavaScript, Practical examples of Client side scripting. Identifying Objects & Events, and Creating & Implementing Common Methods,. Hosting & promotion of the web site, Domain Name Registration, Web Space allocation, Uploading / Downloading the website- FTP, cute FTP. Web Site Promotion Search Engines, Banner Advertisements. </th></tr><tr><th>SUGGESTED
READINGS</th><th> Text Books: Business on the net - by Kamlesh N. Agarawala , Amit Lal & Deeksha Agarawal (Macmillan India Ltd.). Business on the net - by Kamlesh N. Agarawala, Amit Lal & Deeksha Agarawal Introduction to HTML by Kamlesh N. Agarwala, O.P.Vyas, Prateek A. Agarwala. </th></tr></tbody></table></title>
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