

FACULTY OF COMPUTER SCIENCE & IT

SYLLABUS FOR

Post Graduate Diploma in Computer Applications

(Semester I-II)

(Under Continuous Evaluation System)

Session: 2021-22



The Heritage Institution

**KANYA MAHA VIDYALAYA
JALANDHAR
(Autonomous)**

Post Graduate Diploma in Computer Applications

(Session 2021-22)

PROGRAMME SPECIFIC OUTCOMES

Upon successful completion of Post Graduate Diploma in Computer Applications course, the students will be able to:

PSO1: Get familiar with computer fundamentals and able to work with office automation software.

PSO2: Perform various DTP (Desktop Publishing) applications like CorelDraw and Photoshop to design banners/logos and also use these skills in photo editing.

PSO3: Comprehend different types of Operating Systems, networking and scripting language concepts.

KANYA MAHA VIDYALAYA, JALANDHAR (AUTONOMOUS)

SCHEME AND CURRICULUM OF EXAMINATIONS OF ONE YEAR POST GRADUATE DIPLOMA PROGRAMME

Post Graduate Diploma in Computer Applications

Session 2021-22

Post Graduate Diploma in Computer Applications Semester - I							
COURSE CODE	COURSE NAME	Course Type	Marks				Examination Time (in Hours)
			Total	Ext.		CA	
				L	P		
PCAM-1111	PC Computing-I (Back Office Operations)	C	100	50	30	20	3+3
PCAM-1112	PC Computing-II (Professional DTP)	C	100	50	30	20	3+3
PCAM-1113	Fundamentals of Computer and Operating System	C	100	50	30	20	3+3
PCAM-1114	Multimedia Systems	C	100	50	30	20	3+3
	Total		400				

Note:

C - Compulsory

KANYA MAHA VIDYALAYA, JALANDHAR (AUTONOMOUS)

SCHEME AND CURRICULUM OF EXAMINATIONS OF ONE YEAR POST GRADUATE DIPLOMA PROGRAMME

Post Graduate Diploma in Computer Applications

Session 2021-22

Post Graduate Diploma in Computer Applications Semester - II							
COURSE CODE	COURSE NAME	Course Type	Marks				Examination Time (in Hours)
			Total	Ext.		CA	
				L	P		
PCAM-2111	Network Concepts and Management	C	100	50	30	20	3+3
PCAM-2112	Programming in C	C	100	50	30	20	3+3
PCAM-2113	Introduction to Scripting Languages and Web Designing	C	100	50	30	20	3+3
PCAM-2114	Database Management System	C	100	50	30	20	3+3
	Total		400				

Note:

C - Compulsory

Post Graduate Diploma in Computer Applications Semester – I

Session 2021-22

COURSE CODE: PCAM–1111

PC COMPUTING-I

(BACK OFFICE OPERATIONS)

Course Outcomes:

After passing this course the student will be able to:

CO1: Work on Spreadsheet application for office tasks.

CO2: Create effective presentations, can apply designs to enhance the look of the presentation, print a presentation.

CO3: Understand Word Processor, Create, Edit and Format documents, Work with Tables, Import and Export data between Files, Save, Protect and Print documents.

Post Graduate Diploma in Computer Applications Semester – I

Session 2021-22

COURSE CODE: PCAM–1111

PC COMPUTING-I

(BACK OFFICE OPERATIONS)

Examination Time: (3+3) Hrs.

Max. Marks: 100

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT I

Word Processing: Introduction to word processing & its features, parts of window of word processing (Title bar, menu bar, status bar, and ruler), understanding the ribbon, use of office button and quick access toolbar, creation of new documents, opening document, insert a document into another document. Page setup, margins, gutters, font properties, alignment, page breaks, header & footer, deleting, moving, replace, editing text in document, saving a document, spell checker, printing a document.

UNIT II

Word Processing: Creating a table, entering and editing text in tables, changing format of table, height and width of row/column editing, adding and deleting rows/columns. Adding picture, page colors and watermarks, borders, shading, drawing objects.

Presentation: Introduction to presentation, exploring menus, starting a new slide, saving presentation, moving/rearranging slides, printing slides.

UNIT III

Presentation: Applying theme to presentation, views (slide view, slide sorter, notes view, outline view), formatting & enhancing text. Creating a graph, displaying slide show, adding multimedia. Slide transitions, applying Animation, Timing slide display, adding movies & sounds, using a pick look wizards to change format.

UNIT IV

Spreadsheet: Introduction to worksheet/spreadsheet, features, creating a new workbook, different functions on different data in excel, creation of graphs, editing it and formatting, changing chart type to 2D chart or 3D chart, pivot table, creation of worksheet, adding, deleting, moving the text in worksheet, linking different sheets, sorting the data, querying the data, filtering the data (auto and advance filters), What-if analysis, open an already existing workbook, saving workbook, printing a worksheet, closing the workbook & exiting.

References/Textbooks:

1. *Anshuman Sharma, A book of Fundamentals of Information Technology, Lakhanpal Publishers, 5th Edition.*
2. *Prof. Satish Jain, M. Geetha, Kratika, BPB's Office 2010 Course Complete Book, BPB Publications, 2017.*
3. *Joyce Cox, Joan Lambert and Curtis Frye, Microsoft office Professional 2010 Step by Step, Microsoft Press, 2010.*
4. *V. Rajaraman, Neeharika Adabala, Fundamentals of Computers, PHI Learning, 2015.*
5. *P.K. Sinha, Computer Fundamentals, BPB Publications, 2004.*

Note: The latest editions of the books should be followed.

Post Graduate Diploma in Computer Applications Semester – I

Session 2021-22

COURSE CODE: PCAM–1112

PC COMPUTING–II

(PROFESSIONAL DTP)

Course Outcomes:

After passing this course the student will be able to:

CO1: understand the raster and vector graphics, image Resolution, menu and various palettes, concept of path and dimensions.

CO2: use simple graphic design tools and techniques like Masks and Histogram, Acquiring and Importing Images, concept of layer Channels and Path, Filters, Rendering Effects, Transformation, Strokes, Image Modes, Canvas and Images, using Navigator and Photoshop Plugins.

CO3: work on Corel Draw, Vector Graphics, Color Palette and Pasteboard.

Post Graduate Diploma in Computer Applications Semester – I

Session 2021-22

COURSE CODE: PCAM–1112

PC COMPUTING–II

(PROFESSIONAL DTP)

Examination Time: (3+3) Hrs.

Max. Marks: 100

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section

UNIT I

Photoshop: Introduction to Graphics, Vector Graphics and Bitmaps, Understanding Image Size and Resolution, Using Menu and Palettes.

Photoshop Tools: Marquee Tool , Move Tool , Lasso Tool (Polygon, Magnetic, Magic Wand Tool), Crop Tool ,Healing Brush Tool ,Patch Tool, Brush Tool, Pencil Tool, Clone Stamp Tool, Pattern Stamp Tool, History Brush Tool, Art History Brush, Eraser Tool (Background, Magic Erases Tool), Gradient Tool , Blur Tool , Smudge tool, Sharpen Tool, Dodge Tool ,Burn tool, Sponge tool Path Selection Tool , Text Type Tool , Pen Tool ,Rectangle Tool , Eyedropper Tool, Hand Tool, Zoom Tool.

UNIT II

Color Modes (Grayscale, RGB, CMYK), Channels and Paths (Creating Paths via Selections, via Pen Tools), Concept of Layers, Creating/ Adding Layers, Duplicating Layer, Deleting Layer, Layers Palette Menu, Quick & Layer Mask and Histogram.

Filters, Transformation (Scaling, Rotating, Skewing, Distorting, Perspective, Flipping, Absolute, Free Transform).

UNIT III

Corel Draw: Exploring CorelDraw, Menu, Ruler Bars, Gridlines and Guidelines

Corel Tools (Pick Tool, Zoom Tool, Pan Tool, Rectangle Tool, Ellipse Tool Polygon Tool, Spiral, Graph Paper Tool, Shapes Tool, eraser tool, Free hand, Bezier, artistic Media Tool, Pen Tool)

UNIT IV

Grouping/Ungrouping Objects, Locking/Unlocking Objects, Trimming, Welding, Intersection of Objects, Working with text, Fill Tool (Uniform, Fountain, Pattern, Texture, Postscript) Special Effects (Interactive blend tool, Contour Tool Distortion, Envelope, Extrude, Drop Shadow tool, Transparency Tool), Transformations (Position, Rotate, Scale, Size, Mirror).

References/Textbooks:

1. *Kogent Learning Solutions Inc., CorelDraw X7 in Simple Steps, Dreamtech Press, 2014.*
2. *Steve Caplin, How To Cheat In Photoshop CC: The Art of Creating Realistic Photomontages by Routledge, 2013.*
3. *Lisa DaNae Dayley, Brad Dayley, Adobe Photoshop CC Bible, Wiley, 2013.*
4. *Manohar Singh, Jaspreet Thind, Tejinder Thind, Uminder Kaur, PC Computing II Photoshop 5.5 & Corel Draw 10 Professional DTP, AP Publishers, 2008.*

Note: The latest editions of the books should be followed.

Post Graduate Diploma in Computer Applications Semester – I

Session 2021-22

COURSE CODE: PCAM–1112

PC COMPUTING–II

(PROFESSIONAL DTP)

Examination Time: (3+3) Hrs.

Max. Marks: 100

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

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UNIT I

Photoshop: Introduction to Graphics, Vector Graphics and Bitmaps, Understanding Image Size and Resolution, Using Menu and Palettes.

Photoshop Tools: Marquee Tool , Move Tool , Lasso Tool (Polygon, Magnetic, Magic Wand Tool), Crop Tool ,Healing Brush Tool ,Patch Tool, Brush Tool, Pencil Tool, Clone Stamp Tool, Pattern Stamp Tool, History Brush Tool, Art History Brush, Eraser Tool (Background, Magic Erases Tool), Gradient Tool , Blur Tool , Smudge tool, Sharpen Tool, Dodge Tool ,Burn tool, Sponge tool Path Selection Tool , Text Type Tool , Pen Tool ,Rectangle Tool , Eyedropper Tool, Hand Tool, Zoom Tool.

UNIT II

Color Modes (Grayscale, RGB, CMYK), Channels and Paths (Creating Paths via Selections, via Pen Tools), Concept of Layers, Creating/ Adding Layers, Duplicating Layer, Deleting Layer, Layers Palette Menu, Quick & Layer Mask and Histogram.

Filters, Transformation (Scaling, Rotating, Skewing, Distorting, Perspective, Flipping, Absolute, Free Transform).

UNIT III

Corel Draw: Exploring CorelDraw, Menu, Ruler Bars, Gridlines and Guidelines

Corel Tools (Pick Tool, Zoom Tool, Pan Tool, Rectangle Tool, Ellipse Tool Polygon Tool, Spiral, Graph Paper Tool, Shapes Tool, eraser tool, Free hand, Bezier, artistic Media Tool, Pen Tool)

UNIT IV

Grouping/Ungrouping Objects, Locking/Unlocking Objects, Trimming, Welding, Intersection of Objects, Working with text, Fill Tool (Uniform, Fountain, Pattern, Texture, Postscript) Special Effects (Interactive blend tool, Contour Tool Distortion, Envelope, Extrude, Drop Shadow tool, Transparency Tool), Transformations (Position, Rotate, Scale, Size, Mirror).

References/Textbooks:

5. *Kogent Learning Solutions Inc., CorelDraw X7 in Simple Steps, Dreamtech Press, 2014.*
6. *Steve Caplin, How To Cheat In Photoshop CC: The Art of Creating Realistic Photomontages by Routledge, 2013.*
7. *Lisa DaNae Dayley, Brad Dayley, Adobe Photoshop CC Bible, Wiley, 2013.*
8. *Manohar Singh, Jaspreet Thind, Tejinder Thind, Uminder Kaur, PC Computing II Photoshop 5.5 & Corel Draw 10 Professional DTP, AP Publishers, 2008.*

Note: The latest editions of the books should be followed.

Post Graduate Diploma in Computer Applications Semester – I

Session 2021-22

COURSE CODE: PCAM-1113

FUNDAMENTALS OF COMPUTER AND OPERATING SYSTEMS

Course Outcomes:

After passing this course the student will be able to:

CO1: understand the basic components and functional units of a computer system.

CO2: create folder, shortcuts and manage files in Windows.

CO3: learn fundamentals of disk operation system, DOS structure and DOS commands.

Post Graduate Diploma in Computer Applications Semester – I

Session 2021-22

COURSE CODE: PCAM–1113

FUNDAMENTALS OF COMPUTER AND OPERATING SYSTEMS

Examination Time: (3+3) Hrs.

Max. Marks: 100

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section

UNIT I

Fundamentals of Computer: Introduction to computer, Applications of computer, Components of computers (Input unit, Output Unit, Memory Unit & CPU), Types of software, Translators (compiler, interpreter, assembler), Booting a System.

UNIT II

Input Devices: Keyboards, Mouse, Joystick, Track Ball, Light Pen & Data Scanning devices-scanner, OCR, OMR, MICR, Bar Code Reader, Card Reader)

Output Devices: Monitor, Printers (laser printer, dot matrix printer, ink jet printer)

Memories: Primary Memory (RAM & ROM) & Secondary Memory (Hard Disk, CD, DVD)

UNIT III

Introduction to Windows: Parts of window screen (Desktop, window, icons), start menu, Taskbar settings, application & document window, anatomy of a window (Title bar, minimize, maximize button, control box, scroll bars, scroll buttons, scroll boxes), Window explorer (expansion, collapsing of directory tree, copying, moving, deleting files, folder, creating folders), About desktop icons (recycle bin, my computer, network neighborhood, briefcase), folder, shortcut creation, setting of screen saver, color settings, changing window appearance.

UNIT IV

Disk Operating System: Meaning of operating system, its functions, batch systems, real systems, multi programming, multitasking, single, multi user systems. Define dos, Structure of Ms-Dos (description of booting files, steps to boot the system), hot & cold booting internal command (cls, dir, date, time, vol, ver, copy con, type, ren, del, md, rd, d, path, prompt), external commands edit, attrib, backup, restore, chkdsk, diskcopy, dskcomp, deltree, edit, format.

References/Textbooks:

1. *Anshuman Sharma, Fundamentals of Information Technology, Lakhanpal Publishers, 5th Edition.*
2. *Rachhpal Singh & Gurvinder Singh, PC Software, Kalyani Publisher, 2009.*
3. *Peter Norton, Peter Norton's Computing Fundamentals, McGraw-Hill Technology Education, 2006.*

Note: The latest editions of the books should be followed.

Post Graduate Diploma in Computer Applications Semester – I

Session 2021-22

**COURSE CODE: PCAM-1114
MULTIMEDIA SYSTEMS**

Course Outcomes:

After passing this course the student will be able to:

CO1: Understanding of Technical aspect of multimedia system

CO2: Understand various file format for audio, video and text media

CO3: Develop various multimedia system applicable in real time

CO4: Design interactive multimedia software

Post Graduate Diploma in Computer Applications Semester – I

Session 2021-22

**COURSE CODE: PCAM-1114
MULTIMEDIA SYSTEMS**

Examination Time: (3+3) Hrs.

Max. Marks: 100

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section

UNIT I

Introduction: Introduction to Multimedia, categorization (linear and non-linear), Elements, Hypertext, Hypermedia, Importance of Multimedia, Definition of Multimedia System, Characteristics, Features, applications

Different Media: Images (types of images-bitmapped & vectors, File types), Audio (Digitization, MIDI audio compression, file types), Video (File types), Text, Animation

UNIT II

Components of Multimedia System: Capture Devices, Storage Devices, Computer Systems, Display Devices, Hardware and software requirements.

Multimedia Databases: Introduction, Datatypes, Requirements, Issues and challenges, Application Area, Multimedia over the Network(s).

UNIT III

Integration of Different media using Editing Tool: Introduction to Premiere Pro, working with interface, Importing Media, Organizing Media Essentials of Video Editing, Working with clips and markers, Adding transitions.

UNIT IV

Editing Techniques: Advanced Editing Techniques, Putting Clips in Motion, Multi-Camera Editing, Editing and Mixing Audio, Sound Effects, Video Effects, Color Correction and Grading, Creating Titles, Managing the projects, Exporting Frames, Clips and Sequences.

References/Textbooks:

1. *Ze-Nian Li, Mark S. Drew, Jiangchuan Liu, Fundamentals of Multimedia, Springer, 2014.*
2. *Maxim Jago, Adobe Premiere Pro CC, Classroom in a book, Adobe, 2014.*
3. *https://en.wikipedia.org/wiki/Multimedia_database*

Note: The latest editions of the books should be followed.

Post Graduate Diploma in Computer Applications Semester – II

(Session 2021-22)

COURSE CODE: PCAM–2111

NETWORK CONCEPTS AND MANAGEMENT

Course Outcomes:

After passing this course the student will be able to:

CO1: Comprehend issues in design of a network.

CO2: Comprehend working of different networking devices, their application areas and network security.

CO3: Perform actions related to management of account, group policies, administration privileges, etc.

CO4: Comprehend the basics of Linux and UNIX Operating System.

Post Graduate Diploma in Computer Applications Semester – II

(Session 2021-22)

COURSE CODE: PCAM–2111

NETWORK CONCEPTS AND MANAGEMENT

Examination Time: (3+3) Hrs.

Max. Marks: 100

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section

UNIT I

Introduction: Basic concepts of Computer Networks, Network Hardware and Software requirement, Network topologies, Types of Networks (LAN, MAN, WAN), OSI Reference Model, TCP/IP Model Comparison and Critiques.

UNIT II

Internetworking Devices: Routers, Bridges, Repeaters, Gateways, Hub Switches, Routing Algorithms (Distance Vector, Link State).

Network Security: Data compression techniques, cryptography, IP addressing schemes

UNIT III

Operating System: What is an Operating System, Types of Operating Systems (Single User Systems, Multi User Systems)

Introduction to Unix: Explain the features of Unix system. Structure of Unix (Kernel, Shell), Unix file system (data blocks, list, superblock, boot block), Types of files (ordinary files, directory, special files), Types of shells, Login & logout of unix session.

UNIT IV

Commands: Simple commands (cat, ls, chmod, mail, who, whoami, cal, pwd, date, ps, mkdir, cd, rmdir, rm, tput clear).

Piping, filters, batch processing, shell programming (Echo, read, case constructs). VI Editor (opening it, inserting, modifying, deleting, saving files).

References/Textbooks:

1. *Behrouz A. Forouzan, Data Communications & Networking, McGraw-Hill Education (2012), 5th ed.*
2. *Andrew S. Tanenbaum, Computer Network, Prentice Hall (2010), 5th ed.*
3. *Abraham Silberschatz, Greg Gagne, Peter B. Galvin, Operating System Concepts, Wiley Publishers (2018), 10th ed.*
4. *Charles Crowley, Operating Systems: A Design Oriented Approach, Tata McGraw Hill (2001), 1st ed.*
5. *Anshuman Sharma, Fundamentals of Operating System, Lakhanpal Publishers (2016), 2nd ed.*

Post Graduate Diploma in Computer Applications Semester – II

(Session 2021-22)

COURSE CODE: PCAM–2112

PROGRAMMING IN C

Course Outcomes:

After passing this course the student will be able to:

CO1: Comprehend the working of various programming constructs involved in C Programming.

CO2: Design C program and control its sequence using various control statements.

CO3: Apply programming concepts to provide solution in different problem domains.

CO4: Apply basic level file handling functions.

Post Graduate Diploma in Computer Applications Semester – II

(Session 2021-22)

Course Code: PCAM–2112

PROGRAMMING IN C

Examination Time: (3+3) Hrs.

Max. Marks: 100

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section

UNIT I

Fundamentals of C: Introduction of C, Data Types, Operators, their precedence, expressions and their evaluation.

Input/Output Functions: Formatted I/O, Character I/O & String I/O Functions.

UNIT II

Control Structures: Taking decisions using if, if-else, switch constructs and Conditional Operator, Description of break and continue Statements. Performing loops using for, while, do-while Constructs.

Functions: Library Functions vs User-Defined Functions, Declaring (Prototyping) and defining User-Defined functions.

UNIT III

Functions: Ways of passing parameters to functions, Recursive functions, Storage Classes.

Arrays & String: Introduction to Arrays, Declaring arrays, initializing arrays, processing of arrays, passing arrays arguments to functions, Strings, handling string in C, string functions, arrays of string.

UNIT IV

Pointers: Introduction to Pointers, Declaring pointers, accessing values via pointers.

Structure and Unions: Introduction to structure, declaring variables of structure type, initializing structures. Accessing Structure Elements, Introduction to Union, Declaring a Union, Accessing elements of a type union.

References/Textbooks:

1. *E. Balagurusamy, Programming in ANSI C, Tata McGraw-Hill (2002), 5th ed.*
2. *Stephen G. Kochan, Programming in C, Pearson Education (2015), 4th ed.*
3. *Yashwant Kanetkar, Let us C, BPB Publications (2020), 17th ed.*
4. *R.S. Salari, Application Programming in C, Khanna Book Publishing (2012), 4th ed.*
5. *Anshuman Sharma, Learn programming in C, Lakhanpal Publishers (2016), 7th ed.*

Post Graduate Diploma in Computer Applications Semester – II

(Session 2021-22)

COURSE CODE: PCAM–2113

INTRODUCTION TO SCRIPTING LANGUAGES AND WEB DESIGNING

Course Outcomes:

After passing this course the student will be able to:

CO1: Comprehend basics of web designing, HTML and CSS.

CO2: Apply HTML and CSS to design webpages.

CO3: Comprehend basics of internet, related technologies and threats to the security in internet.

Post Graduate Diploma in Computer Applications Semester – II

(Session 2021-22)

COURSE CODE: PCAM–2113

INTRODUCTION TO SCRIPTING LANGUAGES AND WEB DESIGNING

Examination Time: (3+3) Hrs.

Max. Marks: 100

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section

UNIT I

HTML: Structure of HTML, Basic Tags, Image, Hyperlinks, Marquee, Frames, Tables, Lists, Forms, Limitations of HTML.

UNIT II

CSS: Types, Syntax, Colors, Backgrounds, Box Model, Fonts, Alignment, CSS Links.

UNIT III

INTERNET & ITS USE: Types of Internet Connectivity, Telnet, File Transfer Protocol, IRC, Virtual Reality, Web Publishing, Web Hosting. Cyber Crime, Types of Cyber Crimes, Cookies, Virus, Trojan Horse, Worm, Danger of Virus.

UNIT IV

E-MAIL BASICS: Introduction, advantage and disadvantage, structure of an email message, working of e-mail (sending and receiving messages), managing email (creating new folder, deleting messages, forwarding messages, filtering messages).

WWW: Introduction, Working of WWW, Web browsing (opening, viewing, saving and printing a web page and bookmark).

References/Textbooks:

1. *Jeffrey C Jackson, Web Technology- A Computer Science perspective, Pearson Education (2007) 1st ed.*
2. *Chris Bates, Web Programming- Building Internet Applications, Wiley India (2006), 3rd ed.*
3. *Achyut S Godbole and AtulKahate, Web technologies, Tata McGraw Hill (2002), 2nd ed.*
4. *Uttam K Roy, Web Technologies, Oxford University Press (2010), 1st ed.*
5. *Anshuman Sharma, Fundamentals of Internet Applications, Lakhanpal Publishers (2016), 1st ed.*

Post Graduate Diploma in Computer Applications Semester – II

(Session 2021-22)

COURSE CODE: PCAM–2114

DATABASE MANAGEMENT SYSTEM

Course Outcomes:

After the completion of this course, the student will be able to:

CO1: Comprehend various terms like data, database and database models.

CO2: Apply SQL to formulate queries and design basic level of database.

CO3: Comprehend the PL/SQL and relationship with SQL.

Post Graduate Diploma in Computer Applications Semester – II

(Session 2021-22)

COURSE CODE: PCAM-2114

DATABASE MANAGEMENT SYSTEM

Examination Time: (3+3) Hrs.

Max. Marks: 100

Theory: 50

Practical: 30

CA: 20

Instructions for Paper Setter -

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UNIT I

Basic Concepts: An overview of Database Management, (database, database system, why database). An architecture for a database system (levels of the architecture, mapping, data independence), DBA, Definition of CODD's Rules

Normalization of Data: First, Second and Third Normal form

Database Models: Hierarchical, Network, Relational.

Introduction to Relational database systems

UNIT II

ORACLE 10g: Introduction to Oracle

Data Types: Char, numbers, date long, raw, long raw.

DDL Commands of SQL: Create Tables, Constraints, Alter Table, Drop Table, Rename.

Data Manipulation Language: Insert Into, Update Statement, Delete Statement, Select statement (Select distinct, Select from where, Select from where order by, Select group by clause, Select Group by having clause).

Transaction Control Language: Roll back, Savepoint, Commit.

UNIT III

Built in Functions- Aggregate Functions (Sum, Avg, max, min, count), Character Functions (Lower, Upper, Length, Substr, RPAD, LPAD), Arithmetic Functions (Round, Trunc, Sqrt, Mod, Abs, Sine) Date and Time Functions and Other Miscellaneous Functions (Add-months, Month-between, NVL, NVL2, decode) & Conversion Functions (to-char, to-number, to-date).

Join methods & Sub query, Union, Intersection, Minus, Views, Security amongst users.

UNIT IV

PL/SQL: Introduction to PL/SQL, Relationship between SQL & PL/SQL, Advantages, block structure, Variable and Constant declaration, Declaration using attributes %type attribute, control statements.

References/Textbooks:

1. *Silberschatz, Korth & Sudarshan, Database Systems Concepts, McGraw-Hill Inc.(2020), 7th ed.*
2. *C.J. Date, An Introduction of Database System, Addison-Wesley Publishing co.(2003), 8th ed.*
3. *Anshuman Sharma, Fundamentals of DBMS, Lakhanpal Publishers (2016), 4th ed.*
4. *Ivan Bayross, SQL/PL/SQL. The Programming Language of Oracle, BPB Publications(2010), 4th ed.*