



**S. S. Jain Subodh P.G.(Autonomous)College**

**Jaipur**

**Academic Session 2023-24**

Scheme of Examination and P

roposed Syllabus for

**Post Graduate Diploma in Computer Application (PGDCA)**

## **One Year (Two semesters) Full Time Program**

The course of study of Post Graduate Diploma in Computer Science (PGDCA) shall extend over a period of **two semesters** spread over one year. On satisfactory completion of the course and after passing the examinations, a candidate will be awarded the Post Graduate Diploma in Computer Science.

The academic year shall be divided into two semesters. Semester I starts from July and ends in December. Semester II starts from January and ends in June and so on. There shall be an examination at the end of each semester.

The examination of each semester will consist of five theory papers, and four practical papers. Medium of instructions and examination will be **English** only.

### **Eligibility for Admission:**

Admission procedure for 1st semester starts in the month of June/July every year. The admission of the PGDCA courses should be any of the stream (Arts/Science/Commerce) a candidate must have passed graduation with 50% or more (48% for SC/ST/OBC/SOBC category) in aggregate without any approximation.

### **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 test etc.

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

- a) Part A will contain 12 questions of very short question type each carrying 1 mark. Students will have to attempt any 10 questions.
- b) Part B, will contain 4 short descriptive types of questions each carrying 5 marks, all are compulsory.
- c) Part C, will contain 4 long descriptive types of questions (from each unit) with internal choice each carrying 10 marks, all questions are compulsory.

Each practical examination (Maximum marks 100) will be of four-hour duration on one day and carry 60 marks for exercise(s) assigned in the examination and Viva-Voce, and 40 marks for the Internal Assessment.

S.No.	Question Pattern	Max.Marks( Theory)		Max.Marks( Practical)	
		ESE	CIA	ESE	CIA
1	PartA: 12 VeryShort Questions(attemptany10)	10 X 1=10			
2	PartB: 4 Short QuestionfromeachUnits	4 X5 =20			
3	Part C: 4 Questionsfromeach UnitwithInternal Choice	4 X 10=40			
	<b>Sub Total</b>	<b>70</b>	<b>30</b>	<b>60</b>	<b>40</b>
		<b>100</b>		<b>100</b>	

**Attendance:**

A candidateshallberequiredtoputinaminimumof75%attendanceatthelecturesand75%attendance at the practical'sseparatelyineach paper.

**ExaminationScheme**

S. No.	Paper	ESE	CIA	Total
1	Theory	70%	30%	100
2	Practical	60%	40%	100

**Number ofUnits in Syllabus**

S. No.	Stream	No. of Units
1	PGDCA	4

**Maximum Marks (Credits) forthe Course and Number of Units ofEachsubject1 Years /2 Semesters**

S. No.	Stream	Semester	Number ofPapersper semester		Total Marks(Credits ) of1 Semester	Sub Total (Credits)	GrandT otal (Credits )
			Theory	Practical			
1.	PGDCA						
		<b>Iand II</b>	5 X 100 (5 X 4)	4 X 100 (4 X 4)	500 +400=900 (20 +16 =36)	900 X 2 =1800 (36 X 2 = 72)	1800 (72)
							<b>1800 (72)</b>

# PostGraduateDiplomainComputerApplication(PGDCA)

## Programme Outcomes

PO1: The program equips students with essential domains of computer science and Information Technology (IT). It empowers them to apply core concepts in the development of domain-specific applications.

PO2: The program fosters critical thinking, cultivates problem-solving skills, encourages evaluative learning of various techniques, and deepens comprehension of problem essence.

PO3: The program educates students about the latest industry technologies.

PO4: The program instructs students in applying fundamental tools to address real-world challenges.

PO5: The program enables students to get industry ready and apply skills learned during course in industry.

PO6: The program provides students gateway in accounting, publishing, networking and web designing fields.

## SemesterStructure(PGDCA)

### Semester I

PaperNo.	Subject	TeachingHrs. Per Week	End SemesterExam (ESE)	Continuous InternalAssessment(CIA)	Exam Hours	Credits
<b>TheoryPaper</b>						
PDCA101	ComputerFundamentals&Office Tools	04	70	30	03	4
PDCA102	ProgrammingFundamentals	04	70	30	03	4
PDCA103	Web Development Tools	04	70	30	03	4
PDCA104	NetworkingTechnologies	04	70	30	03	4
PDCA105	OperatingSystem	04	70	30	03	4
<b>PracticalPaper</b>						
PDCA151	Office ManagementLab.	03	60	40	03	4
PDCA152	'C' ProgrammingLab.	03	60	40	03	4
PDCA153	Web AuthoringToolLab.	03	60	40	03	4
PDCA154	Networking Lab.	03	60	40	03	4
	<b>Total</b>	<b>32</b>	<b>590</b>	<b>310</b>	<b>27</b>	<b>36</b>

### SemesterII

<b>TheoryPaper</b>						
PDCA201	Data Base ManagementSystem	04	70	30	03	4
PDCA202	ObjectOrientedProgramming Concepts	04	70	30	03	4
PDCA203	Desktop Publishing	04	70	30	03	4
PDCA204	Tally	04	70	30	03	4
PDCA205	SystemAnalysisandDesign	04	70	30	03	4
<b>PracticalPaper</b>						
PDCA251	SQLLab	03	60	40	03	4
PDCA252	C++ Programming Lab.	03	60	40	03	4
PDCA253	Desktop Publishing Lab	03	60	40	03	4
PDCA254	TallyLab.	03	60	40	03	4
	<b>Total</b>	<b>32</b>	<b>590</b>	<b>310</b>	<b>27</b>	<b>36</b>

## PGDCASemester-I

### **PDCA101-ComputerFundamentals&OfficeTool**

#### **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: Acquire knowledge about the functions and uses of MS Word, Excel and PowerPoint.

CO5: Gain a solid understanding of the fundamental concepts of database management systems.

CO6: Comprehend the internet, its applications, and the importance of internet security.

#### **UNIT I**

**Introduction:** Computer: Definition, Generations, Structure of Computer System, Hardware/Software, Input and Output Devices, Memory: Definition, Types of Memory, Memory Hierarchy (Secondary Memory, Primary Memory, Cache Memory, Registers), Types of Computers (Analog, Digital, Hybrid, Mini, Micro, Mainframe, Super), Types of Software (System/Application/Utility), Translators (Interpreters/Compilers/Assemblers), WinZip Application, Antivirus.

#### **UNIT II**

##### **Word processing software–**

**MS Word 2007:** Features of MS Word, Tabs (Home, Insert, Page Layout, References, Mailings, Review, View, Design, Layout), Creating, Opening, Saving documents, Moving, Copying and Formatting Text, Header and Footer, Page Formatting, Find and Replace Text, Spell Checking and Grammar Checking, Insertion (Tables, Objects, Picture, File etc.), Word Art, Customizing MS Word, Designing Pages, Mail Merge, Macro, Track Changes

#### **UNIT III**

##### **Spreadsheet Software–**

**MS Excel 2007:** Spreadsheet terminology, Organization of the Worksheet Area, Entering Information, Conditional Formatting, Moving, Copying, Inserting, Deleting Rows and Columns, Formatting Worksheet, Printing Worksheet, Charts, Using date, time, Cell Reference, Using statistical, mathematical and financial functions, Data Validation, Filter

#### **UNIT IV**

**Database Management System– Ms Access 2007:** Creating and Editing tables, Entering Data into Database Tables, Viewing Records, Query, Forms and Reports.

**Presentation Software- MS PowerPoint 2007:** Anatomy of a powerpoint Presentation, Creating and Viewing a Presentation. Managing Slideshows, Navigating through a Presentation. Using Hyperlinks, Advanced Navigation with Action Setting and Action Buttons, Organizing Formats with Master, Applying and Modifying Designs, Insertion (Graphics, Multimedia, Animation)

#### **Reference Books:**

1. R.K. Taxali: PC Software for Windows Tata McGraw Hill.
2. Courtier: Mastering Office 2000, BPP Publications.

3. Bott&Leonard :UsingMicrosoftOffice2000, PrenticeHallof India
4. Leon,andLcon,SQL, Tata McGrawHill Pub. Co.Ltd.

# PDCA102-ProgrammingFundamentalsthrough‘C’

## COURSE OUTCOMES

- CO1: Understand the concept of Algorithms and different symbols used in flowcharts
- CO2: Develop conditional and iterative statements to write C programs.
- CO3: Utilize user-defined functions to solve real-time problems.
- CO4: Create C programs that utilize pointers to access arrays, strings, and functions.
- CO5: Apply user-defined data types, including structures and unions, to solve problems.
- CO6: Demonstrate the concept of file handling to showcase input and output operations in C programs.

### UNIT-I

Fundamentals of C: Programming Concepts, Algorithm & Flowchart, History and Importance of C, Basic Structure and Execution of C Programs, Constants, Variables, and Data Types, Operators, Operator Precedence and Associativity. Managing Input and Output Operations, Decision Making and Branching.

### UNIT-II

Iteration: while, do...while, for loop, nested loops, break & continue, goto statements.  
Arrays and Strings: One-dimensional arrays and their declaration and initialization, two-dimensional arrays and their initializations, string-handling functions.

### UNIT-III

Functions: Need and elements of user-defined functions, definition of functions, return values and their types, function calls and declaration, recursion, parameter passing, passing arrays and strings to functions, the scope, visibility and life time of variables.  
Understanding Pointers: Accessing the address of a variable, declaration and initialization of pointer variables, accessing a variable through its pointer, pointers and arrays, functions returning pointers.

### UNIT -IV

Structures and Unions: Defining structure, declaring structure variable and accessing structure members, initialization of structure, structures of arrays, union, sizeof structure. I/O in C: Formatted and Un-formatted I/O, File handling.

### Reference Books:

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



# PDCA103-WebDevelopment Tools

## COURSE OUTCOMES

CO1: Understand the fundamentals of Internet, and the principles of web design.

CO2: Able to construct websites using HTML and Cascading Style Sheets.

CO3: Able to build dynamic web pages with validation using Java Script objects

CO4: Implement the event handling mechanisms.

### UNIT-I

**InternetBasics:** Basic concepts, communication on the internet, internet domains, internet server identities, establishing connectivity on the internet, client IP address, a brief overview of TCP/IP and its services, transmission control protocol, web server, web client, domain registration.

**Introduction to HTML:** HTML, HTML tags, commonly used HTML commands, text formatting, text style, lists, adding graphics to HTML documents, tables, linking documents, frames, Forms, Image Maps.

### UNIT-II

**Introduction to DHTML:** features of DHTML, CSS: Types of Stylesheets, Different elements of Stylesheets, Filter effects, IFrame, DIV and Layer Tags.

**Understanding XML:** SGML, XML, XML and HTML, modeling XML data.

### UNIT-III

**JavaScript:** JavaScript in web pages, advantages of JavaScript, advantages of JavaScript, data types and literals, type casting, JavaScript array, operators and expression, conditional checking, function, user defined function.

### UNIT-IV

**DOM Hierarchy:** Different objects of DOM (window, navigator, history, form, frames etc.), Form validation, Event handling in JavaScript.

### Reference Books:

1. M.L. Young: Complete Reference: Internet; 2nd Edition; Tata Mc Graw Hill, 2006.
2. Thomas A. Powell; Web Design: C.R.; Second Edition; TMH, 2009.
3. Thomas A. Powell; 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.

# PDCA104-NetworkingTechnologies

## COURSE OUTCOMES

- CO1: Able to understand network communication using the layered concept, Open System Interconnect (OSI) and TCP/IP Model.
- CO2: Understand various types of transmission media, network devices; and parameters of evaluation of performance for each media and device.
- CO3: Understand the concept of flow control, error control and LAN protocols
- CO4: Understand the working principles of LAN and the concepts behind physical and logical addressing, subnetting and supernetting.
- CO5: Understand the functions performed by a Network Management System and to analyze connection establishment and congestion control with respect to TCP Protocol.
- CO6: Able to understand the principles and operations behind various application layer protocols like HTTP, SMTP, FTP.

## UNIT I

NetworkCommunicationModel-

Networkarchitecture,configuringnetwork,networkstrategies,networkstypes,LAN, MANand WAN,IntroductiontoMaliciousSoftware,Networksecurity(Virus,Wormsetc).

## UNIT II

IntroductiontoOSImodel-

Thephysicallayer(bandwidthlimitedsignals,transmissionmedia,wirelesstransmission),thedatalinklayer, errordetectionandcorrection,

## UNIT III

Datalinkprotocols,themediumaccesssublayer,thechannelallocationproblem,multipleaccessprotocol,thetransportlayer,theapplicationlayer,Bridgeandfunctionalityofbridges,Routers,Gateways,conceptofIPaddressingwithclassstructure.

## UNIT IV

IntroductiontoTCP/IP[UnderstandtheTCP/IPProtocolSuite,itshistoryandmodificationprocessescompareTCP/IPtoOpenSystemsInterconnection(OSI)referencemodel,ExamineanumberofTCP/IPapplicationssuchasFTP,Telnet, DNS,DHCPetc.

## ReferenceBooks

1. AndrewS.Tanenbaum,ComputerNetworks,PrenticeHall
2. BehrouzAforouzan,TCP/IP,TataMcGrawHillPub.Co.
3. DECornerand DL Stevens,InternetnetworkingwithTCP/IPVolumel-III, PrenticeHallofIndia.
4. Wrightand Stevens,TCP/IPIllustrated,PearsonEducationAsia.
5. KaranjitS. Siyan,InsideTCP/IP,Techmedia.
6. D.Bertsellasand R. Gallager,“DataNetworks”,2ndEdition,PrenticeHall,1992.

# PDCA105-OperatingSystem

## COURSE OUTCOMES

CO1: Analyze various scheduling algorithms.

CO2: Understand deadlock, prevention and avoidance algorithms.

CO3: Compare and contrast various memory management schemes.

CO4: Understand the deadlock and functionality of file systems.

CO5: Understand the Open source operating system and Mass-Storage Structure.

## UNIT-I

Introduction to Operating System: Evolution of operating system, characteristics, types of operating system, function of operating system, concepts of process and files, system calls.

Process Management: Process concept, process scheduling, process states. CPU scheduling: Types of schedulers, scheduling algorithms.

## UNIT-II

Memory management: Logical and

Physical address space, swapping, Contiguous allocating, multiple partitions, fragmentation compaction, paging, segmentation, Virtual memory management, demand paging, page replacement algorithms.

## UNIT-III

Deadlock: The deadlock problem, characterization prevention, avoidance detection and recovery from deadlock, process concurrency concept, precedence graph. Critical section problem, Semaphores and Interprocess Communication.

File-System: File concept, access methods, directory structure, protection. File-system structure. Directory implementation, allocation methods, free-space management.

## UNIT-IV

Mass-Storage Structure: Disk structure, disk scheduling, disk management, swap-space management. Security and Protection: Goals of protection, domain of protection, access matrix, implementation of access matrix; revocation of access rights.

## Reference Books:

1. James L. Peterson & A. Silberschatz: Operating System Concepts.
2. Andrew S. Tenenbaum: Modern Operating Systems; Prentice Hall, India.
3. Systems Programming & Operating Systems, 2nd Edn., Tata Mc Graw Hill.
4. Operating System by Achyut Godbole.
5. Operating System by Galvin.

## **PDCA151:OfficeManagementLab.**

### **COURSE OUTCOMES**

CO1: Able to use MS Office (word processor, spreadsheet and power point) professionally.

CO2: Develop understanding about the writing of effective business letters in computer through word processing.

CO3: Able to use spreadsheet program for business data processing.

CO4: Acquire skills for development and presentation of power point report.

**SyllabusofPracticalabisaccordingtothetopicsmentionedinthetheorysubject and lab exercises to be framed accordingly.**

## **PDCA152:‘C’ ProgrammingLab.**

### **COURSE OUTCOMES**

CO1: Develop a C program based on a given task or algorithm.

CO2: Read, comprehend, and trace the execution of C programs.

CO3: Implement C programs using arrays, pointers, decision-making statements, and looping statements.

CO4: Write programs that perform operations utilizing derived data types.

CO5: Develop and implement modular applications in C by effectively utilizing functions.

CO6: Develop applications in C that leverage structures and pointers.

**SyllabusofPracticalabisaccordingtothetopicsmentionedinthetheorysubject and lab exercises to be framed accordingly.**

## **PDCA153:WebAuthoringToolLab.**

### **COURSE OUTCOMES**

CO1: Creating webpages using basic HTML tags

CO2: Styling Webpages using CSS

CO3: Creating dynamic web pages using Javascript

CO4: Implementation of DOM objects

CO5: Creating web pages implementing event handling, form Validation etc.

**SyllabusofPracticalabisaccordingtothetopicsmentionedinthetheorysubject and lab exercises to be framed accordingly.**

## **PDCA154:NetworkingLab.**

### **COURSE OUTCOMES**

CO1: To understand the working principle of various communication protocols.

CO2: To analyze the various routing algorithms.

CO3: To know the concept of data transfer between nodes.

CO4: Design and configure an Ethernet LAN with VLANs.

**Syllabus of Practical lab is according to the topics mentioned in the theory subject and lab exercises to be framed accordingly.**

# PGDCASemester-II

## PDCA201-DataBaseManagementSystem

### COURSE OUTCOMES

CO1: Gain a solid understanding of the fundamental concepts of database management systems, including data models, data independence, database architecture, and components.

CO2: Learn the principles and techniques involved in relational database management systems.

CO3: Ability to transform user requirements into efficient and well-structured database schemas.

CO4: Develop proficiency in SQL

### UNIT-I

DatabaseSystemConcepts&Architecture:Overviewof DBMS,BasicDBMSterminology, data basesystemv/sfilesystem, data independence.Architectureofa DBMS,Schemas,Instances,DatabaseLanguages,DatabaseAdministrator,DataModels.

### UNIT-II

DataModeling:Datamodelingusingthe EntityRelationshipModel:ERmodelconcepts,notationfor ERdiagram,mappingconstraints,keys,ConceptsofSuperKey,candidatekey,primarykey,Generalization,aggregation.

RelationalAlgebra:Fundamentaloperations of relationalalgebra&theirimplementation,interdependenceofoperations.

### UNIT -III

DatabaseDesign:Functionaldependencies,nonlossdecomposition,1st,2nd&3rdnormalforms,dependencypreservation,boycecoddNF.

Transactions:Schedules,serializability,precedencegraph,concurrencycontroltechniques.

### UNIT-IV

IntroductiontoSQL:CharacteristicsofSQL,Advantages of SQL,SQLdatatypesand literals,Typesof SQLcommands,SQLoperatorsand theirprocedure,Tables,viewsandindexes,Queries and subqueries,Aggregatefunctions,insert,update anddeleteoperations,Joins,Unions,Intersection,Minusin SQL.

### ReferenceBooks:

1. Fundamentalof DatabaseSystems byR.Elmasri;S.Navate;BenjaminCummings.
2. Introductiontodatabasesystems byC. J.Date.
3. DatabaseSystemConcepts-AbrahamSilberschat, HenryF. Korth,S.Sudarshan,TataMcGrawHill.
4. Principlesof DatabaseManagementbyJamesMartin.
5. DatabaseManagementSystems byBipinDesai.

# PDCA202-ObjectorientedProgrammingConcepts

## COURSE OUTCOMES

CO1: Understand the concepts of OOPs

CO2: Understand the use of constructors, destructors and functions

CO3: Create programs based on arrays and Strings

CO4: Implementation of polymorphism, inheritance, exception handling

CO5: Understand the concept of file management

## UNIT-I

IntroductiontoObjectOrientedConcepts:EvolutionofOOP,OOPParadigm, advantages ofOOP,comparisonbetweenfunctionalprogrammingand OOPapproach,characteristicsof objectorientedlanguage

– objects,classes,inheritance,reusability, user

defineddatatypes,polymorphism,overloading.IntroductiontoC++:C++tokens,datatypes,C++operators,typeconversion,variabledeclaration,arrays,statements,expressions,conditionalstatements,Jumpingstatements,loops,functions,pointers,structures.

## UNIT-II

ClassesandObjects:Classes,objects,definingmemberfunctions,arrays

ofclassobjects,pointersandclasses,passingobjects,constructors,typesofconstructors,destructors,thispointer,accessspecifiers,friendfunctions.

## UNIT-III

Inheritance:Introduction,types of inheritance,ImportanceofInheritance,Constructor and Destructor in derivedclasses,typesof baseclasses,multipleinheritances.

Polymorphism:Functionoverloading,operatoroverloading,virtualfunctions,purevirtualfunctions

## UNIT-IV

FileManagement:HandlingDatafiles(sequentialandrandom),Openingand closingof files,streamstatememberfunctions.

Templates,ExceptionHandling

## ReferenceBooks:

1. RobertLafore;ObjectOrientedProgrammingin C++; 4th Edition;Techmedia.
2. BalagurusamyE.; ObjectOrientedProgrammingC++; 4th Edition;TMH, 2009.
3. Venugopal,Rajkumar;MasteringC++; TataMcgrowHill,2006.
4. KanetkarY.;LETUSC++;BPB;2009.
5. DeitelandDeitel:Howto ProgramC++,addisonWesley, Pearson EducationAsia.
6. JohnR.Hubbard,Programming withC++,McGrawHillInternational.

# PDCA203-DesktopPublishing(DTP)

## COURSE OUTCOMES

CO1: Understand the fundamentals & concepts of Adobe Photoshop

CO2: Get a hands-on experience on PageMaker

CO3: Able to work with multiple layers

CO4: Understand the basic tools of CoralDraw

### UNIT I

#### PageMaker-

Creating a New Document: -Setting the Margins, Setting the Page Size, Changing the Page Orientation, Setting the Page Numbers, Changing the Pagesize view, Displaying Rulers, Changing the Rulers Measurement System, Using Rulers, Using Guides, Adding Guidelines to Master Pages, Aligning to Guidelines, Displaying Guidelines, Locking Guidelines.

Entering Text: -Changing the

font Families, Changing font size, Changing typeface styles, Changing Character Specifications, Changing type leading, Changing character width, Changing tracking.

Saving your document: -Saving a new document, Saving Existing Document, Saving a document as another document, Reverting to a previously saved version.

Developing a Paragraph: -Typing a text, Adding special character to text, Aligning text.

Formatting Paragraph: -Changing

Indents, Changing the Space around paragraph, Changing Paragraph Alignment, Controlling How paragraphs break between pages and columns, Adding lines above or below your paragraph.

Creating a Frame: -Converting other objects to

Frames, Selecting text & Dragging Text, Editing Text, Cutting, copying and Pasting Text, Using Undo & revert.

Inserting & removing pages Adjusting H

phenation

Adjusting Indents and Tabs: -Setting and Changing Tabs, Setting and Changing Indents, Settings the Leader Style, Resetting the Tab Ruler.

### UNIT II

#### PageMaker-

Adding Shapes

Changing lines and fill specifications, Changing Round Corner, Creating Header & Footer

Defining Style: -Creating a new style, Editing a

style, Removing Style, Copying style, Applying style to text, Changing style.

Developing a

long Document: -

Using Story Editor, Switch between story editor and layout editor, Closing the story editor and placing the story, Checking your spelling, Using find feature.

Using Color: -Opening a color palette, Adding color to text, Defining a custom colors. Printing: -

Printing your document, Printing a proof copies, Setting paper options.

### UNIT III

#### Photoshop-

Introduction of Photoshop

Creating a New File: -Main Selections, Picking color, Filling a selection with color, More ways to choose colors and fill selections, Painting with paintbrush tool, Using the magic wand tool and applying a filter, Saving your document.

Color Mode: -Gray Scale Color Mode, RGB Color Mode, CMYK Color Mode, Bitmap Mode, Open a file, Preference.



Foreground&background:- ChangingForeground andBackgroundcolors,Usingthe LargecolorselectionBoxesandsmallcolorswathes,Usingthe Eyedropper tooltosampleImage color,Changingthe ForegroundColorWhileusinga PaintingTool.

UsingBrushes:-MillionsofBrushesin One,Selectingthe BrushShape,Drawing a verticaland HorizontalStraightlineswith anybrush,DrawingconnectingStraightLines (atanyangle)withanybrush, CreatingaNewBrush,SavingBrushes,LoadingBrushes,Creatinga CustomBrushes,Usingthe PaintingModes,Fade,AirbrushOptions,PencilOptions.

RubberStampOptions:-Rubberstamps an AlignedClone,Rubber Stamping,ImpressionistStyle,Usinglinetool.

Usingthe EditingTool:-The Smudge Tool,TheBlurand SharpenTool,The Dodge /BurnTool,Shadows,Mid-tonesand Highlights.

SelectionTools:-MakingRectangularand SquareSelections,Featheringa Selections,LassoFeatures,LassoOptions,Makingselectionsbycolor orGrayScale valueusingtheMagicWand,Movingan anchorpointorDirectionpointtochangetheshapeofcurve, Addingand RemovingAnchorpoints,MovingPath, Saving,Loadingand CreatingNewPath, Filling&StrokingPath.

## **UNIT IV**

### **Photoshop-**

Introductionoflayers:-Creating&editingnew layers, addinga background.CreatingLayerMask:-LayerMasks,AdjustmentLayers.

AddingFillsandGradients: -Fillingwithpaintbuckettools,fillingtype with gradingfills.

ApplyingFilters:-BlurFilters,RenderFilters,SharpenFilters,SketchFilters,TextureFilters,OtherSpecialFilters

Printingyourdocument,saveyourfile:-Save filesas aJPEG,TIFF,GIF,PNG.

### **Coraldraw-**

Introductiontocoral draw,use andimportancein designing,variousgraphicfileandfileextension,vectorimage an rasterimages,introductionto screenandworkarea.

Introductiontotoolofcoraldraw,

managingpalettes,workingwithimages,patternsandtextures,workingwithshapes,colorsandfills,imagerasterizat ionand editing,transformationmenu.

Coraldrawfilesandsupportingdocuments,importantexportoffilesandfileformats,pagesetup andesigning,usingstylesandtemplates,workingwithtext,formattingtext,textattributes.

Designingdifferentpagelayouts,columnlayout,workingwithlayers,specialeffecttoobjectsandtexts,contourtool,l ayoutfornewspaper and magazines.

Preparationof visitingcardand invitationcards,ShapingDockers and logodesign,introductionbrochureandbooks,introductionto magazinedeigning.

### **ReferenceBooks**

1. CompleteReferenceofPage Maker-TataMcGrawHill
2. DTPPublishingMintPageMaker– SpringerPubication.
3. Photoshopin EasySteps-TataMcGrawHill
4. CoralDraw an OfficialGuide-TataMcGrawHill
5. CavgageLearning-BringitHome with CoralDraw
6. CoralDrawinSimpleSteps-WileyPublication

# PDCA204-TALLY

## COURSE OUTCOMES

CO1: Acquire basic understanding of company creations, balance sheets, P/L statements, cash books, accounting procedures through computerized accounting software

CO2: Understanding the accounting transactions in computerized format and find the financial result of a concern.

CO3: Acquire the skill of financial decision making in a systemized manner.

CO4: Interpret financial statements as well as evaluation of stock at the end

## UNIT I

Introduction about Key Strokes, Students Tally Versions, Faculty Business Organization: Service org., Trading org., Manufacturing org.

Accounting Principles, Concepts & Convention, Definition, Types of concepts, Types of Conventions

Transactions: Types of accounts, golden rules. Types of Journal Book, Accounting voucher in Tally. Compound Journal Entry

Mode of Accounting: Posting, Trial balance

Financial Statement: Trading & P/L A/C. Balance Sheet, Processing Transaction in Tally

## UNIT II

Accounting with Tally: Accounting Basics, Understanding Ledgers & Groups, Understanding Voucher Types, Entering: Sales & Purchase, Payments & Receipts, Contra & Adjustments, Debit & Credit Notes. Reports: Printing – Exporting – Mailing, Bank Reconciliation & Printing Cheque.

## UNIT III

Inventory Management with Tally: Entering Inventory Details, Items with Groups & Categories, Multi Location Stock, Stock Transfer & Manufacturing, Purchase & Sales Order, Costing: Cost Centers & Categories, Job Costing, Item Costing, Purchase Costing, Job Work, Using Batch wise Details Batch/Lot Number, Manufacturing & Expiry Dates. Multiple Price Levels.

## UNIT IV

Taxation with Tally:

Value Added Tax (VAT), Central Sales Tax, Manufacturer Excise, Dealer Excise, Service Tax, TDS, Payroll, Special Features: Multi Currency, Interest Calculation, Budgets & Controls.

## Reference Books

1. Tally ERP9 Series A reference Manual
2. Tally ERP9 – Dematech Press Easy & Simple

# PDCA205-System Analysis and Design

## COURSE OUTCOMES

CO1: Understand the principles and tools of systems analysis and design

CO2: Understand the professional and ethical responsibilities of practicing the computer professional including understanding the need for quality

CO3: Solve a wide range of problems related to the analysis, design and construction of information systems

CO4: Analysis and Design of systems of small sizes

## UNIT I

System Concept: Definition, Characteristics of System, Elements of System, Types of System (Physical and Abstract System, Open and Closed System), System Development Life Cycle, Considerations for System Planning and Control for System Success.

## UNIT II

Initial Investigation: Determining Users Requirements and Analysis, Fact Finding Process and Techniques. Feasibility Study: Determination of Feasibility Study, Technical, Operational & Economic Feasibilities, Cost and Benefit Analysis.

## UNIT III

Information Gathering: need, Information about the firms, Information gathering tools, Interviewing, Arranging the Interview, Types of Interviews and Questionnaires, The Structured and Unstructured Alternatives. Tools of Structured Analysis: Data Dictionary, Gantt Charts, System Model, Pseudo Codes, Flow Chart, Data Flow Diagram, Decision Tree, Decision Tables.

## UNIT IV

System Testing: Testing Strategies (Unit Testing, Integration Testing, Validation Testing, System Testing), Testing Techniques (Black-Box, White-Box), Quality Assurance. System Security: Data Security, Disaster/Recovery, Threat and Risk Analysis. Organization of EDP: Introduction, Job Responsibilities & duties of EDP Personnel's - EDP manager, Programmers, and Operator etc. Essential features in EDP.

## Reference Books

1. Igor Hawryszkiewycz, Introduction to System Analysis and Design, 4th edition, Prentice-Hall.
2. Jeffrey L. Whitten, and Lonnie D. Bentley, Systems analysis and Design Methods 4th edition, Tata McGraw-Hill.
3. Philip L Weaver, Practical SSADM Wer 4+A Complete Tutorial Guider, Pitman publishing, 1995.
4. Mark Lejk, and David Deeks, an Introduction to System Analysis Techniques Prentice Hall.
5. Don Yeates, Maura Shields and David Helmy, System Analysis and Design Longman group limited, 1994.

## **PDCA251: SQLLab.**

### **COURSE OUTCOMES**

CO1: Understand Oracle environment to run queries

CO2: Run SQL queries to retrieve data from single or multiple tables based on various conditions

CO3: Create, Modify and delete tables with constraints

CO4: Execute Update, commit and rollback commands

**Syllabus of Practical lab is according to the topics mentioned in the theory subject and lab exercises to be framed accordingly.**

## **PDCA252:C++ProgrammingLab.**

### **COURSE OUTCOMES**

CO1: Implement various programming constructs of C++

CO2: Create classes and objects

CO3: Implement polymorphism and inheritance with classes and objects

CO4: Understand concept of virtual classes and exception handling

**Syllabus of Practical lab is according to the topics mentioned in the theory subject and lab exercises to be framed accordingly.**

## **PDCA253:DesktopPublishingLab.**

### **COURSE OUTCOMES**

CO1: Acquiring a new perspective on Printing

CO2: Improving and extending the range of Publishing

CO3: To give students the skills to create book works, building booklets

CO4: Building skills to create business cards, pamphlets, banners, calendars, logos etc.

**Syllabus of Practical lab is according to the topics mentioned in the theory subject and lab exercises to be framed accordingly.**

## **PDCA254:TallyLab.**

### **COURSE OUTCOMES**

CO1: Practical knowledge of Companies creations

CO2: Creation and posting of vouchers cash books, balance sheets, PnL Statements working knowledge of current taxation system including GST

CO3: Do reconcile bank statement, do accrual adjustments, and also print financial statements, etc.

**Syllabus of Practical lab is according to the topics mentioned in the theory subject and lab exercises to be framed accordingly.**

