OUTLINES OF TESTS, SYLLABI AND COURSES OF

READINGS FOR

Post Graduate Diploma in Computer Applications

PGDCA

(CHOICE BASED CREDIT SYSTEM) PGDCA (I & II Semester)

Session 2018-19

MATA GUJRI COLLEGE
SRI FATEHGARH SAHIB-140406

SYLLABUS
SYLLABUS, OUTLINES OF PAPERS AND TESTS
CHOICE-BASED CREDIT SYSTEM
OUTLINE OF PAPER AND TESTS
PGDCA (Post Graduate Diploma in Computer Applications)
SYLLABUS
FIRST YEAR-(FIRST SEMESTER EXAMINATIONS)
Session 2018-19

Code	Title of Paper	Schedule of Teaching (Hours/Week)			Total Hours	Credits	Marks	
		L	T	P			External	Internal
PGDCA-101	Fundamentals of Information Technology	4	1	0	5	4	70	30
PGDCA-102	E-Commerce	4	1	0	5	4	70	30
PGDCA-103	Programming Fundamentals through "C" Language	4	1	0	5	4	70	30
PGDCA-104	Software Lab – I Office Automation and Productivity Tools	0	0	5	5	5	60	40
PGDCA-105	Software Lab – II based On PGDCA-103	0	0	5	5		60	40
PGDCA-106	**Choice Based Course (CBC-I)**	4	1	0	5	4	70	30
	TOTAL	16	4	10	30	21	**400**	**200**

CBC -I: Students can opt any one of the following papers:

1.	PGDCA-106 C1	Workshop on Page Maker
2.	PGDCA-106 C2	Workshop on Corel Draw

Note:

1. The breakup of marks for the Continuous assessment for theory papers will be as under:

i.	One or two tests out of which minimum one best will be Considered for assessment.	15 Marks
ii.	Attendance	5 Marks
iii.	Class participation and behavior	10 Marks

2. The breakup of for the Continuous Assessment for the practical will be as under:

i.	Lab Assignments (60% of Total marks)	24 Marks
ii.	Viva (30% of Total marks)	12Marks
iii.	Attendance/Class participation and behavior (10 % of Total marks)	4 Marks

PGDCA-101 Fundamentals of Information Technology

Maximum Marks: 70 Time allowed: **3 Hrs.**
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

A) Instructions for paper-setters

The question paper will consist of three units I, II and III. Unit I and II will have four questions from the respective units of the syllabus carrying 20% marks each. Unit III will have 5-10 short answer type questions which cover the entire syllabus uniformly carrying 20% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from Unit I and II. Unit III is compulsory.
2. Use of non -programmable scientific calculator is allowed.

UNIT-I

Computer Fundamentals: Block structure of a computer, characteristics of computers, generations of computers, classification of computers on the basis of size and logic.
Number System: Bit, byte, binary, decimal, hexadecimal, and octal systems, conversion from one system to the other, **Binary Arithmetic**: Addition, subtraction and multiplication.
Representation of Information: Integer and floating point representation, Complement schemes, Character codes (ASCII, EBCDIC, BCD, 8421, 2421, Excess-3, Gray, Hamming)
Memory types: Magnetic core, RAM, ROM, Secondary, Cache, Bubble Memory.
I/O devices: Light pen, joystick, Mouse, Touch screen; OCR, OMR, MICR.
Printers: Impact, non-impact. **Storage devices**: floppy disk, hard disk, compact disk, tape

UNIT-II

Computer languages: Machine language, assembly language, higher level language, 4GL.
Introduction to: Compiler, Interpreter, Assembler, System Software and Application Software. **Operating System:** classification–simple batch processing, Multiprogramming, Multitasking, parallel Systems, Distributed system, Real time system.
Computer Network and Communication: Network types, network topologies, network communication devices, physical communication media. **Internet and its Applications**: E-mail, TELNET, FTP, World Wide Web, Internet chatting; Intranet, extranet.

Text Book:

1. Foundations of Computing by P.K. Sinha and P. Sinha, BPB First Edition.

References:

1. Information Technology and Management by Turban Mclean and Wetbrete, John Wiley & Sons.
2. Information Technology by Satish Jain, BPB.
3. Computer Science and Information Technology by N B Venkateswarlu, Tata McGraw-Hill Education.

PGDCA-102 E-Commerce

Maximum Marks: 70 Time allowed: **3 Hrs.**
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

A) Instructions for paper-setters

The question paper will consist of three units I, II and III. Unit I and II will have four questions from the respective units of the syllabus carrying 20% marks each. Unit III will have 5-10 short answer type questions which cover the entire syllabus uniformly carrying 20% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from Unit I and II. Unit III is compulsory.
2. Use of non -programmable scientific calculator is allowed.

Unit-I

Introduction to E-commerce: Definition of E-commerce, Advantages and disadvantages of E-commerce, E-commerce versus traditional commerce.

Internet and WWW, Electronic commerce framework, Electronic commerce and media convergence, the anatomy of E-commerce applications.Architectural framework for E-commerce, World Wide Web as the architecture, Web background: Hypertext publishing, Security and the Web.

Consumer-oriented E-commerce: Consumer-oriented applications, Mercantile ProcessModels – consumer's perspective, Merchant's perspective.

Unit-II

Advertising and Marketing on the Internet: The new age information based marketing,Advertising on the Internet – Active or push-based advertising models, Passive or pull-based advertising models. Guidelines for Internet advertising, online marketing process.Types of Electronic Payment Systems, Digital token-based electronic payment systems,Smart cards and electronic payment systems, Credit card-based electronic payment systems,Risk and electronic payment systems.Electronic Data Interchange and its applications in business.

Cyber Law:Legal, Ethical and other public policy issues related to e-commerce.

Text Book:

1. Frontiers of Electronic Commerce by Ravi Kalakota, Andrew. Whinston, Addison Wesley,7th Edition.

References:

1. Electronic Commerce- A managerial perspective by EfraimTurbon, Jae Le, David King, Chung, Prentice-Hall International US Ed edition.
2. Electronic Commerce by Gary P. Schneider, James T. Perry, Course Technology; 1 edition.
3. E-Commerce business, technology, society by Kenneth C. Laudon Carol Guercio Traver, Pearson,11th Edition.

PGDCA-103 Programming Fundamentals through "C" Language

Maximum Marks: 70 Time allowed: **3 Hrs.**
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

A) Instructions for paper-setters

The question paper will consist of three units I, II and III. Unit I and II will have four questions from the respective units of the syllabus carrying 20% marks each. Unit III will have 5-10 short answer type questions which cover the entire syllabus uniformly carrying 20% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from Unit I and II. Unit III is compulsory.
2. Use of non -programmable scientific calculator is allowed.

Unit-I

Problem Solving & Program Planning: Need for problem solving and planning a program; program design tools - algorithms, flow charts, pseudo codes and decision tables. Demonstration of problem solving and use of programming tools through extensive illustrative exercises.

Basics of C Language: General structure of a C program; phases in the development of a program ,Character set, Identifiers and keywords, Data types, Declarations, Expressions, Statements and Symbolic Constants, Input-Output, Header Files, Pre -processor directives, Operators, variables.

Control statements: Branching, looping using for, while and do-while Statements, Nested control structures, switch, break, and continue statements, Functions: Definition, Call, prototypes, and passing arguments to functions, Storage classes.

Unit-II

Arrays-One Dimensional and multidimensional arrays, passing arrays to functions, Pointers, pointer arithmetic, pointers to functions, pointer arrays and pointers to pointers.
Dynamic memory management.

Structure-Structure as function arguments, Arrays of structures, arrays in structures, union, File processing: opening and closing, data files, creation, processing & unformatted data files, random file access.

Text Book:

1. Programming with C by Byron Gottfried, Schaum' s outline series, Second edition.

References:

1. Programming in ANSI C by Ram Kumar and Rakesh Aggarwal, Published by West Publishing Company.
2. The C programming language by B.W. Kerrighan and D.M.Richie, PHI 2nd edition.
3. C Programming for engineers & Computer Science by H.H. Tan & T.B. Dorazio Mcgraw Hill international edition.

PGDCA-104 Software Lab-I (Office Automation and Productivity Tools)

Maximum Marks: 100
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

This laboratory course will comprise as exercises based on Office Automation and Productivity Tools.
Students are required to practice following:

WINDOWS: Windows concepts, features, windows structure, desktop, taskbar, start menu, mycomputer, Recycle Bin, Windows Accessories. System Tools, communication, Sharing Information between Programs.
MS Word: Introduction to Word Processing, Interface, Toolbars, Ruler, Menus, Keyboard Shortcut,Editing a Document, Previewing documents, Printing documents, Formatting Documents, Checking the grammar and spelling, Formatting via find and replace, Using the Thesaurus, Using Auto Correct, Auto Complete and Auto Text, word count, Hyphenating, Mail merge, mailing Labels Wizards and Templates, Handling Graphics, tables and charts, Converting a word document into various formats.
MS-PowerPoint: Creating slides, Applying transitions and sound effects, setting up slide shows,Animation.
MS EXCEL: Creating worksheet, entering data into worksheet, heading information, data, text,dates, alphanumeric, values, saving & quitting worksheet, Opening and moving around in an existing worksheet, Toolbars and Menus, keyboard shortcuts, Working with single and multiple workbook, Working with formulas & cell referencing, Formatting of worksheet.

***Maximum Marks for Continuous assessment : 40**
Maximum Marks for Semester examination : 60

The breakup of marks for the Semester examination will be as under

i.	**Lab Record /**	**15 Marks**
ii.	**Viva Voce**	**30 Marks**
iii.	**Task given in the examination/Program Development and Execution**	**15 Marks**

Textbooks:

1. Office Automation Concepts and Tools by Dionysios C. Tsichritzis,Springer.

Reference Books:

1. Automation, Production Systems, and Computer-Integrated Manufacturing by Mikell P. Groover, Pearson, Global Edition.
2. The Handbook of Office Automation by Ralph Tomas.
3. Microsoft Office Access 2007 VBA by Scott B. Diamond,Pearson.

PGDCA-105 Software Lab-II
(based on PGDCA-103)

Maximum Marks: 100
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

This laboratory course will mainly comprise of exercise based on PGDCA-103 (Programming in C Language)

Implementation and Execution of:

1. Defining variables and assigning values to variables.
2. Arithmetic and relational operators.
3. Arithmetic expressions and their evaluation
4. Formatting input/output using printf and scanf
5. Control Statements
6. Array
7. Strings.
8. Structures.
9. Pointers.
10. Reading from a file and writing into a file.

*Maximum Marks for Continuous assessment : 40
Maximum Marks for Semester examination : 60

The breakup of marks for the Semester examination will be as under

i.	**Lab Record /**	**15 Marks**
ii.	**Viva Voce**	**30 Marks**
iii.	**Task given in the examination/Program Development and Execution**	**15 Marks**

PGDCA-106(C1): Workshop on Page Maker

Maximum Marks: 100* **Max. Time: 3 Hrs.**

Minimum Pass Marks: 35% **Practical sessions to be conducted: 45-55**

Basics of page layout and design, Creating simple documents like flyers, small adverts, leaflets, newsletters, etc., Working environment, Introduction to the Toolbox, Creating a new document, Defining document size, page margins, etc., Setting document preferences, Setting page options, Navigating the Document, Zooming Keyboard Shortcuts, Saving PageMaker files, Document magnification and changing views, Using column guides and custom guide lines to help you position content and Setting, the zero point, Using x and y references, Using the proxy box, Using the Control Palette.
Creating Text: Creating text on the page, Importing text prepared in a word processor, Setting Text properties: font, size, style, Colour, leading, spacing, kerning, Tracking and expert Tracking Breaking Text, Baseline Shift, Character Scaling, Sub/Super Script, Caps and Small Caps, Changing Case, Flowing text from one text block to another, Editing text on the page and with the Story Editor, Checking Spelling, Applying Stroke and Fill
Creating Frames and Blocks: Frames vs. Blocks, Text Blocks, Threading Text, Threading Text Automatically, Deleting Blocks, Cutting and Pasting Blocks, Text Frames, Linking Text Frames, Frame Options Frame Shapes, Separating Frames **Working with Paragraphs:**Introduction to Paragraph Formatting, Justification, Indents, Space Above and Below, Orphan and Widow Control, Keeping Lines Together, Column and Rule Breaks, Rules Above and Below, Advanced Rules, Balancing Columns, Align Paragraph to Grid **Tabs and Indents:** Setting Indents, Creating Hanging Indents, Setting Tabs **Paragraph Styles:** Intro Paragraph Styles, Creating Styles, Mixed Styles, Style Tags, Next Style, Importing Styles **Miscellaneous Text:**Bullets and Numbers, Special Characters, Drop Caps, Inline Graphics **Fills and Outlines and Color:** Outline and Stroke, Transparent Stroke, Basic Fills, Color Fills, Types of Color, Creating Spot Color, Creating CMYK colors, Creating RGB Colors, Setting a Tint, Using the Color Pallet, Creating Deleting and Editing Colors, Creating Default Colors, Importing Colors, Importing Colors with EPS files, Introduction to color palette, Control Pallet Basics. **Working with Graphics:**Place vs. Cut and Paste, Cutting and Pasting, Linking and Embedding, Placing and Linking Images, Resizing images, Replacing Images, Inserting Into Frames, Working with Graphic Frames, Separating Content from Frame, Cropping and Panning Cropped Images, Creating a Key line, Drawing lines and shapes, Setting stroke and fill colors, Creating borders for pictures, Choosing colors, Defining color. **Manipulating with the Control Palette:** Introduction, Positioning, Scaling, Magic Scale, Rotating, Skew, Mirror, Anchoring the Proxy Button, Removing Transformations. **Arranging Objects**:Order, Align, Distribute, Grouping, Masking, Text Wrap, Irregular Text Wrap, Locking Position, Image Control, Bitmap Effects, Non Printing Items.

***Maximum Marks for Continuous Assessment: 30**

Maximum Marks for Semester Examination: 70

Text Book: Ellenn Behoriam, Erika Kendra, Adobe PageMaker 7, Prentice Hall
References:

1. Dinesh Maidasani,L Adobe PageMaker 7,Laxmi Publications
2. Marc Campbell, Adobe PageMaker 7,Firewall Media

PGDCA-106(C2) Workshop on Corel Draw

Maximum Marks: 100
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

The practical in lab will be implemented based on the following concepts:

1. Creating new Document, working with Templates, Import and Export.
2. Tools of Corel draw: Working with text and lines, Artistic text, Paragraph text, Fitting text to a path, Applying effects to text.
3. Working with shapes and objects.
4. Creating Graphical special effects.
5. Working with curves, Colors and Bitmaps.
6. Working with tables.

*Maximum Marks for Continuous assessment : 30
Maximum Marks for Semester examination : 70

Textbooks:

1. CorelDRAW X5 The Offical Guide by Gary David Bouton,McGraw Hill Professional.

Refernce Books:

1. CorelDRAW X3 Unleashed by DeAnn Blascoe and Tony Severenuk, Foster D.Coburn III.
2. CorelDRAW 12: The Official Guide by Steve Bain, Nick Wilkinson, McGraw Hill Professional.
3. CorelDRAW X4 The Offical Guide by Tony Severenuk, Pearson

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Session 2018-19

Code	Title of Paper	Schedule of Teaching (Hours/Week)			Total Hours	Credits	Marks	
		L	T	P			External	Internal
PGDCA-201	Fundamentals of Computer Network, Internet and Scripting Languages	4	1	0	5	4	70	30
PGDCA-202	Object Oriented Programming with C++	4	1	0	5	4	70	30
PGDCA-203	Database Management System	4	1	0	5	4	70	30
PGDCA-204	Software Lab-III based on Photoshop	0	0	5	5	5	60	40
PGDCA-205	Software Lab – IV based on PGDCA-202	0	0	5	5		60	40
PGDCA-206	***Choice Based Course (CBC-II)**	4	1	0	5	4	70	30
	TOTAL	16	4	10	30	21	**400**	**200**

CBC-II: Students can opt any one of the following papers:

1.	PGDCA-206 C1	System Analysis and Design
2.	PGDCA-206 C2	Principles and Practices of Management

Note:

1. The breakup of marks for the Continuous assessment for theory papers will be as under:

i.	One or two tests out of which minimum one best will be Considered for assessment.	15 Marks
ii.	Attendance	5 Marks
iii.	Class participation and behavior	10 Marks

2. The breakup of for the Continuous Assessment for the practical will be as under:

i.	Lab Assignments (60% of Total marks)	24 Marks
ii.	Viva (30% of Total marks)	12Marks
iii.	Attendance/Class participation and behavior (10 % of Total marks)	4 Marks

PGDCA-201 Fundamentals of Computer Network, Internet and Scripting Languages

Maximum Marks: 70 Time allowed: **3 Hrs.**
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

A) Instructions for paper-setters

The question paper will consist of three units I, II and III. Unit I and II will have four questions from the respective units of the syllabus carrying 20% marks each. Unit III will have 5-10 short answer type questions which cover the entire syllabus uniformly carrying 20% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from Unit I and II. Unit III is compulsory.
2. Use of non -programmable scientific calculator is allowed.

Unit -I

Computer Networks: Introduction,Applications, Network hardware and Software (protocol hierarchies, design issues for layers, interfaces and services: connection oriented and connection less), Network structure and architecture- point to point, multicast, broadcast, Classification of networks-LAN, MAN and WAN. Reference models - the OSI reference model, TCP / IP reference model. Comparison between OSI and TCP / IP models.

Internet: Introduction, Relays, Repeaters, Bridges, Routers, Gateways.

Internet Working: How networks differ, concatenated virtual circuits, connectionless internetworking, tunneling, internetwork Routing, fragmentation, Firewalls, internet architecture.

Unit-II

Application layer: The DNS Name Space, Electronic Mail, World Wide Web, FTP: introduction, data transfer and distributed computation, Generalized File Transfer, The File Transfer Protocol. **Network security:** Introduction to cryptography, substitution ciphers, transposition ciphers, one-time pads, two fundamental cryptographic principles.

Scripting languages: HTML: Introduction to HTML, HTML and the World Wide Web, HTML elements, basic structure elements of HTML, the two categories of body elements – block level and text level, creating HTML pages, viewing pages in different browsers, rule for nesting.HTML tags, colors and fonts, formatting the body section, creating links, creating external links, creating internal links.

Text Book:

1. Computer Networks by Andrew S. Tanenbaum, PHI Publications,Third Edition 1997.
2. Rick Dranell ,HTML 4.0 Unleashed , 2nd Edition ,Tech Media Publications

References:

1. Computer Networks and Internets by Douglas E. Comer, Addison Wesley, 2nd Edition.
2. Data Networks by D. Bertsellas and R. Gallager, Prentice Hall, 2nd Edition.
3. Introduction to data communication and networking by by Behrouz A. Forouzan, McGraw-Hill Higher education,5th edition.
4. Elizabeth Castro,HTML and CSS: Visual QuickStart Guide 8th Edition.

PGDCA-202 Object Oriented Programming with C++

Maximum Marks: 70 Time allowed: **3 Hrs.**
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

A) Instructions for paper-setters

The question paper will consist of three units I, II and III. Unit I and II will have four questions from the respective units of the syllabus carrying 20% marks each. Unit III will have 5-10 short answer type questions which cover the entire syllabus uniformly carrying 20% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from Unit I and II. Unit III is compulsory.
2. Use of non -programmable scientific calculator is allowed.

Unit-I

Evolution of OOP: Procedure Oriented Programming, OOP Paradigm, Advantages and disadvantages of OOP over its predecessor paradigms. Characteristics of Object Oriented **Programming**: Abstraction, Encapsulation, Data hiding, Inheritance, Polymorphism, Code Extensibility and Reusability, User defined Data Types.

Introduction to C++: Identifier, Keywords, Constants, variables, expressions, manipulators.

Operators: Arithmetic, relational, logical, conditional and assignment**.**Input and output statements, stream I/O, Conditional and Iterative statements, breaking control statements. Storage Classes: Automatic, Static, Extern, Register. Arrays, Arrays as Character Strings, Structures, Unions. Pointers: Pointer Operations, Pointer Arithmetic, Functions: Prototyping, Definition and Call, Parameter Passing: by value, by address and by reference, recursion, function overloading.

Unit-II

Classes and Objects: Class Declaration and Class Definition, Defining member functions, making functions inline, nesting of member functions, friend functions and friend classes.

Constructors: properties, types of constructors (Default, parameterized and copy), Destructors: properties, Rules for constructors and destructors. Dynamic memory allocation using new and delete operators. Inheritance, types of inheritance: Single, Multiple, Multilevel and Hybrid.

Polymorphism: Methods of achieving polymorphic behavior, Operator overloading: overloading binary operator, overloading unary operators, rules for operator overloading, Function overloading: early binding, late binding.

Files and streams: Classes for file stream operations, opening and closing of files, stream state member functions, binary file operations, structures and file operations, classes and file operations.

Text Book:

1. The Complete Reference C++ by Herbert Schildt,Tata McGraw-Hill.

References:

1. C++ How to Program by Deitel and Deitel, , Pearson Education.
2. Object Oriented Programming in C++ by Robert Lafore, GalgotiaPublicationsk.
3. The C++ Programming Language by BjarneStrautrup, Addition-Wesley Publication Co.
4. C++ Primer by Stanley B. Lippman, JoseeLajoie, Pearson Educaion.
5. Object Oriented Programming with C++ by E.Balagurusamy, Tata McGraw-Hill.

PGDCA-203 Database Management System

Maximum Marks: 70 Time allowed: **3 Hrs.**
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

A) Instructions for paper-setters

The question paper will consist of three units I, II and III. Unit I and II will have four questions from the respective units of the syllabus carrying 20% marks each. Unit III will have 5-10 short answer type questions which cover the entire syllabus uniformly carrying 20% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from Unit I and II. Unit III is compulsory.
2. Use of non -programmable scientific calculator is allowed.

Unit-I

Traditional file processing system: Characteristics, limitations, Database: Definition,composition.

Database Management System: Definition, Characteristics, advantages over traditional fileprocessing system, Users of database, DBA and its responsibilities, Database schema, instance. DBMS architecture, data independence, mapping between different levels.

Database languages: DDL, DML, DCL.

Database utilities, Data Models, Keys: Super, candidate, primary, unique, foreign.

Entity relationship model: concepts, mapping cardinalities, entity relationship diagram,weak entity sets, strong entity set, aggregation, generalization, converting ER diagrams to tables. Overview of Network and Hierarchical model.

Relational Data Model: Concepts, Constraints: Entity, Referential and Domain Integrity, Relational algebra: Basic operations, additional operations.

Unit-II

Database Design: Functional dependency, composition, problems arising out of bad database design, normalization, multi-valued dependency, Database design process, data base protection, database integrity.

Database concurrency: Definition and problems arising out of concurrency.

Database security: Authentication, authorization, methods of implementing security.

Query Based: Working with database and tables, queries in Access, Applying integrity constraints, Introduction to forms, sorting and filtering controls, Reports and Macro: creating reports, using Macros.

Text Book:

1. Database management system by B.P. Desai, BPB publications, New Delhi.
2. Introduction to database System by Elmisry Nawathy, Pearson Education India.

References:

1. An Introduction to Data Base Systems by C.J. Date, 3rd Ed., Narosa Publishers.
2. Principles of Database Systems by Jeffrey D. Ullman, 2nd Ed., Galgotia Pub.
3. Database Processing by D. Kroenke, Galgotia Publications.
4. Database System Concepts by Henry F. Korth, McGraw Hill. Inc.
5. Introduction to Database Management by Naveen Prakash, TMH.

PGDCA-204 Software Lab-III
(Based on Adobe Photoshop)

Maximum Marks: 100
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

This laboratory course will comprise as exercises based on Office Automation and Productivity Tools. Students are required to practice following:

Introduction to Photoshop: Basics of Adobe Photoshop. Understanding pixels & resolution.Exploring menus,panels and toolbox. Creating new image files and opening existing files in Photoshop. Understanding and handling different image file formats, changing the resolution, color, greyscales and size of the images. Zooming & panning an image. Working with multiple images, rulers, guides & grids. Creating multicolor images and using brushes, adjusting color using the panel. Cropping, rotating, overlapping and superimposing photos on a page. Undoing Steps with History.

Working with selections, layers and channels: Understanding selection tools, refining the selection and edges. Understanding layers, creating, selecting, editing, locking and grouping layers.Layer styles, consolidating layers.Manipulating layer mask. Understanding color channels, working with channels panel.
Working with filters: Basics of Filters, constructive filters, blur filters, destructive filters, effects filters, render filters,liquefy filter and other filters required for artistic effects.
Creating images for the web: Understanding web image formats, preparing and slicing images for the web use.Adding transparency to the web, previewing images in a browser.

*Maximum Marks for Continuous assessment : 40
Maximum Marks for Semester examination : 60

The breakup of marks for the Semester examination will be as under

i.	**Lab Record /**	**15 Marks**
ii.	**Viva Voce**	**30 Marks**
iii.	**Task given in the examination/Program Development and Execution**	**15 Marks**

Text Books:

1. Adobe Photoshop CS6, Bible the comprehensive, tutorial resource – Lisa DanaeDayley, Brad Dayley - Wiley India

References:

1. Photoshop 7 Savvy – Steve Romaniello – BPB Publications.
2. Adobe Dreamweaver CC by James .J Maivald.
3. Adobe Photoshop CS4 Studio Technique by Ben Willmore and Dan Ablan, Pearson.

PGDCA-205 Software Lab-IV
(Based on PGDCA-202)

Maximum Marks: 100
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

This laboratory course will mainly comprise of exercise based on subject (PGDCA-202)

Implementation and Execution of:

1. Defining variables and assigning values to variables.
2. Arithmetic and relational operators.
3. Arithmetic expressions and their evaluation
4. Formatting input/output using cin and cout
5. Control Statements
6. Array
7. Strings.
8. Structures.
9. Pointers.
10. Classes and Objects
11. Constructors
12. Destructors
13. Inheritance
14. Polymorphism
15. Operator overloading
16. Function overloading
17. . Files and streams:

*Maximum Marks for Continuous assessment : 40
Maximum Marks for Semester examination : 60

The breakup of marks for the Semester examination will be as under

i.	**Lab Record /**	**15 Marks**
ii.	**Viva Voce**	**30 Marks**
iii.	**Task given in the examination/Program Development and Execution**	**15 Marks**

PGDCA-206(C1) System Analysis and Design

Maximum Marks: 70 Time allowed: **3 Hrs.**
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

A) Instructions for paper-setters

The question paper will consist of three units I, II and III. Unit I and II will have four questions from the respective units of the syllabus carrying 20% marks each. Unit III will have 5-10 short answer type questions which cover the entire syllabus uniformly carrying 20% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from Unit I and II. Unit III is compulsory.
2. Use of non -programmable scientific calculator is allowed.

Unit-I

Systems concepts: Definition and characteristics of a system, Elements of a system, Types of systems. **The system development life cycle:** Introduction to various phases. **The role of the Systems Analyst:** Qualifications of a systems analyst, various roles of the systems analyst. **Systems analysis:** Initial investigation, needs identification, determining the user's information requirements, Information-gathering tools. **Structured analysis tools:** Data flow diagram, Data dictionary, Decision tree, Structured English, Decision tables. **Feasibility study:** Feasibility considerations, Steps in Feasibility analysis.

Unit-II

Systems Design: The process and stages of systems design, Input/output and forms design, Database design. **Implementation and software maintenance:** Conversion, Post-implementation review. Software maintenance: maintenance or enhancement, Primary activities of a maintenance procedure. **Hardware and software selection:** Procedure and major phases in selection.

Text Book:

1. E. M. Awad: Systems Analysis and Design, Galgotia Publications (P) Ltd.

Reference books:

1. Kenneth E. Kendall, Systems Analysis and Design, Pearson, 9th Edition.
2. Alan Dennis, Systems Analysis and Design: An Object-Oriented Approach with UML, 5th Edition, Wiley.
3. Systems Analysis and Design by Kenneth Kendall, Julie Kendall,Global Edition, Pearson Education

PGDCA-206(C2) Principles and Practices of Management

Maximum Marks: 70 Time allowed: **3 Hrs.**
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55**

A) Instructions for paper-setters

The question paper will consist of three units I, II and III. Unit I and II will have four questions from the respective units of the syllabus carrying 20% marks each. Unit III will have 5-10 short answer type questions which cover the entire syllabus uniformly carrying 20% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from Unit I and II. Unit III is compulsory.
2. Use of non -programmable scientific calculator is allowed.

Unit-I

Introduction to management: Definition and Nature of management, Functions of management and manager. Management: Science or art, Levels of management, Fayol's general principles of management.

Planning: Nature and purpose of planning, Planning versus forecasting, Types of plans, Steps in planning, planning process.

Decision making: characteristics and importance, programmed and non-programmed decisions, Steps in the process of decision making.

Organizing: Concept, Nature, Purpose and Process of Organizing, formal and informal organizations.Span of Management: Meaning, factors determining an effective span.Departmentation: Need and Importance, Bases of Departmentation. Concept of Delegation and its importance, Factors affecting delegation.

Unit-II

Staffing: Definition, Manpower Planning, Process of Staffing. Brief introduction to the concept of Recruitment and selection.

Motivation: Need and Role of Motivation, Types of Motivation/Motivators. Theories of Motivation: Maslow's hierarchy of needs theory, Herzberg's Hygiene theory, McClelland theory.

Leadership: Definition and Characteristics, Leadership Theories: Trait approach to leadership, Behavioural approach, Situational or Contingency approach to leadership. Leadership styles: Autocratic style, Democratic style, Paternalistic approach, Laissez faire.

Communication: Meaning, Characteristics, Importance. Elements of communication, the communication process, Types of communication, Formal and Informal Communication. Barriers and breakdowns in Communication, Making Communication Effective.Controlling: Nature and significance of controlling, Basic Control Process.

Text Books:

1. Principles & Practice of Management by L. M. Prasad. Sultan Chand & Sons.

Reference Books:

1. Essentials of Management by Koontz H. and Weihrich H., Tata McGraw- Hill Publishing Co. Ltd., New Delhi, 12th Edition.
2. Management by Stoner J, Prentice-Hall of India Ltd., New Delhi, 6th Edition.
3. Principles and Practices of Management and Business Communication by Anupam Karmakar,Pearson.