FACULTY OF COMPUTER SCIENCE & IT

SYLLABUS FOR

Post Graduate Diploma in Computer Applications

(Semester I-II)

Under Credit Based Continuous Evaluation Grading System

(CBCEGS)

Session: 2022-23

The Heritage Institution

KANYA MAHA VIDYALAYA JALANDHAR
(Autonomous)

Post Graduate Diploma in Computer Applications

(Session 2022-23)

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 InDesign 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

Post Graduate Diploma in Computer Applications

Credit Based Continuous Evaluation Grading System (CBCEGS)

(Session 2022-2023)

Post Graduate Diploma in Computer Applications Semester - I										
Course Code	**Course Title**	**Course Type**	**Hours Per Week L-T-P**	**Credits**		**Marks**				**Examination time (in Hours)**
				L-T-P	**Total**	**Total**	**Th**	**P**	**CA**	
PCAM-1111	PC Computing-I (Back Office Operations)	C	3-0-4	3-0-2	5	100	50	30	20	3+3
PCAM-1112	PC Computing-II (Professional DTP)	C	3-0-4	3-0-2	5	100	50	30	20	3+3
PCAM-1113	Fundamentals of Computer and Operating System	C	3-0-4	3-0-2	5	100	50	30	20	3+3
PCAM-1114	Programming in C	C	3-0-4	3-0-2	5	100	50	30	20	3+3
PCAM-1115	Multimedia Systems	C	3-0-4	3-0-2	5	100	50	30	20	3+3
TOTAL CREDITS				25		500				

Note:

C- Compulsory Course

KANYA MAHA VIDYALAYA, JALANDHAR (AUTONOMOUS)

SCHEME AND CURRICULUM OF EXAMINATIONS OF ONE YEAR POST GRADUATE DIPLOMA

Post Graduate Diploma in Computer Applications

Credit Based Continuous Evaluation Grading System (CBCEGS)

(Session 2022-2023)

Post Graduate Diploma in Computer Applications Semester – II										
Course Code	**Course Title**	**Course Type**	**Hours Per Week L-T-P**	**Credits**		**Marks**				**Examination time (in Hours)**
				L-T-P	**Total**	**Total**	**Th**	**P**	**CA**	
PCAL-2111	Optional Course	O	4-0-0	4-0-0	4	100	80	-	20	3
PCAM-2112	Network Concepts and Management	C	3-0-4	3-0-2	5	100	50	30	20	3+3
PCAM-2113	Database Management System	C	3-0-4	3-0-2	5	100	50	30	20	3+3
PCAM-2114	Introduction to Scripting Languages and Web Designing	C	3-0-4	3-0-2	5	100	50	30	20	3+3
PCAP-2115	Minor Project	C	0-0-8	0-0-4	4	100	-	80	20	3
TOTAL CREDITS				23		500				

List of Optional PCAL-2111:
Option (i): Introduction to Cyber Security
Option (ii): E-Commerce

Note:
C- Compulsory Course
O-Optional Course

PC COMPUTING-I
(BACK-OFFICE OPERATIONS)
COURSE CODE: PCAM–1111

Course Outcomes:

After passing this course the student will be able to:

CO1: Comprehend basic word processing skills such as text input formatting, editing, cut, copy, paste, spell check, margin, tab controls, keyboard shortcuts, printing, charts, etc.

CO2: Apply skills to make effective presentations using associated application software.

CO3: Apply animations, transitions, multimedia and graphs on presentations.

CO4: Manage data in a spreadsheet along with its representation through graphs and charts.

PC COMPUTING-I
(BACK-OFFICE OPERATIONS)
COURSE CODE: PCAM–1111

L:T:P: 3:0:2

Credit: 5

Examination Time: 3 + 3 hours

Max. Marks: 100
Theory Marks: 50
Practical Marks: 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:

1. *AnshumanSharma, 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, NeeharikaAdabala, 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.

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Post Graduate Diploma in Computer Applications Semester – I

PC COMPUTING–II
(PROFESSIONAL DTP)

COURSE CODE: PCAM–1112

Course Outcomes:

After passing this course the student will be able to:

CO1: Create graphical documents using Photoshop.

CO2: Comprehend various color models, filters and transformations used in Photoshop.

CO3: Create PDF document using InDesign.

CO4: Link, import and edit graphics, work with layered structure in InDesign.

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Post Graduate Diploma in Computer Applications Semester – I

PC COMPUTING–II
(PROFESSIONAL DTP)

COURSE CODE: PCAM–1112

L:T:P: 3:0:2   **Max. Marks: 100**
                                                               Theory Marks: 50
Credit: 5   **Practical Marks: 30**
                                                               CA: 20

Examination Time: 3 + 3 hours

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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 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

InDesign: Getting to Know the Work Area – The Application window; Navigating Pages; Rulers, Guides& Frames; Panels & Panel Menus; View and Preview settings, New Document Set Up; Adding and Editing Text; Adding and Replacing Graphics; Moving Objects; Printing and Creating a PDF; Saving Files, Margins and Columns; Ruler Guide.

Managing Pages – Adding, deleting and moving pages; Navigation; changing page sizes; creating and applying Master Pages; Overriding Master Page Items, Page Numbering

Working with Type – Importing / Placing Text; Text Frames, Selecting and Editing Text; Special Characters; Story Editor; Spell-check; Find / Change, Paragraph & Character Styles – Setting up character / paragraph styles; formatting a paragraph; Tabs, Bullets & Numbering

UNIT IV

Importing & Editing Graphics – Importing / Placing Graphics; Linking Graphics & Links Panel; Fitting Graphics to Frames

Working with Color – Strokes & Fills; Color Swatches; Gradient Swatches; Sampling Color Frames & Paths - Editing Frames and Paths; Corner Options; Creating Polygons &Starbursts; Turnings text into Outlines

Layers – Creating and controlling layers; grouping and locking layers; aligning and distributing; Text wrap

References/Textbooks:

1. *Steve Caplin, How To Cheat In Photoshop CC: The Art of Creating Realistic Photomontages by Routledge, 2013.*
2. *Lisa DaNae Dayley, Brad Dayley, Adobe Photoshop CC Bible, Wiley, 2013.*
3. *Manohar Singh, Jaspreet Thind, Tejinder Thind, Uminder Kaur, PC Computing II Photoshop 5.5 & Corel Draw 10 Professional DTP,AP Publishers, 2008.*
4. *Kelly Anton, Tina DeJarld , Adobe InDesign CC, Adobe Press;2018*
5. *Robert Shufflebotham, InDesign in easy steps, In Easy Steps Limited; 3rd edition, 2021*

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

Post Graduate Diploma in Computer Applications Semester – I

**FUNDAMENTALS OF COMPUTER AND OPERATING SYSTEMS
COURSE CODE: PCAM–1113**

Course Outcomes:
After passing this course the student will be able to:
CO1: Comprehend the basic components and functional units of a computer system.
CO2: Identify various input, output and memory devices.
CO3: Create folder, shortcuts and manage files in Windows.
CO4: Execute various commands on disk operation system (DOS).

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Post Graduate Diploma in Computer Applications Semester – I

FUNDAMENTALS OF COMPUTER AND OPERATING SYSTEMS
COURSE CODE: PCAM–1113

L:T:P: 3:0:2

Credit: 5

Examination Time: 3 + 3 hours

Max. Marks: 100
Theory Marks: 50
Practical Marks: 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, dotmatrix 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.

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Post Graduate Diploma in Computer Applications Semester – I

PROGRAMMING IN C
COURSE CODE: PCAM–1114

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 such as arrays, functions and strings to provide solution in different problem domains.

CO4: Work with pointers, structures and union.

Post Graduate Diploma in Computer Applications Semester – I

PROGRAMMING IN C
COURSE CODE: PCAM–1114

L:T:P: 3:0:2	**Max. Marks: 100**
	Theory Marks: 50
Credit: 5	**Practical Marks: 30**
	CA: 20
Examination Time: 3 + 3 hours	

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. *YashwantKanetkar, 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 – I

MULTIMEDIA SYSTEMS
COURSE CODE: PCAM–1115

Course Outcomes:
After passing this course the student will be able to:
CO1: Comprehend various file format for audio, video and text media.
CO2: Identify various components of multimedia system and database.
CO3: Integrate and edit different multimedia using Premier Pro.
CO4: Apply various editing such as audio/video effects, color correction, mixing, sequencing to multimedia.

Post Graduate Diploma in Computer Applications Semester – I

MULTIMEDIA SYSTEMS
COURSE CODE: PCAM–1115

L:T:P: 3:0:2   **Max. Marks: 100**
                                                                  Theory Marks: 50
Credit: 5   **Practical Marks: 30**
                                                                  CA: 20

Examination Time: 3 + 3 hours

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, Data types, 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:

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

(Option-i): INTRODUCTION TO CYBER SECURITY
COURSE CODE: PCAL–2111

Course Outcomes:

After passing this course the student will be able to:

CO1: Comprehend technical aspects of Wi-Fi and web browser security.

CO2: Apply techniques to secure social media and smartphones.

CO3: Comprehend various payment methods and ways to secure them.

CO4: Comprehend various cybersecurity threat and their corresponding counter measures.

Post Graduate Diploma in Computer Applications Semester – II

(Option-i): INTRODUCTION TO CYBER SECURITY
COURSE CODE: PCAL–2111

L:T:P: 4:0:0	**Max. Marks: 100**
Credit: 4	**Theory Marks: 80**
Examination Time: 3 hours	**CA: 20**

Instructions for Paper Setter -

Eight questions of equal marks (16 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 to Cyber Space: History of Internet, Cyber Crime, Information Security, Computer Ethics and Security

Choosing the browser according to the requirement and email security: Guidelines to choose web browsers, Securing web browser, Antivirus, Email security

Guidelines for secure password and wi-fi security: Guidelines for setting up a Secure password, Two-steps authentication, Password Manager, Wi-Fi Security.

UNIT II

Social Media and basic Windows security: Guidelines for social media security, Tips and best practices for safer Social Networking, Basic Security for Windows, User Account Password,

Smartphone security guidelines: Introduction to mobile phones, Smartphone Security, Android Security, IOS Security

Cyber Security Initiatives in India: Counter Cyber Security Initiatives in India, Cyber Security Incident Handling, Cyber Security Assurance

UNIT III

Payment Security: Online Banking Security, Mobile Banking Security, Security of Debit and Credit Card, UPI Security, Security of Micro ATMs, e-wallet Security Guidelines, Security Guidelines for Point of Sales(POS).

Social Engineering: Social Engineering, Types of Social Engineering.

UNIT IV

Cyber Security Threat: Landscape and Techniques, Firewall, Sections of IT Act dealing with security, Hackers-Attacker-Countermeasures, Web Application Security, Digital Infrastructure Security.

References:

1. Introduction to Cyber Security - http://uou.ac.in/foundation-course
2. Fundamentals of Information Security - http://uou.ac.in/progdetail?pid=CEGCS-17
3. Cyber Security Techniques - http://uou.ac.in/progdetail?pid=CEGCS-17
4. Cyber Attacks and Counter Measures: User Perspective - http://uou.ac.in/progdetail?pid=CEGCS-17
5. Information System - http://uou.ac.in/progdetail?pid=CEGCS-17

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

Post Graduate Diploma in Computer Applications Semester – II

(Option-ii): E-COMMERCE

COURSE CODE: PCAL–2111

Course Outcomes:
After passing this course the student will be able to:
CO1: Comprehend the basic terms of E-Commerce and acquaint about the steps to be followed for opening a new E-Commerce business.

CO2: Comprehend components and working of EDI.

CO3: Identify Electronic Payment systems, various issues involved in relation to secure electronic transactions and various E-Payment options.

CO4: Comprehend BPR and Case Studies of E-Business related applications.

Post Graduate Diploma in Computer Applications Semester – II

(Option-ii): E-COMMERCE
COURSE CODE: PCAL–2111

L:T:P: 4:0:0	**Max. Marks: 100**
Credit: 4	**Theory Marks: 80**
Examination Time: 3 hours	**CA: 20**

Instructions for Paper Setter -
Eight questions of equal marks (16 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 to E – Commerce: Meaning and Concept, Features, Benefits, E-Commerce v/s. Traditional Commerce. E-Commerce Framework, VAN and EDI as Promoters. E-Commerce Models.

Steps involved in opening your own online business, Role of Website and the technologies needed to build a website.

UNIT - II
EDI: EDI Vs Traditional Systems, components and working of EDI system, EDI implementation issues, Factors for successful EDI Implementation, EDI service providers in India.

UNIT – III
Concerns for E – Commerce: Legal and regulatory issues, Laws for E – Commerce, E-Commerce in India, Sections of IT Act for E-Commerce transactions.

Electronic Payment Systems: Various Methods of Electronic Payments – Google pay, Paytm, Debit and Credit Cards, UPI. E-Commerce security Issues and Measures.

UNIT – IV
Re – Engineering for Change: Business process re – engineering (BPR), Methodology and Planning Methods for change.

Case Studies: To demonstrate usefulness of E – Commerce in various business areas like Banks, Reservations, E–Governance and E-Retailing.

References:

1. *K.K. Bajaj, Debjani Nag, E-Commerce –The Cutting Edge of Business, McGraw Hill Education; 2nd edition , 2017*
2. *Chaffey, E-Business and E-Commerce Managemet: strategy, Implementation and Practice, Pearson Education India (2013), 5th Edition*
3. *Kenneth C. Laudon and Carol Guercio Traver, E-Commerce, Pearson (2018), 13th Edition*
4. *S.J. P.t. Joseph, E-Commerce: An Indian Prespective, PHI Learning Pvt. Ltd. 6th Revised Edition, 2019*
5. *Shruti Mathur, Ecommerce, Pinnacle Learning (2020)*

Post Graduate Diploma in Computer Applications Semester – II

NETWORK CONCEPTS AND MANAGEMENT
COURSE CODE: PCAM–2112

Course Outcomes:

After passing this course the student will be able to:

CO1: Comprehend basics of network and network reference models such as TCP/IP and OSI.

CO2: Identify various routing devices and their corresponding layer of their operations.

CO3: Comprehend shell, file system, structure and sessions in UNIX operating system.

CO4: Apply basics Linux commands to execute various tasks.

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Post Graduate Diploma in Computer Applications Semester – II

NETWORK CONCEPTS AND MANAGEMENT
COURSE CODE: PCAM–2112

L:T:P: 3:0:2   **Max. Marks: 100**
                                                                           Theory Marks: 50
Credit: 5   **Practical Marks: 30**
                                                                           CA: 20

Examination Time: 3 + 3 hours

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.*

DATABASE MANAGEMENT SYSTEM
COURSE CODE: PCAM–2113

Course Outcomes:
After the completion of this course, the student will be able to:
CO1: Comprehend database architecture, database models and normalization of data.
CO2: Apply SQL to formulate queries and design basic level of database.
CO3: Apply various built-in functions for formatting of data.
CO4: Comprehend the use of Programming Language constructs like function, procedure, packages, etc. in database.

DATABASE MANAGEMENT SYSTEM
COURSE CODE: PCAM–2113

L:T:P: 3:0:2	**Max. Marks: 100**
	Theory Marks: 50
Credit: 5	**Practical Marks: 30**
	CA: 20

Examination Time: 3 + 3 hours

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

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, Trune, 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, Valuable 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.*

INTRODUCTION TO SCRIPTING LANGUAGESANDWEB DESIGNING
COURSE CODE: PCAM–2114

Course Outcomes:

After passing this course the student will be able to:

CO1: Create static webpages using HTML.

CO2: Apply styling to static webpages using different CSS properties.

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

CO4: Comprehend basics of internet and emails.

INTRODUCTION TO SCRIPTING LANGUAGES AND WEB DESIGNING
COURSE CODE: PCAM–2114

L:T:P: 3:0:2   **Max. Marks: 100**
                                                         Theory Marks: 50
Credit: 5   **Practical Marks: 30**
                                                         CA: 20
Examination Time: 3 + 3 hours

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 Atul Kahate, 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

MINOR PROJECT

COURSE CODE: PCAP–2115

Course Outcomes:

After passing this course the student will be able to:

CO1: Work within defined time and resource constraints.

CO2: Address the Real-World Problems and find the required solution.

CO3: Formulate and propose a plan for creating a solution.

CO4: Demonstrate an ability to work in teams and manage the conduct of study.

MINOR PROJECT

COURSE CODE: PCAP–2115

L-T-P: 0-0-4   **Max. Marks: 100**
                                                                   Practical Marks: 80
Credits:4   **CA: 20**

Examination Time: 3 Hours

General Instructions:

1. A minor project based on the work done in the entire course is to be developed.
2. Candidates have to submit one hard copy and two CDs/DVDs of the project documentation which shall be kept with the HoD in the college only. Further, supervisor shall forward one copy of DVD/CD to the COE Office, with a covering letter containing Candidate name, Candidate Roll no and Project Title.
3. The minor project may be developed in groups, consisting of at most two students in a group.
4. The college shall depute supervisor(s) under whose supervision the minor project shall be developed.
5. The evaluation of the module shall be done as per the common ordinance of PG Diploma programmes.