MANONMANIAM SUNDARANAR UNIVERSITY
TIRUNELVELI, TAMIL NADU
DIRECTORATE OF DISTANCE AND CONTINUING EDUCATION
(Effective from the Academic Year 2016-2017 onwards)

Course: P.G.D.C.A.
Duration: 1 year
Eligibility: Pass in any Degree
Examination Regulations: As applicable to any PG program offered through DD&CE
(Refer: http://www.msuniv.ac.in/DistanceEducation/DD&CESyllabus)

Subject Code	Title	Credits	Internal	External	Maximum
DKA11	Fundamentals of Computer	3	20	80	100
DKA12	Object Oriented Programming using C++	3	20	80	100
DKA13	System Analysis and Design	3	20	80	100
DKA14	Internet and its Applications	3	20	80	100
DKA15	Visual Programming using VB	3	20	80	100
DKA16	Client/Server Computing with Oracle	3	20	80	100
DKA17	Advanced Data Structure	3	20	80	100
DKA18	E-Commerce (Applications)	3	20	80	100
DKAP1	Practical I: M.S. Office & OOPs Lab	6	20	80	100
DKAP2	Practical II: VB & Oracle Lab	6	20	80	100

DKA11: FUNDAMENTALS OF COMPUTERS

Unit I: Components of a computer – Input Devices – Central Processing Unit – Output Devices – Memory – Secondary Storage – Hardware and Software – Operating system.

Unit II: DOS Commands – Internal Commands – External Commands – GUI-GUI concepts – Character User Interface.

Unit III: Desktop – My computer – Network Neighbourhood- Recycle Bin – The Task Bar- Start Button – Running Programs – What's New in Windows' 95- Graphical Device Interface- Dynamic Data Exchange (DDE_ - Object Linking & Embeding (OLE) – Networking.

Unit IV: Programs – Documents – Settings – Find – Help – Run – Shut down- Working with Start Button – Programs item – Close a program – Toggle Between programs – settings, item – Control Panel – Display Option – Find item- Shut down.

Unit V: Working with Files and Folders – Windows Explorer item – What is there on my computer Create a new folder Copy a file to floppy – Delete a file or folder – Recycle Bin- Multiple Selection- Printers- Setup Printer- Document Printing – Installing Application Programs – Installing Hardware System Tools – Scan Disk option – Data Compression Option – Defragmenting Disk option – Paint Brush.

Reference Book: Computer Fundamentals and windows with Internet Technology – N. Krishnan – Scitech publications India (P) Ltd.,

DKA12: OBJECT ORIENTED PROGRAMMING USING C++

Unit-I

Data types, operators and statements: Identifiers and Keywords- constants C++ Operators – Type Conversion, Declaration of variables – statements – simple C++ programs – Manipulator functions- Input and Output (I/O) Stream flags, Control Statements, Conditional expressions – Switch Statement – Loop Statement – Breaking Control Statements.

Unit-II

Functions and Program Structures: Defining a function- Types of functions – Actual and formal arguments- local and global variables – default arguments – multifunction program – storage class specifiers – Recursive function- Preprocessors- Header files – Standard functions- Arrays and Functions – Multidimensional Arrays.

Pointers: Declaration – Pointer Arithmetic – Pointers and Functions – Pointers and Arrays – Pointers and Strings- Pointers to Pointers.

Unit-III

Structures, Unions and Bit Fields- Nested Structure – Unions – Bit fields – Enumerations – Classes and Objects : Declaration of class – Member functions- Defining the object of a class – accessing a member of class- arrays of class objects – pointers and classes – Unions and classes – Constructors – Destructions – Inline member functions – Static class members – friend functions – Dynamic Memory Allocations.

Unit-IV

Inheritance – Single Inheritance – Types of Base Classes – types of derivations – Ambiguity in single inheritance – multiple inheritance – container classes – Overloading – function overloading – operator overloading – overloading of binary operators – overloading of unary operators.

Unit-V

Polymorphism- Polymorphism with pointers – virtual functions – late binding abstract classes – constructor under inheritance – destructors under inheritance – virtual destructors – Virtual base classes – templates and exception handling – function template – class template – exception handling Data file Operations- Opening and closing of files – steam state member functions – Reading /writing a character from a file – binary file operations – classes and file operations – Array of class objects and fill operations-Nested classes and file operations – Random Access File Processing.

Reference Book: Programming with C++ - D. Ravichandran – Tata McGraw Hill Publishing Company Limited – 1999.

DKA13: SYSTEM ANALYSIS AND DESIGN

Unit I: System Concepts and Information System Environment – Business System Concepts – Information – System Development life cycle- Introduction to CASE tools – Role of system Analysis – Communication skills.

Unit II: Requirement Analysis and methodologies- Sampling – Interviews- Questionnaires- Observing the office environment – Prototyping – Structured system analysis techniques and practices – Cost Benefit Analysis.

Unit III: System Design- The process and stages of system design- Input/Output and Forms design- File organization – Database design.

Unit IV: System Implementation-Software Maintenance- Review Plan – Hardware, Software selection and the computer contract – Project scheduling.

Unit V: System Testing – Quality Assurance- Test Plan – Quality Assurance Goals – Audit trail – Security, Disaster/ Recovery and Ethics in System Development.

DKA14: INTERNET AND ITS APPLICATIONS

Unit I What is Internet – History of Internet – How the Web works? –Web Servers and Clients – Looking at connection as ISP – ISDN – Dial up or Leased Connection – Domain Naming System – Registering our own Domain Name – Intranet – Overview of Web Browsers – hypertext – Hyper Text Markup Language- Basic Components – Formatting the text HTML- URL- Protocol – Server name – Port – Relative URLs Absolute URLs – Linking to other HTML Documents – Linking Inside the same Documents – Linking to other internet services – File Transfer Protocol(FTP)- Gopher.

Unit II

List in HTML – Displaying Text in lists – Ordered List – Using Ordered Lists – Using Netscape Extensions – Unordered Lists – Using <UL> Tag – Directory Lists – Definition Lists – Combining Lists Types – Graphics and Web Pages – Image Format and Browsers – Graphics and HTML Documents – Images and Hyperlink anchors - - Images Maps – HTML Tables- Aligning Table Elements – Row and Column Spanning – Netscaps Table- Enhancements- Frames in HTML – Frameset Container – HTML Forms – The <Input> Tag – Dynamic Documents – Background Graphics and colour – Microsoft Internet Extensions – Font Tag Enhancements – Scrolling Marquees.

Unit III – Data – Steps in Programming Process – Programming Specification – Problem Definition – Requirement Analysis – Design a Program Model – Determine or correctness of an Algorithm – Code Program- Test and Debug – Debugging – Documentation – Structured Programming Techniques Program Tools – Flow chart – Why Structured Programs? – Structures – Sequence Program Flow – Decision Structure – Iteration Structure – Tools for Structured Programming – Structure Charts – Pseudo Codes – Structured Programming issues – Maintenance – Portability – Readability – Program verification – Modularity – Problem solving – Approaches – Top – Down Approach – Brute – Force Approach – Testing Methods – Black – Box Approach – Glass Box Approach.

Unit – IV

Client – Side and Server – Side Programming Languages n- Declaring Variables Commenting – Adding Data and Time Functions to Scripts – Using Mathematical Operators and Functions – Using Conditional Statements.

Unit – V

String Functions – Creating Subroutines – Creating Functions – Using Logical Connectives and Operators – Using Loops to Repeat Code – A Simple Page – VBScript and Forms – Hiding Errors.

Reference: Graham – HTML 4.0 Source Book – Ackermann- Learning to use the Internet, - Mary Jane Mara – VB Script Source Book; Paul Lomax and Ronald Petrusha – Learning VBSCript.

DKA15: VISUAL PROGRAMMING USING VB

Unit I: Introduction to Window's 2000 – Operating System Features – Basic Operations – Fundamental of Visual Basic : Anatomy of Visual Basic Program – The Code Window – Statements in Visual Basic – Assignment and property setting – Variables – Strings – Number constants, repeating operations, making decisions.

Unit II: Working with object at run time – Projects with multiple forms – Displaying information. The Printer object – Advanced programming techniques – Arrays – Pointers – Built in functions – User defined functions & procedures.

Unit III: Objects – Manipulation of objects in Visual Basic – Collections – Creating an object in Visual Basic- Building classes – Files- Sequential files – Random access files – Binary files – Sharing files.

Unit IV: Communicating with other windows application: Clip board-Activity windows application-Dynamic data exchange & OLE 2.
Data base features: Modern databases – data manager – Using the data control-Programming with data control-Monitoring changes to the database – SQL basics-Data base objects ADO.OLE. DB.

Unit V: Printing – Reports – Writing – Error handlers – Debugging Techniques – DHTML-Internet/ Intranet Applications using Visual Basic- Active X documents – Winsock Control.

Reference Book: Visual Basic 6.0 in 30 days- N. Krishnan and N. Saravanan – SCITECH publications India(P) Ltd.,

DKA16: CLIENT/SERVER COMPUTING WITH ORACLE

Unit-I: Basic Concepts

Introduction to Oracle Server – Data Dictionary – Table spaces and Data files – Data Blocks, Extents and Segments: - Schema Objects.

Unit-II: SQL   SQL*PLUS:-Basic SQL:

Unit-III: Schema Objects

Data Integrity – Creating and Maintaining Tables – Indexes Sequences Views – Users, Privileges and Roles – Synonyms.

Unit-IV: PL/SQL.

PL/SQL – Triggers – Stored Procedures and Functions – Packages – Cursors – Transaction.

Unit-V: Distributed Processing. Distributed Processing – Replication.

Text Book: Jose.A. Ramalho - Learn Oracle1, BPB Publications, 2000

DKA17: ADVANCED DATA STRUCTURE

Unit I

Introduction: Mathematics Review – A brief introduction to recursion. Algorithm analysis, Mathematics background – Model – What to analyze – Running time calculations.

Lists, Stacks, Queues: Abstract Data Types(ADTs) – The List ADT- The Stack ADT – The Queue ADT.

Unit II

Trees: Implementation of Trees – Tree Traversals with an application – Binary Trees – The Search Tree ADT – Binary Search Trees.

Hashing : General Idea – Hash function – Separate Chaining.

Priority Queues (Heaps): Model – Simple implementations – Binary Heap.

Unit III

Sorting: Preliminaries – Insertion Sort – Shellsort – Heapsort- Mergesort – QuickSort.

Unit IV

Graph Algorithms: Definition Topological Sort Shortest – Path Algorithms – Network How Problems – Minimum Spanning Tree – Applications of Depth – First Search.

Unit V

Algorithm Design Techniques: Greedy Algorithms – Divide and Conquer – Running Time of Divide and Conquer Algorithms – closest – Points problem – The Selection problem – Theoretical improvement for Arithmetic Problems.

Reference Book:
1. Mark Allen Weiss – Data Structures and Algorithm Analysis in C++, Addison Wesley, Chapters – 1.2 (1.2.1 to 1.2.4. only) 1.3, 2.1 or 2.4, 3.1, 3.2 (3.2.1 to 3.2.6 only), 3.3, 3.4, 4.1, 4.2, 4.3, 5.1 to 5.4, 6.1, 6.2, 6.3, 7.1 to 7.7, 9.1 to 9.6, 10.1, 10.2.

DKA18: E-COMMERCE APPLICATIONS

Unit 1: Introduction to E-Commerce: The Scope of E-Commerce – Definition – Internet – commerce – Electronic Markets – Electronic Data Exchange – Business Strategy in an Electronic Age: The value chain – supply chains – Porters value chain Model – Inter Organisational value chains – competitive Advantages using e-commerce.

Unit 2: Stategic implications of IT –Business capability – Strategy formulation and Implementation Planning – e-commerce implementation – e-commerce evaluation. Case Studies: Airline booking systems – Web Booking Systems – Competitive outcomes.

Unit 3: Business to Business Electronic Commerce: Inter-organisational Transactions- Electronic Markets- Advantages and Disadvantages of Electronic Markets – Advantages and Disadvantages of Electronic Markets and its future, Electronic Markets and is future. Electronic data Interchange (EDI): Definitions: Examples- EDI Technology-EDI- Communications – Implementation – EDI Agreements – Security, Purchasing On-line.

Unit 4: Business to Consumer Electronic Commerce: The e-shop – e-commerce technologies – consumer e-commerce advantages and disadvantages – Internet Concepts – TCP/IP- uses of Internet – Internet Age Systems.

Unit 5: A Page on the web – HTML Basics – Client Side Server side Scripting. The elements of e-commerce: Internet e-commerce security- A web site Evaluation Model – Internet Bookshops – Internet Banking – online share dealing – e-diversity- Technology Adoption.

Text Book:
1. E-commerce Logistics and Fulfillment – Debroah L. Bayles – Pearson Education Asia – Addison Wesley Longman (Singapore) Pte. Ltd.

Reference:
1. E-Commerce Logistics and Fulfillment – Deborah L. Bayles- Pearson Education Asia – Addison Wesley Longman (Singapore) Pte. Ltd.
2. Managing your e-commerce business – Brenda Kienan – 2nd edition – Prentice Hall of India, New Delhi – 2001.