Annexure E

FACULTY OF COMPUTER SCIENCE & IT

SYLLABUS FOR

Diploma in Computer Applications

(Semester I-II)

Under Credit Based Continuous Evaluation Grading System

(CBCEGS)

Session: 2024-25

The Heritage Institution

KANYA MAHA VIDYALAYA
JALANDHAR
(Autonomous)

PROGRAM SPECIFIC OUTCOMES

Diploma in Computer Applications

Session 2024-25

After completing the Diploma Course in Computer Applications, the Students will be able to:

PO1: Comprehend the fundamentals of computer system and its basic components- Hardware & Software.

PO2: Get familiar with various concepts of computer networks, communication media and use of numerous internet applications efficiently for personal as well as professional purpose.

PO3: Manage all office automation tasks from word processing to making presentations, from handling worksheets to managing databases in an efficient manner.

PO4: Perform various Creative Design applications like photoshop & CorelDraw to design or edit photos.

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF ONE YEAR DIPLOMA PROGRAMME

DIPLOMA IN COMPUTER APPLICATIONS

Session 2024-25

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**	
DCAL- 1111	Information Technology and Operating System	C	4 -0-0	4 -0-0	4	100	80	-	20	3
DCAL - 1112	PC Computing–I (Back Office Operations)	C	4 -0-0	4 -0-0	4	100	80	-	20	3
DCAL-1113	Programming in C	C	4 -0-0	4 -0-0	4	100	80	-	20	3
DCAP- 1114	Lab on PC Computing–I (Back Office Operations)	C	0-0-4	0-0-2	2	50	-	40	10	3
DCAP – 1115	Lab on Programming in C	C	0-0-4	0-0-2	2	50	-	40	10	3
DCAP-1116	Lab on Typing Skills	S	0-0-4	0-0-2	2	50	-	40	10	3
TOTAL CREDITS				18		450				

Note:
C – Compulsory
S-Skill Based

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF ONE YEAR DIPLOMA PROGRAMME

DIPLOMA IN COMPUTER APPLICATIONS

Session 2024-25

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**	
DCAL - 2111	Database Management System	C	4 -0-0	4 -0-0	4	100	80	-	20	3
DCAL -2112	Internet Applications	C	4 -0-0	4 -0-0	4	100	80	-	20	3
DCAP – 2113	Lab on Database Management System	C	0-0-4	0-0-2	2	50	-	40	10	3
DCAP-2114	Lab on Creative Design	C	0-0-4	0-0-2	2	50	-	40	10	3
DCAP-2115	Lab on Internet Applications	C	0-0-4	0-0-2	2	50	-	40	10	3
DCAD-2116	Minor Project	C	0-0-8	0-0-4	4	100	-	80	20	3
TOTAL CREDITS				18		450				

Note:

C - Compulsory

Diploma in Computer Applications Semester – I

Session 2024-25

COURSE CODE: DCAL–1111

INFORMATION TECHNOLOGY AND OPERATING SYSTEM

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: Describe, contrast and compare different types of Operating System.

CO4: Create folder, shortcuts and manage files in Windows.

Diploma in Computer Applications Semester – I

Session 2024-25

COURSE CODE: DCAL–1111

INFORMATION TECHNOLOGY AND OPERATING SYSTEM

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

Theory: 80

CA: 20

L-T-P
4-0-0

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

Fundamentals of Computer: Introduction to computer, Applications of computer, Components of computers (Input unit, Output Unit, Memory Unit & CPU), Types of software- System Software, Application Software.

Input Devices: Keyboards, Mouse, Joystick, Track Ball, Light Pen

UNIT II

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 Operating System, Types of Operating systems: Multiuser, Multitasking and Multiprogramming, Functions of Operating System, Booting a System, Language Processors: Compiler, Assembler, Interpreter, Linker and Loader.

UNIT IV

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,

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.

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.

Diploma in Computer Applications Semester – I

Session 2024-25
COURSE CODE: DCAL–1112
PC COMPUTING–I
(BACK-OFFICE OPERATIONS)

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.

Diploma in Computer Applications Semester – I

Session 2024-25
COURSE CODE: DCAL–1112
PC COMPUTING–I
(BACK-OFFICE OPERATIONS)

Examination Time: 3 Hrs. **Max. Marks: 100**
Theory: 80
CA: 20

L-T-P
4-0-0

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

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, 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 wizard 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.

Diploma in Computer Applications Semester – I

Session 2024-25
COURSE CODE: DCAL–1113
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 such as arrays, functions and strings to provide solution in different problem domains.

CO4: Work with pointers, structures and union.

Diploma in Computer Applications Semester – I

Session 2024-25
COURSE CODE: DCAL–1113
PROGRAMMING IN C

Examination Time: 3 Hrs. **Max. Marks: 100**
Theory: 80
CA: 20

L-T-P
4-0-0

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

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.*

Diploma in Computer Applications Semester – I

Session 2024-25

COURSE CODE: DCAP–1114

LAB ON PC COMPUTING–I

(BACK OFFICE OPERATIONS)

Examination Time: 3 Hrs. **Max. Marks: 50**

Practical: 40

CA: 10

L-T-P
0-0-2

Lab on PC Computing–I (Back Office Operations)

Diploma in Computer Applications Semester – I

Session 2024-25

COURSE CODE: DCAL–1115

LAB ON PROGRAMMING IN C

Examination Time: 3 Hrs.

Max. Marks: 50
Practical: 40
CA: 10

L-T-P
0-0-2

Lab on Programming in C.

Diploma in Computer Applications Semester – I

Session 2024-25
COURSE CODE: DCAP–1116
LAB ON TYPING SKILLS

Course Outcomes:

After successful completion of this course, students will able to:

CO1: Develop correct typing techniques

CO2: Type key data quickly and accurately

CO3: demonstrate operational skills in using the computer

CO4: Type accurately, at a rate of approximately 35 words per minute

Diploma in Computer Applications Semester – I

Session 2024-25
COURSE CODE: DCAP–1115
LAB ON TYPING SKILLS

Examination Time: 3 Hrs.

Max. Marks: 50
Practical: 40
CA: 10

L-T-P
0-0-2

Lab based on Typing skills to increase speed of typing in English

Diploma in Computer Applications Semester – II

(Session 2024-25)
COURSE CODE: DCAL - 2111
DATABASE MANAGEMENT SYSTEM

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

CO1: Comprehend different components and architecture of database management system.
CO2: Comprehend various database models and normalization of data.
CO3: Apply SQL to formulate queries and design basic level of database.
CO4: Comprehend the use of Programming Language constructs like function, procedure, packages etc. in database.

Diploma in Computer Applications Semester – II

(Session 2024-25)
COURSE CODE: DCAL–2111
DATABASE MANAGEMENT SYSTEM

Examination Time: 3 Hrs. **Max. Marks: 100**
Theory: 80
CA: 20

L-T-P
4-0-0

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: Introduction to Database Management System, Components of DBMS, Three-level architecture, Data Mapping.

UNIT–II

Data Models: Hierarchical Model, Network Model and Relational Model.
Normalization of Data: First, Second and Third Normal form.
Introduction to RDBMS, Types of Keys.

UNIT–III

ORACLE : Introduction to Oracle & Features .
SQL– DDL, DML, DCL, Joins & Sub query, Union, Intersection, Minus, Built in Functions, Views, Sequences, Indexing.

UNIT-IV

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

References/Textbooks:

1. Silberschatz, Korth & Sudarshan, Database Systems Concepts, McGraw-Hill Inc.(2020), 7^{th} edition.
2. C.J. Date, An Introduction of Database System, Addison-Wesley Publishing co.(2003), 8^{th} edition.
3. Anshuman Sharma, Fundamentals of DBMS, Lakhanpal Publishers (2016), 4^{th} edition.
4. Raghu Ramakrishnan, Johannes Gehrke, Database Management Systems, McGraw Hill Education (2014), 3^{rd} edition.
5. Atul Kahate, Introduction to Database Management Systems, Pearson (2004), 1^{st} edition.
6. Ivan Bayross, SQL/PL/SQL. The Programming Language of Oracle, BPB Publications (2010), 4^{th} edition.

Diploma in Computer Applications Semester – II
(Session 2024-25)
COURSE CODE: DCAL - 2112
INTERNET APPLICATIONS

Course Outcomes:

After passing this course the student will be able to:

CO1: Comprehend basics of internet and emails.
CO2: Comprehend the basics of World Wide Web and different electronic payment methods.
CO3: Create static webpages using HTML.
CO4: Apply styling to static webpages using different CSS properties.

Diploma in Computer Applications Semester – II
(Session 2024-25)
COURSE CODE: DCAL - 2112
INTERNET APPLICATIONS

Examination Time: 3 Hrs. **Max. Marks: 100**
Theory: 80
CA: 20

L-T-P
4-0-0

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

Internet: Introduction, working, applications. DNS, IP addresses), Search engine and its working. File Transfer Protocol (FTP), Telnet, HTTP.

E–Mail Basics: Introduction, Advantage and disadvantage, structure of an e–mail message, working of e–mail (sending and receiving messages).

UNIT-II

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

Payment gateway: Popular payment methods (Net-banking, m-Banking, UPI, Debit/Credit Card, Mobile Wallets)

UNIT-III

HTML: Introduction, Features, Program Structure, Headings, Paragraph, Styling, Formatting, Hyperlink, Image, Table, List, Frame, Block, Entities, Form, Form elements.

UNIT-IV

CSS: Introduction, Advantages and Limitations, types, selector, colors, background, box model, text, font, display, position, z-index, float, clear, rounded corners, 2D Transformations, Transitions and Animations.

References/Textbooks:

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

Diploma in Computer Applications Semester – I

Session 2024-25
COURSE CODE: DCAP–2113

LAB ON DATABASE MANAGEMENT SYSTEM

Examination Time: 3 Hrs.

Max. Marks: 50
Practical: 40
CA: 10

L-T-P
0-0-2

Lab on Database Management System

Diploma in Computer Applications Semester – I

Session 2024-25

COURSE CODE: DCAP–2114

Course Outcomes:

After passing this course the student will be able to:

CO1: Apply different tools to edit image.

CO2: Comprehend to create different logos.

CO3: Apply different tools to create magazine covers, business cards and banners.

CO4: Apply different kind of transformation, grouping, special effects, etc.

LAB ON CREATIVE DESIGN

Diploma in Computer Applications Semester – I

Session 2024-25
COURSE CODE: DCAP–2114

LAB ON CREATIVE DESIGN

Examination Time: 3 Hrs. **Max. Marks: 50**
Practical: 40
CA: 10

L-T-P
0-0-2

GIMP: Selection Tools-Rectangle, Ellipse, Free Select, Foreground Select, by Color Select, Fuzzy Select, Paint Tools-Brush Tools, Bucket Fill, Gradient, Gradient, Pencil, Paintbrush, Eraser, Clone, Heal, Blur/Sharpen, Smudge, Dodge/Burn, Transform Tools- Move, Crop, Rotate, Scale, perspective, Flip, Paths, Layers.

GIMP: Change the background of images, Image Manipulation, Transform & Distort Images, Create logos.

Inkscape: Object Creation- Drawing Tools, Shape Tools, Text Tools, Clones, Object Manipulation- Transformation, Grouping of objects, Layering of objects, Styling Objects- Fill, Stroke, Filters, Operations on paths, Text Support.

Inkscape: Business card, Magazine cover, Banner design, Create logos.

Diploma in Computer Applications Semester – I

Session 2024-25

COURSE CODE: DCAP–2115

LAB ON INTERNET APPLICATIONS

Examination Time: 3 Hrs.

Max. Marks: 50
Practical: 40
CA: 10

L-T-P
0-0-2

Lab on Internet and Web Designing

Session 2024-25

Diploma in Computer Applications Semester – II

MINOR PROJECT

COURSE CODE: DCAD–2116

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.

Session 2024-25

Diploma in Computer Applications Semester – II

MINOR PROJECT
COURSE CODE: DCAD–2116

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 Minor 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 Minor Project Title.