

SYLLABUS FOR THE BATCH FROM THE YEAR 2024 TO YEAR 2025

Programme Code: DCA

Programme Name: Diploma in Computer Applications

(Semester I-II)

Examinations: 2024-2025



P.G. Department of Computer Science & Applications

Khalsa College, Amritsar

DIPLOMA IN COMPUTER APPLICATIONS

Programme name: Diploma in Computer Applications
Programme code: DCA
Programme Duration :1 year

Programme Objectives:

1.	Diploma program is aimed at towards building a prospective career in the field of computer application.
2.	The program is designed with the objective to provide knowledge and skills in the various aspects of computer applications.
3.	Students will also be trained in the latest trends of information technology.

Programme Specific Outcomes (PSOs):

PSO-1.	Theoretical and practical knowledge of MS Word, MS PowerPoint, MS Excel and MS Access.
PSO-2.	Usage of DBMS design and administration.
PSO-3.	Practical Skills Using SQL and PL/SQL.
PSO-4.	Gather data to analyze and specify the requirements of a system.
PSO-5.	Understanding the basic components of computers and terminology.

DIPLOMA IN COMPUTER APPLICATIONS
Semester – I

Sr. No.	Course Code	Course Name	Distribution of The Marks				Credit Distribution of The Course			Total Credit Per Course	Page no
			Theory	Practical	Internal Assessment	Total	L	T	P		
1	DCA-111	Information Technology and Operating System	75	-	25	100	3	1	0	4	4-5
2	DCA-112	PC Computing-I	75	-	25	100	3	1	0	4	6-8
3	DCA-113P	Lab I : Based on Information Technology and Operating System	-	75	25	100	0	0	4	4	9
4	DCA-114P	Lab II: Based on PC Computing-I	-	75	25	100	0	0	4	4	10
Total Credits=16											

DIPLOMA IN COMPUTER APPLICATIONS (SEMESTER-I)
DCA-111: Information Technology and Operating System
Discipline Specific Course (DSC)

Time: 3 Hours

Credits		
L	T	P
3	1	0

Total Marks: 100

Theory Marks: 75

Theory Internal Assessment Marks: 25

Note for paper setter and students:

- 1. Medium of Examination is English Language.**
- 2. There will be five sections.**
- 3. Section A is compulsory and will be of 15 marks consisting of 8 short answer type questions carrying 2.5 mark each covering the whole syllabus. The answer should not exceed 50 words. The students will have to attempt any 6 questions in this section.**
Sections B, C, D and E will be set from units I, II, III & IV respectively and will consist of two questions of 15 marks each from the respective unit. The students are required to attempt one question from each of these sections.

Course Objectives:

1.	To familiarize the various parts of computer.
2.	To study application of computers in different fields.
3.	To recall the evolution of computers through various generation.
4.	To acquire the knowledge of working of input and output devices.

UNIT-I

Basics Of Computer: Characteristics of Computer, Block diagram of computer system, Central Processing unit, Secondary storage devices, File system, Input Devices, output Devices, Multimedia and applications, Computer Software and Hardware, Generations of Computer, Characteristics of Computer, Careers in Computers.

Introduction to Windows: Basics of Operating System, Windows, User Interface, Windows Setting and Advanced function associated with the operating system, Functions of OS, Types of Operating system, Commands of MS- DOS, Unix and its commands, Linux, Properties of desktop, Booting and its types, Differentiate Application Software with System Software.

UNIT-II

Internet and its Usage: Applications of Internet, e-governance, e-commerce, social media, Email, creating e-mail account, Composing email, Sending group email, web browsers, how to choose best browser, web pages, web sites, web servers.

Multimedia: Adobe Suite, File Formats, Multimedia Components, Compression and sharing of Multimedia.

UNIT-III

Basic Networking Concepts: Types of Networks, LAN,MAN,WAN, Network Modes, Simplex, half duplex, full duplex, Networking Devices, Hub, Switch, Modem, Gateway, Bridge, Router, Media uses for transmission.

UNIT-IV

Programming Languages: Classification Machine Code, Assembly Language, Higher Level Languages, Fourth Generation languages.

References:

1. Computer Fundamentals - P.K. Sinha Sixth Edition, BPB Publications.
2. Introduction to Computers – N. Subramanian, McGraw Hill Education India Pvt Ltd (5 March 2001)
3. Introduction to Computers- Peter Norton, Fifth Edition McGraw Hill Education.

Course Outcomes (COs):

CO-1.	Understanding the progress of information and communication technologies (ICT) and their role in modern World:
CO-2.	Gain insight of working of input and output devices.
CO-3.	Exploring different kinds of software.
CO-4.	Managing information in a computer and/or similar electronic devices in the classroom.
CO-5.	Possess the knowledge of importance of operating system in computer.

DIPLOMA IN COMPUTER APPLICATIONS (SEMESTER-I)
DCA-112: PC Computing-I
Discipline Specific Course (DSC)

Time: 3Hours

Credits		
L	T	P
3	1	0

Total Marks:100

Theory Marks:75

Theory Internal Assessment Marks: 25

Note for paper setter and students:

1. **Medium of Examination is English Language.**
2. **There will be five sections.**
3. **Section A is compulsory and will be of 15 marks consisting of 8 short answer type questions carrying 2.5 mark each covering the whole syllabus. The answer should not exceed 50 words. The students will have to attempt any 6 questions in this section.**
Sections B, C, D and E will be set from units I, II, III & IV respectively and will consist of two questions of 15 marks each from the respective unit. The students are required to attempt one question from each of these sections

Course Objectives:

1.	To be proficient in office automation applications and handle the word processing software.
2.	Working with windows.
3.	To create presentation using MS PowerPoint.
4.	Understand that in today's commercial world, automation helps the users with a sophisticated set of commands to format, edit, and print text documents.
5.	Use it as valuable and important tools in the creation of applications such as newsletters, brochures, charts, presentation, documents, drawings and graphic images.

UNIT-I

Introduction to Windows

1.1 Origin of windows

a) **Parts of Windows**

- The Desktop, the taskbar
- Start Menu
- The windows
- Icons
- About my computer icon
- Recycle bin
- Folders—creation and definition
- Windows explorer(definition)
- Shortcut icons with creation and definition.
- Gadgets
- Screen saver
- Screen resolution
- Hide folder or files
- Change Time and date

- Adding or removing Window password
- Control panel
- Add or remove program
- Add network
- Notification on desktop
- Breifcase

Introduction to MS–Office -2010

Introduction to Word (Word for Windows)

1. Introduction to Word
2. Anatomy of a Word Window
3. Creating new document
4. Opening an existing document
5. Insert (files, objects, date & time, symbols, clipart, word art, smart art, shapes)
6. Editing a document
7. Deleting text, replacing text, moving and copying text
8. Page setup
9. Margins and gutters
10. Changing fonts and font size
11. To make text bold, italic or underline
12. Line spacing
13. Centering, right alignment and left alignment

UNIT–II

14. Headers and footers (page numbers, title, date, time)
15. Saving documents
16. Save, Save As Save Web
17. Spellchecker
18. Thesaurus
19. Bookmark
20. Watermark
21. Hyperlink
22. Citations and Bibliography
23. Printing
24. Methods Creating a table and operations
25. Screen shot
26. Equation
27. Table of Content
28. Macros
29. Borders and shading
30. Mail merge using wizard
31. Using word and word documents with other applications

UNIT-III

MS-POWERPOINT -2010

1. Introduction to MS PowerPoint
2. PowerPoint Elements
 - Templates
 - Wizards
 - Views
 - Color Schemes
3. Adding text, adding title, moving text area, resizing text boxes, adding art, multimedia (audio, video)
4. Starting a new slide
5. Starting a Slide show (beginning and current slide)
6. Saving Presentation
7. Slide setup, slip orientation

UNIT-IV

8. Rehearse Timing
9. Record Slide show
10. Themes, background
11. Transition
12. Animation
13. Printing Slides
14. Views: Slide View, Slide sorter view, notes view, outline view
15. Different types of formatting
16. Creating Graphs
17. Displaying slide show and adding multi-media

References:

1. Alexis Leon and Matheus Leon (2001), "Introduction to Computers with MS office 2000", 1st edition, Tata McGraw-Hill, New Delhi.
2. Srivastava, S.S (2002), "Ms-Office", Firewall Media, New Delhi
3. Sharma Anshuman, "A book of Fundamentals of Information Technology", Lakhanpal Publications 5th edition.
4. Windows Based Computer Courses by Gurvinder Singh & Rachpal Singh.

Course Outcomes:

CO-1	Develop skills of working with MS-Word, MS-PowerPoint.
CO-2	Understand and create a presentation using MS PowerPoint.
CO-3	Describe the features and functions of the categories of application software.
CO-4	Understanding about windows and its parts .
CO-5	Demonstrate the ability to apply application software in an office environment.

DIPLOMA IN COMPUTER APPLICATIONS (SEMESTER-I)
DCA-113P: Lab I - Based on Information Technology and Operating System

Total Marks: 100
Practical Marks: 75
Internal Assessment Marks: 25

Credits		
L	T	P
0	0	4

Course Objectives:

1.	To familiarize the various parts of computer.
2.	To study application of computers in different fields.
3.	To recall the evolution of computers through various generation.
4.	To acquire the knowledge of working of input and output devices.

Practical Based on Information Technology and Operating System

Course Outcomes (COs):

CO-1.	Understanding the progress of information and communication technologies (ICT) and their role in modern World:
CO-2.	Gain insight of working of input and output devices.
CO-3.	Exploring different kinds of software.
CO-4.	Managing information in a computer and/or similar electronic devices in the classroom.
CO-5.	Possess the knowledge of importance of operating system in computer.

DIPLOMA IN COMPUTER APPLICATIONS (SEMESTER-I)
DCA-114P: PC Computing-I
Discipline Specific Course (DSC)

Time: 3Hours

Credits		
L	T	P
0	0	4

Total Marks:100
Practical Marks:75
Internal Assessment Marks: 25

Course Objectives:

1.	To be proficient in office automation applications and handle the word processing software.
2.	Working with windows.
3.	To create presentation using MS PowerPoint.
4.	Understand that in today's commercial world, automation helps the users with a sophisticated set of commands to format, edit, and print text documents.
5.	Use it as valuable and important tools in the creation of applications such as newsletters, brochures, charts, presentation, documents, drawings and graphic images.

Practical Based on PC Computing-I

Course Outcomes:

CO-1	Develop skills of working with MS-Word, MS-PowerPoint.
CO-2	Understand and create a presentation using MS PowerPoint.
CO-3	Describe the features and functions of the categories of application software.
CO-4	Understanding about windows and its parts .
CO-5	Demonstrate the ability to apply application software in an office environment.

DIPLOMA IN COMPUTER APPLICATIONS

Semester – II

Sr. No.	Course Code	Course Name	Distribution of The Marks				Credit Distribution of The Course			Total Credit Per Course	Page No
			Theory	Practical	Internal Assessment	Total	L	T	P		
1	DCA-121	Database Management System	75	-	25	100	3	1	0	4	12-13
2	DCA-122	PC Computing–II	75	-	25	100	3	1	0	4	14-15
3	DCA-123P	Lab I: Based on Database Management System	-	75	25	100	0	0	4	4	16
4	DCA-124P	Lab II: Based on PC Computing–II	-	75	25	100	0	0	4	4	17
Total Credits=16											

DIPLOMA IN COMPUTER APPLICATIONS (SEMESTER-II)
DCA-121: Database Management Systems
Discipline Specific Course (DSC)

Time: 3 Hours

Total Marks: 100

Theory Marks: 75

Theory Internal Assessment Marks: 25

Credits		
L	T	P
3	1	0

Note for paper setter and students:

- 1. Medium of Examination is English Language.**
- 2. There will be five sections.**
- 3. Section A is compulsory and will be of 15 marks consisting of 8 short answer type questions carrying 2.5 mark each covering the whole syllabus. The answer should not exceed 50 words. The students will have to attempt any 6 questions in this section.**
Sections B, C, D and E will be set from units I, II, III & IV respectively and will consist of two questions of 15 marks each from the respective unit. The students are required to attempt one question from each of these sections

Course Objectives:

- | |
|---|
| 1. To provide a sound introduction to the discipline of database management as a subject in its own right, rather than as a compendium of techniques and product-specific tools. |
| 2. To familiarize the participant with the nuances of database environment towards an information-oriented data-processing oriented framework. |
| 3. Describe the concepts of transactions and transaction processing and the issues, techniques related to concurrency and recovery manager. |

UNIT-I

Introduction to Database Management System, Components of DBMS, E.R. Diagrams, Data Models, Hierarchical Model, Network Model and Relational Model.

UNIT-II

Concept of Database Security, Protection, Integrity, Recovery, Concurrency control, Idea of Distributed Databases, Knowledge Base/Expert Systems.

UNIT-III

ORACLE10g:SQL.*

PLUS

Introduction to Oracle10g

SQL–DQL, DML, DCL

Join methods & Subquery, Union, Intersection, Minus, Tree Walking

Built in Functions, Views, Security amongst users, Sequences, Indexing Object Oriented

Features of Oracle10g

UNIT – IV

PL/SQL

Introduction to PL/SQL, Fundamentals of PL/SQL Language, Cursors–Implicit & Explicit
Procedures–introduction, creating, modifying, executing and dropping procedures, Functions &
Packages, Database Triggers, types of triggers.

References:

1. C.J.Date: DataBase Management Systems, 8th edition, Pearson.
2. Database Management System By B.C. Desai, Galgotia Publication, 2010.
3. Simplified Approach to DBMS– Kalyani Publishers.
4. Oracle – Developer – 2000 by Ivan Bayross.

Course Outcomes:

CO-1.	Describe the fundamental elements of relational database management systems.
CO-2.	Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
CO-3.	Design ER-models to represent simple database application scenarios.
CO-4.	Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.
CO-5.	Summarize concurrency control protocols and recovery algorithms.

**DIPLOMA IN COMPUTER APPLICATIONS
(SEMESTER-II)
DCA-122: PC Computing-II
Discipline Specific Course (DSC)**

Time: 3 Hours

Total Marks: 100

Theory Marks: 75

Theory Internal Assessment Marks: 25

Credits		
L	T	P
3	1	0

Note for paper setter and students:

- 1. Medium of Examination is English Language.**
- 2. There will be five sections.**
- 3. Section A is compulsory and will be of 15 marks consisting of 8 short answer type questions carrying 2.5 mark each covering the whole syllabus. The answer should not exceed 50 words. The students will have to attempt any 6 questions in this section.
Sections B, C, D and E will be set from units I, II, III & IV respectively and will consist of two questions of 15 marks each from the respective unit. The students are required to attempt one question from each of these sections**

Course Objectives:

1. To be proficient in using the MS Excel and MS Access applications.
2. To perform the calculations using the Excel worksheet.
3. To create a database using MS Access.
4. Operate a variety of advanced spreadsheet and database functions.

UNIT-I

MS-EXCEL

- Introduction to Worksheet/Spreadsheets, Creating a simple Worksheet, Apply different functions on different data in excel.
- Creation of graphs, editing in graphs,

UNIT-II

- 2d and 3d charts.
- Linking different worksheets, sorting the data, What-if analysis(Data Sort, Fill, Query Filters), Printing the worksheet.

UNIT-III

MS-Access

- Introduction, understanding to databases, creating the tables, entering records, deleting tables.

- b) Forms, formatting forms, forms to tables.
- c) Building reports, formatting reports, adding graphs to your reports.

UNIT-IV

MS-Outlook

- a) Introduction to Outlook, Adding an Additional Email Account, customizing Outlook.
- b) Outlook Interface, Addressing the Message.
- c) E-mail Options, Setting E-mail Defaults, E-mail Settings.

References:

1. PC Computing by R.K.Taxali (2017).
2. PC Software by Rachpal Singh & Gurinder Singh (2009).

Course Outcomes:

CO 1	Use spreadsheets and database software.
CO 2	Applying queries and creating forms, reports.
CO 3	Adding graphs to your reports in MS Access
CO 4	Creating a worksheet/spreadsheet and applying various formulas on it.
CO 5	Creating graphs or charts in Excel and comparing the data.
CO 6	Understand and create a database using MS Access.
CO 7	Filtering the data of the worksheet.
CO 8	Applying various operations like data sorting.

DIPLOMA IN COMPUTER APPLICATIONS (SEMESTER-II)
DCA-121: Database Management Systems
Discipline Specific Course (DSC)

Time: 3 Hours

Total Marks: 100

Practical Marks: 75

Internal Assessment Marks: 25

Credits		
L	T	P
0	0	4

Course Objectives:

- | |
|--|
| 1. To provide a sound introduction to the discipline of database management as a subject in its own right, rather than as a compendium of techniques and product-specific tools. |
| 2. To familiarize the participant with the nuances of database environment towards an information-oriented data-processing oriented framework. |
| 3. Describe the concepts of transactions and transaction processing and the issues, techniques related to concurrency and recovery manager. |

Practical Based on Database Management Systems

Course Outcomes:

CO-1.	Describe the fundamental elements of relational database management systems.
CO-2.	Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
CO-3.	Design ER-models to represent simple database application scenarios.
CO-4.	Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.
CO-5.	Summarize concurrency control protocols and recovery algorithms.

**DIPLOMA IN COMPUTER APPLICATIONS
(SEMESTER-II)
DCA-124P: Lab I: Based on PC Computing-II**

**Total Marks: 100
Practical Marks: 75
Internal Assessment Marks: 25**

Credits		
L	T	P
0	0	4

Course Objectives:

5. To be proficient in using the MS Excel and MS Access applications.
6. To perform the calculations using the Excel worksheet.
7. To create a database using MS Access.
8. Operate a variety of advanced spreadsheet and database functions.

Practical Based on PC Computing-II

Course Outcomes:

CO 1	Use spreadsheets and database software.
CO 2	Applying queries and creating forms, reports.
CO 3	Adding graphs to your reports in MS Access
CO 4	Creating a worksheet/spreadsheet and applying various formulas on it.
CO 5	Creating graphs or charts in Excel and comparing the data.
CO 6	Understand and create a database using MS Access.
CO 7	Filtering the data of the worksheet.
CO 8	Applying various operations like data sorting.