Syllabus and Course Scheme

Academic year 2016-17

Post Graduate Diploma in Computer Application (PGDCA)

UNIVERSITY OF KOTA

MBS Marg, Swami Vivekanand Nagar,
Kota - 324 005, Rajasthan, India

Website: uok.ac.in

P G D C A – 2016-17
Duration: 1 year

Eligibility: Graduation in any discipline with 40% agg. in graduation,
Selection : Based on merit in qualifying examination.

Scheme of Examination

O.224 The examination for the Post Graduate Diploma in Computer applications (PGDCA) will consist of one part on, The examination shall consist of (a) Theory papers, (b) Laboratory/Practical Work and project work, Candidates will be required to peruse a regular , full time course of study at the University / affiliated college for a period of one academic year in order to eligible for appearing in the examination.

1. A candidate seeking admission to the PGDCA Shall be required to Possess a Bachelor's degree in any discipline with 40 percent marks in aggregate.
2. Admission to PGDCA Shall be made on the basis of merit secured in an admission test of 100 marks to be conducted by the University as per the procedure to be notified separately.

1. A candidate who completes a regular course of study for one academic year shall be eligible appear in PGDCA examination.
2. For passing a candidate shall gave to secured atleast 40% marks in each course (theory paper and sessional work separately) and 50% marks in the aggregate in all the Courses.
3. A candidate will be placed in First Division if he / she secures 60% or more marks in aggregate in all the courses and in second division if he / she secures 50% or more marks but less than 60% marks in aggregate in all the courses.
4. (i) Where the candidate secures atleast 50% marks in aggregate of all the courses he/ she shall be deemed to have passed in each such course in which he/she has secured atleast 50% marks.

   (ii) Where the candidate fails to secures 50% marks in aggregate of all the courses he/ she shall be deemed to have passed in each such course in which he/she has secured atleast 50% marks.

   (iii) If a candidate fails or does not appear in more than 50% of the courses prescribed for the examination he/she may be allowed to appear at a subsequent examination subject to the condition that he/she will have to appear and pass in all the courses.

   (iv) If the number of courses prescribed for the examination is an odd number then it shall be increased by one for the purpose of rocking 50% of the courses.

   Provided that if a candidate clears any course after a continuous period of two years since he/she was admitted to the PGDCA then for the passing marks i.e. 40% marks shall be taken into account in the case of such course(s).

   Provided further that in case where a candidate requires more than 40% marks in order to reach the requisite minimum aggregate i.e. 50% marks, as many marks, out of those actually secured by him/her will be taken into account as would enable him/her to make up the deficiency in the requisite minimum aggregate marks.
5. Candidates reappearing at an examination in a subsequent year shall be examined in accordance with the scheme and syllabus in force and shall be entitled to the award of the degree of the year in which the last failing/uncleared paper is cleared by them.
6. A candidate may be allowed grace marks in only one theory paper upto the extent of 1% of the total marks prescribed for that examination.

TEACHING AND EXAMINATION SCHEME FOR
POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS-2016-17

(PGDCA)

	Lec	Tut	Exam.	Univ. Exam.		Int.Marks
Paper Name(Theory)			**Hours**	**Theory**	**Pract.**	
1.Introduction to computer and PC Software	3	1	3	70	20	10
2.E-Commerce & Web Design	3	1	3	70	20	10
3.Windows Programming with VB	3	1	3	70	20	10
4.Software Engineering & Accounting Package	3	1	3	70	20	10
5.Business Data Processing With Oracle	3	1	3	70	20	10
Total				**350**	**100**	**50**

6.Project work & Viva- Voce	3		3	100		
Grand Total (Theory + Practicals+Internal)				**600**		

Practical

1. M.S. office
2. HTML/DHTML
3. Tally/ any other accounting package
4. Oracle

Project Work: The project report can be prepared by group of 3-4 student. The project report will be assessed by internal guide for 50 marks and there will be viva for 50 marks conducted by panel of examiners appointed by University.

Practical: Practical work will be assessed by panel of examiners appointed by the University.

Lab work load: Size of practical batch should be 15 students.

Paper No.-1:

Introduction to Computer and PC Software

Max. Marks: 70 **Time: 3 Hrs**

UNIT-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.

UNIT-2: **Structure and Working of Computer:** Block diagram of computer, CPU, ALU, Memory Unit, Bus structure of Digital Computer- Address, data and control bus.

UNIT-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.

UNIT-4: **Computer Memory**: Memory Concept, Memory Cell, memory organisation, Semiconductor memory-RAM, ROM, PROM, EPROM, Secondary storage devices-Magnetic tape, Magnetic disk (floppy disk & hard disk), Compact disk.

UNIT-5: **Computer Language and Software**: Algorithm, flowcharts, Machine language, Assembly language, High level language, Assembler, Compiler, Interpreter, Characteristics of good language.

UNIT-6: Operating System: Operating system, Evolution of operating system. Function of operating system. Types of operating system.
Detailed study of Windows Operating System, Introduction and features of LINUX OS.

UNIT-7: **Networking:** Concept, topologies, LAN, MAN, WAN, Internet

UNIT-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, Creations of slides, inserting pictures, Preparing slide show with animation.
Ms-Access: Creation and manipulation of files.

Text / Reference Books

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 Maicrosoft Office 2000 by Mereditha Flynin, Nita Rukosky, BPB pub.

Practicals: Minimum 50 practicals based on Windows operating system and MS-Office.

Paper No. -2:

E-Commerce And Web Design

Max. Marks: 70 **Time: 3 Hrs**

UNIT-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.

UNIT-2: **Internet Basic & Electronic Communication:** Internet Basic, Internet Domains, Neworking, E-mail, Internet Technology, Digital Technology, Hardware-Software requirement for Internet application, IP Addressing, structure of an IP Address, overview of TCP/IP.

UNIT-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 cyber laws.

UNIT-4: **Web Design for E-Commerce:** Rules for Web Designing, structure of web pages.

UNIT-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

UNIT-6: Frames: Developing Web pages using Frames.

UNIT-7: Introduction to ASP.

Text / Reference Books

1. HTL4 Unleashed – Rick Dranell
2. Dynamic web Publishing Unleashed - Shelly Powers
3. E-Commerce by S. Jaiswal - Mark Swank & Drew
4. Web Enabled Commercial Application Development Using HTML, DHTML, javascript, pert - Ivan Bayross
5. 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.
3. Practicals related to use of various HTML tags.

Paper No.- 3:

Windows Programming with Visual Basic

Max. Marks: 70 **Time: 3 Hrs**

UNIT-1: **Introduction 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.

UNIT-2: **Naming convention, Variables & Data types:** Bytes, Boolean, Integer, (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.

UNIT-3: **Control:** 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.

UNIT-4: **Functions:** String functions, Mathematical functions, Date functions, Data type Conversion functions.

Control statement-If and IFF statements, Select Case statement, Do Control statement, For statement, Exit statement.

UNIT-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, JetDAO, ADO (with control), error handling.

UNIT-6: **Object Classes (only Basic defination):** OLE Control, Programming with Objects (creating objects of a user defined class and using them on the form)

UNIT-7: **Introduction to Crystal Reports 8.0**

Text / Reference Books

1. Visual Basic 6.0 - Peter Wright
2. Petter Norton's Guide to Visual Basic 6.0 –Peter Norton
3. Visual Basic 6.0 in 21 days- Pery Greg
4. Visual Basic 6.0 Programming Hotzner Steven
5. Seagate Crystal Reports 8.0 - Jill K. Flome, Scott. M. Spanbauces by BPB pub

Practical for Visual Basic:

1. Programming 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 amount, interest rate, duration in months and then show payment
4. Program by using Horizontal scroll and vertical scroll bar for arithmatic 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 procedure
11. Program to add records to database file.
12. Develop an application to handling message boxes and input boxes.
13. Write menu driven program to update the master database file using transaction database file.
14. Write menu driven program for library mgt. System
15. Write program for demonstration of graphical image with animation effects

Paper No.-4:

Software Engineering & Accounting Package

Max. Marks: 70 **Time: 3 Hrs**

UNIT-1: **Introduction to Software Engineering:** The Software Problem, Software Engineering, The Software Engineering Approach.

UNIT2: **Software Process:** Software Process, Characteristics of software Processes, Software Development Processes.

UNIT-3: **Software Requirement Analysis and Specification:** Software requirements, Problem Analysis, Requirement Specification, Validation

UNIT4: **Software Design:** Fundamental Design concept, Models, Design notations, Design Techniques, Detailed Design Consideration

UNIT-5: **Accounting Concepts:** Concepts of Accounting Manual Vs Computerised Accounting, Golden Rule, Accounting Equation etc.

UNIT-6: **Introduction to Tally:** Introduction, Creation of Company, Introduction to Gateway of Tally, Menu, Company Info. Menu

UNIT-7: **Accounts Configuration & Classification:** Features & Configuration options for company maintaining accounts, Planning Company maintaining accounts, Planning about organisation of chart of accounts, Group and Ledgers.

UNIT-8: **Account Masters and Vouchers:** Working with Account Masters, Viz, Group, Ledger, Cost Centre and Billwise, Interest Computation, Printing of Vouchers, Creation and Alteration of Vouchers types and Vouchers clases

UNIT-9: **Final Accounts:** Viewing Balance Sheet, P & L Account, Trial Balance

Text / Reference Books

1. Software Engineering Concepts by Richard fairly, Tata McGrawhill Pub.
2. An integrated Approach to software Engineering by Pankaj Jalote, Narosa Pub.
3. Implementation Tally 6.3 by A. K. Nandhani, K.K. Nandhani, 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.

Paper No.-5:
Business Data Processing With Oracle

Max. Marks: 70 **Time: 3 Hrs**

UNIT-1: Introduc**tion 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.

UNIT-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

UNIT-3: **Functions:** MAX, MIN, SQRT, COUNT, AVERAGE, Numeric, String, Functions, Conversion Functions like TO-CHAR, TO-DATE, Date Functions

UNIT-4: **Introduction To PL/SQL:** Difference between SQL, AND PL/SQL, Block definition structure, Block Functions, % type, % Row type, IF…..ELSE…..END If statement. FOR….LOOP …END LOOP,WHILE….LOOP…….END LOOP

UNIT-5: **Concept of Cursors:** Types-Implicit, Explicit Open, Close cursor

UNIT-6: **Introduction to triggers:**: Block Level, Field level triggers, Simple example to be solved with Form.

UNIT-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 Alters.

UNIT-8: **Working With Menues:** Using Default Menu, Using Custom menu, Attaching a Menu Module to a Form, Operating a Form through a menu

UNIT-9: **Working With Reports:** Features, Defining data Module for a Report, Specify Runtime Parameter for report, specify runtime parameter form for a form.

Text / Reference Books

1. An introduction to Database-Date C. J.
2. Commercial Application Development Using Developer 2000 by Evan 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 row
2. Create table insert row 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 multi table
7. Practical by making use of IF…ELSE

8. Practical by making use of FOR–LOOP
9. Practical by making use of 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 of triggers
14. Practical to create an Oracle Form- Save execute
15. Practical to create a simple report

Innovations and Employability in the area of Computer Science

Innovations

Computer Science is the most creative and diverse field of all the technology fields. If you can imagine an outcome, this major will provide you the tools to create it. In addition to providing a solid grounding in all the most significant areas of computer science, The syllabus is designed for students considering their individual needs, who want to study a broad computer science curriculum with an emphasis on combining both the theory and practice of computer science. Then the syllabus will be able to develop computer professionals with a good grasp of how to design and build high quality systems for industry that are usable in real world socio-technical contexts.

The overall aim to develop this syllabus of Computer Science course is to deliver a broad but rigorous Computer Science education coupled with direct exposure to cutting edge research. Graduates and Post Graduate of this programme are intended to continue directly into careers involving innovative thinking and problem solving, as part of an advanced research, development or other applied field of computer science.

Employability

Selection to study the Computer Science opens up many avenues for future career prospects. Almost every major challenge in the world turns to the use of computer science to solve problems; from medical research, education, supporting aid work in disaster areas, helping to create a sustainable environment, the logistics of moving products around the world, to the world of business and securing and managing the vast levels of data through visualisation, security and transmission; not to mention the world of media.

Being a successful Computer professional is not just about solving technical problems, but also collaboration, leadership, and teamwork; which is why our degree courses encourage you to gain these interdisciplinary and interpersonal skills in addition too.

- Computers and computing technology lies at the heart of organisations across all industrial sectors; and our graduates are equipped to support and develop these systems.
- Computer Technology is the fastest developing technology in the world, and the requirement for graduates with the skills to work in this field is continuing to grow, whilst the actual supply of graduates with the skills is dropping worldwide.

Computer Science will fulfill the growing market demand in government and private sectors both for expertise in following:

Databases
Communication Networking
Image processing
Animation
Software development ..... etc

JOB OPPORTUNITIES FOR POSTGRADUATE STUDENTS

A. [MCA/M.Sc.(CS/IT)]: Post graduate can work as a

1. Programmer
2. Sr. Technical Assistant
3. Systems Analyst/System Engineer
4. Software Engineer
5. Database Administrator
6. System Architect
7. Software Project Managers
8. Work As a Faculty Member
9. Research Scientist
10. Web Master / Web Developers
11. Network Engineering/ Analyst