

SHIVAJI UNIVERSITY, KOLHAPUR.



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Accredited By NAAC

Revised Syllabus For
**Post Graduate Diploma in Computer Applications
(P.G.D.C.A.)**

(Subject to the modifications will be made from time to time)
Syllabus to be implemented from June 2004.



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Revised Syllabus For
Post Graduate Diploma in Computer Applications(PGDCA)
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Introduction :-

An immense need was felt to make the course more comprehensive and application oriented the Diploma in Computer Management course need to be replaced by Post Graduate Diploma in Computer Applications.

Objective :-

The main objective of the Course is to impart adequate professional knowledge and Computer skills so as to enable the candidates to take up careers in the field of Information Technology and to equip with latest knowledge , skills and expertise pertaining to the tasks and responsibilities of Information Technology.

Duration of the Course :-

Duration : One year

Intake capacity :- 60

No. of computers :- 15

Eligibility :-

1. Graduate of any discipline (under 10+2+3) pattern of any recognised University..
2. A student who is pursuing any post graduate course of Shivaji University can be admitted to PGDCA course i.e. student may be allowed to do Simultaneously two courses. .

Structure of the Course :-

Sr. No.	Subject	Weekly work load In hours		University. Examination		Internal Marks
				Theory	Practical	
1	Modern Operating Environments and MS-Office	2	1	70	20	10
2	E-Commerce and Web Design	2	1	70	20	10
3	Windows Programming with Visual Basic	3	1	70	20	10
4	Software Engineering and Accounting Package	2	1	70	20	10
5	Business Data Processing with Oracle	3	1	70	20	10
6	Project Work & Viva voce		1	--	50*	50
	Total	12	6	350	150	100

Project Work :-

The Project report can be prepared by group of 3 or 4 students. The project report will be assessed by internal guide for 50 marks and there will be Viva for 50 marks conducted by panel examiners appointed by University.

Practical Exam & Viva Voce :-

University will appoint a panel consisting of two external & one internal Examiner for conducting practical examination as well as viva voce on project report. District wise panel may be appointed to carry out practical & viva voce simultaneously. Practical examination questions will be set by external & internal examiners at the time of practical examination .

The practical examination will be of 20 marks for each paper. The duration of the practical examination should be 2 hrs. This practical exam should be conducted before the theory examination. .

Standard of Passing :-

To pass the examination in Post Graduate Diploma in Computer Applications, a candidate must obtain a minimum of 40% of marks in each head of passing and also in aggregate . Subject to the condition of clearing in all heads a candidate will be awarded class of distinction.

If aggregate percentage is :-

- Greater than or equal to 40% but less than 50% - Pass Class.
- Greater than or equal to 50% but less than 60% - Second Class.
- Greater than or equal to 60% but less than 70% - First Class.
- Greater than or equal to 70% - First Class with Distinction.

Lab Work Load - Size of the practical batch should be 15 students.

Staff Pattern - One full time faculty.
One full time lab Instructor .
Visiting faculty as per requirement.

Nature of Examination –

University examination shall be 3 hours duration for 70 marks paper.

The question paper pattern will be flexible. Examiner may set the objective, short or long questions.

Internal Marks

The division of 10 marks are as follows - -

Terminal Exam 5 Marks

Preliminary Exam 5 Marks

Qualifications for teachers and lab instructor :-

Teacher – A candidate with M.C.A. or M.C.M. qualification is eligible to teach P.G.D.C.A. course

Lab instructor - graduate plus one year diploma in computer recognised by University.

Fees Structure :-

Tuition Fees	Rs. 8000
Computer Lab Charge	Rs. 1000
Library Fees	Rs. 500
Caution money	Rs. 500
Total	Rs. 10000

Equivalence

The equivalence with D.C.M subjects is not possible due to unequal structure of PGDCA and DCM course so D.C.M. students may be given **two chances** i.e April 2005 and April 2006.

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PAPER NO -1
MODERN OPERATING ENVIRONMENT AND MS-OFFICE

Unit No.	Topics
1.	Introduction to computer : Computer Characteristics, Concept of Hardware, Software , Evolution of computer and Generations, Types of computer – Analog & Digital computers, Hybrid computers, General purpose & Special Purpose Computer, Limitations of Computer Applications of Computer in Various fields.
2.	Structure and Working of Computer : Functional Block diagram of computer. CPU, ALU, Memory Unit, Bus structure of Digital Computer - Address, data and control bus.
3.	Input /Output Devices : Input device – Keyboard, Mouse, Scanner, MICR, OMR. Output devices – VDU, Printers – Dot Matrix, Daisy- wheel, Inkjet, Laser, Line printers and Plotters.
4.	Computer Memory : Memory Concept , Memory cell, memory organization, Semiconductor memory- RAM, ROM, PROM, EPROM, Secondary Storage devices - Magnetic tape, Magnetic Disk (floppy disk & Hard disk.), Compact Disk.

5	Computer Language and Software :Algorithm, flowcharts, Machine language, Assembly language, High Level language, Assembler, Compiler, Interpreter. Characteristics of good Language. Software - System and application software.
6	Operating System :Operating system, Evolution of operating system. Function of operating system. Types of operating systems. Detailed study of Windows Operating System. Introduction and features of LINUX OS.
7	Networking : Concept, Topologies, LAN, MAN, WAN, Internet
8	MS-OFFICE : Introduction to Ms-office, Components and features. MS-Word – Creating letter, table , fonts , page layout document formatting spell check, print preview, template, colour, mail merge, auto text, inserting picture , word art. MS-EXCEL – Introduction to Excel , Sorting , Queries, Graphs , Scientific functions. Power Point :- Introduction to Power Point Creation of Slides , Inserting pictures , Preparing slide show with animation. MS-ACCESS - Creation and Manipulation of Files.

Books Recommended –

- 1) Computer Fundamentals by P.K. Sinha & Priti Sinha, 3rd edition, BPB pub.
- 2) Computers Today by S. Basandra Galgotia Pub.
- 3) Microsoft Office 2000 by Vipra Computers, Vipra Printers Pvt. Ltd.
- 4) Advanced Microsoft Office 2000 by Meredith Flynnin, Nita Rutkosky, BPB Pub

Practicals : Minimum 20 practicals based on Windows operating system and MS-Office.

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PAPER NO. : 2

E- COMMERCE AND WEB DESIGN

UNIT NO	TOPICS
1.	E-Commerce : Meaning, Objective, challenges and opportunities, Electronic data, interchange-concept of EDI, Requirements of EDI, benefits of EDI, Components of EDI. Basic modules of E-commerce – Business to Business, Business to Customer , Customer to Business. Electronic payment & system. Online banking, Online retailing concept.
2.	Internet Basic & Electronic Communication : Internet Basic, Internet Domains, networking, E-mail, Internet Technology, Digital Technology , Hardware-Software requirements for Internet application . IP Addressing, structure of an IP Address , overview of TCP/IP.

3.	E-Security : Security issues, Security threads, Security bridge, Access control, firewall & proxy services, Security issues, digital signature, electronic document cryptography, electronic cash. Introduction to IT law.
4.	Web Design For E –Commerce : Rules for Web Designing, structure of Web pages.
5.	HTML : Concept of HTML, HTML organization, creation of HTML files. HTML- editor, Tags and attributes of HTML, Learning the basic structure, elements of HTML, Creation of Web pages using HTML.
6.	Frames : Developing Web pages using Frames .
7.	Introduction to ASP .

Books Recommended :

1. HTL4 Unleashed – Rick Dranell
2. Dynamic web Publishing Unleashed – Shelly Powers
3. World Wide Web Database – Mark Swank & Drew
4. E-Commerce by S. Jaiswal – Galgotia Pub.
5. Web Enabled Commercial Application Development Using HTML,DHTML, javascript ,perl – Ivan Bayross
6. Internet, world wide web-How to program by Deital & Deital, Pearson Pub.

Practical

1. Design & develop web site for any business application.
2. Develop a web page for landing of a new product.

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PAPER NO : 3
WINDOWS PROGRAMMING WITH VISUAL BASIC

UNIT NO	TOPICS
1.	Introducing to Visual Basic : Difference between Procedure Oriented Programming and Event Driven Programming , Starting and Exiting from VB environment ,Understanding VB environment , Project Explorer Properties pages ,Getting helps , Project , Printing Project , connectivity to Access.
2.	Naming convention , Variables & Data types : Bytes , Boolean , Integer, Long(Long Integer) , Single (Single precision floating point) Double (double precision floating point) Currency (scaled integer) Decimal, Date , Object , String (Variable & Fixed length) Variant (with numbers and characters) User defined Variables with types , Scope of variables (Global , Local, Static)Constants.

3.	Controls: Labels and Textbox controls , Command button controls, frame, checkbox and option button controls, List box and File List Box, Formatting Controls , Control Arrays , Tab Order
4.	Functions : String functions , Mathematical functions, Date functions, Data type conversion functions. Control Statement - IF and IFF statements , Select Case statement , Do Statement , For Statement , Exit Statement.
5.	Msg. Box , Input Box. , Common Dialog Box controls Creating Menu , Adding Code to Menu , Toolbars , Other Common controls , Reading and writing files ,Data control ,data grid control , DB Combo Box and DB – List Box , SQL Queries in VB , Jet DAO ,ADO (With Control) , Error handling
6.	Objects and Classes (Only Basic definition) : OLE Control , Programming with Objects (Creating objects of a user defined class and using them on the form)
7.	Introduction to Crystal Reports 8.0

Books Recommended

- 1) Visual Basic 6.0 By Peter Wright
- 2) Petter Norton's Guide to Visual Basic 6.0 by Peter Norton
- 3) Visual Basic 6.0 in 21 days Pery Gerg
- 4) Visual Basic 6.0 Programming Hotzner Steven
- 5) Seagate Crystal Reports 8.0 by Jill K.Home, Scott. M Spanbaucs by BPB Pub

Practical for Visual Basic

- 1) Program by Using label boxes , text boxes to enter personal information.
- 2) Program by using command button to edit the text in the text box, add, modify ,insert ,delete , clear & exit
- 3) Develop a loan application by giving loan amt., interest rate, duration in months and then show payment.
- 4) Program by using horizontal scroll and vertical scroll bar for arithmetic operation.
- 5) Develop an application to change properties at runtime only for various controls.
- 6) Program by using option button and check boxes.
- 7) Develop an application to handle multiple forms.
- 8) Program by using timer control.
- 9) Calculator program by using array of control's
- 10) Develop an application including functions and procedures.
- 11) Program to add records to database file.
- 12) Develop an application for handling message boxes and input boxes.
- 13) Write a menu driven program to update the master database file using transaction database file.
- 14) Write a menu driven program for library mgt. system.
- 15) Write a program for demonstration of graphical image with animation effects.

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Paper No : 4

SOFTWARE ENGINEERING & ACCOUNTING PACKAGE

UNIT NO	TOPICS
1.	Introduction to Software Engineering : The Software Problem, Software Engineering, The Software Engineering Approach.
2.	Software Processes : Software Processes, Characteristics of Software Processes, Software Development Processes
3.	Software Requirement Analysis and Specification : Software requirements, Problem Analysis, Requirement Specification, Validation
4.	Software Design : Fundamental Design Concepts, Models, Design notations, Design Techniques, Detailed Design Consideration.
5.	Accounting Concepts : Concepts of Accounting, Manual Vs Computerised Accounting, Golden Rule, Accounting Equation etc.
6.	Introduction to Tally : Introduction, Creation of Company, Introduction to Gateway of Tally, Menu, Company Info menu.
7.	Accounts Configuration & Classification : Features & Configuration options for company maintaining accounts, Planning about organization of Chart of Accounts, Group and Ledgers
8.	Account Masters and Vouchers : Working with Account Masters, viz, Group, Ledger, Cost Centre and Category, Currency, Entry of Accounts Vouchers with Examples of Billwise, Interest Computation, Printing of Vouchers, Creation and Alteration of Vouchers types and Vouchers Classes.
9.	Final Accounts : Viewing Balance Sheet, P& L Account, Trial Balance

References :

1. Software Engineering Concepts by Richard Fairley, Tata McGrawhill Pub.
2. An Integrated Approach to Software Engineering by Pankaj Jalote, Narosa Pub
3. Implementing Tally 6.3 by A.K.Nadhani, K.K.Nadhani, BPB Pub.
4. Accounting by Tally (Illustrated) by L.B.Singh & V.P.Singh, Asian Pub.
5. Computerised Financial accounting using tally- Rajan Chougule.

Practicals : Minimum 10 practicals based on Tally 5.4 package.

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PAPER NO : 5

BUSINESS DATA PROCESSING WITH ORACLE.

UNIT NO	TOPICS
1.	Introduction to DBMS : Basics of Business Data Processing, Concept of Database, Table, (Relation), Attributes, Primary Key, Foreign Key, Concept of RDBMS. Introduction to ORACLE Features, DSS, Data warehouse, Data Mart, Web Server, Role & responsibilities of ORACLE DBA.
2.	INTRODUCTION TO SQL : Features of SQL, SQL statements ,i.e. DDL - CREATE, ALTER - ADD, MODIFY, DELETE clauses , DML - INSERT, UPDATE, DELETE SELECT statement with WHERE, ORDER BY, GROUP BY, HAVING Clauses, Set operations in SQL, Nested queries, GRANT and REVOKE
3.	FUNCTIONS : MAX, MIN SORT, COUNT,AVERAGE Numeric, String Functions, Conversion Functions like TO_CHAR, TO_DATE, Date Functions.
4.	INTRODUCTION TO PL / SQL : Difference between SQL AND PL/SQL, Block definition structure, Block Functions - %Type, %RowType, IF.....ELSE ...END IF Statement, FOR....LOOP.. END LOOP, WHILE... LOOP... END LOOP,
5.	CONCEPT OF CURSORS : Types- Implicit, Explicit Open, Close cursor
6.	INTRODUCTION TO TRIGGERS : Block Level, Field level triggers, Simple example to be solved with Form
7.	WORKING WITH FORMS : Basic Concept, Application Development in Form, Creating a Form, Running a Form, Form Triggers, maintaining Standards in Forms, Master Detail Forms, Libraries and Alerts.
8.	WORKING WITH MENUES : Using Default Menu, Using custom menu. Attaching a Menu Module to a Form, Opening a Form through a menu
9.	WORKING WITH REPORTS : Features, Defining data Module for a Report, Specify Runtime Parameter form for report, specify runtime parameter form for a report.

Reference :

1. An introduction to database:- Date C.J.
2. Commercial Application Development Using Developer 2000 by Ivan Bayross.
3. Structured Query Languages (SQL) By Osborne.
4. SQL – Scott Urman
5. Teach yourself ORACLE 8 – Ed.Whalen in 21 days.

Practicals For ORACLE :

1. SQL;-create table .Insert rows
2. Create Table, Insert rows and update.
3. Alter existing table structure (ALTER-ADD, MODIFY, DELETE).
4. Simple queries based on single table to view rows.
5. Simple queries based on multi table.
6. Complex queries based on single and multi table.
7. Practical by making use of IF..ELSE.
8. Practical by making use of FOR-LOOP.
9. Practical by using WHILE-LOOP.
10. Practical by making use of PL / SQL Block.
11. Practical by using cursors.
12. Practical by making use of – (% type, & row type)
13. Practical by making use to triggers.
14. Practical to create an Oracle Form – Save, generate, execute.
15. Practical to create a simple report.

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PGDCA Syllabus June 2004/birje

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