

SHIVAJI UNIVERSITY, KOLHAPUR-416 004. MAHARASHTRA PHONE : EPABX-2609000 GRAM : UNISHIVAJI FAX 0091-0231-2691533 & 0091-0231-2692333 – BOS - 2609094 शिवाजी विद्यापीठ, कोल्हापूर - ४९६ ००४. दुरध्वनी: (ईपीएबीएक्स) २६०९००० (अभ्यास मंडळे विभाग- २६०९०९४) तार : युनिशिवाजी फॅक्स : ००९९-०२३९-२६९९५३३ व २६९२३३३. e-mail bos@unishivaji.ac.in.

Accredited By NAAC

### SU/BOS/Comm/5369

Date : 05-08-2009

 The Principal, All Affiliated (B.C.A. programme) Colleges/Institutions Shivaji University, Kolhapur.

Sub:-Regarding revised syllabi of B.C.A. Part-I (Sem-I & II) under the Faculty of Commerce.

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that, the university authorities have accepted and granted approval to the revised syllabi of B.C.A. Part-I (Sem-I & II) under the faculty of Commerce.

This revised syllabi will be implemented from the academic year 2009-2010.( i.e. from August, 2009) onwards. A soft copy (C.D.) containing the syllabi is enclosed herewith. This syllabi is also available on university website www.unishivaji.ac.in.

Further, it is hereby informed that the question papers on the pre-revised syllabi of above mentioned course will be set for the examinations to be held in Oct-2009 & April-2010. These two chances are available for repeater students, if any.

You are therefore requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours faithfully, Sd/ Dy. Registrar

Encl:- As above Copy to: - 1) Dean, Faculty of Commerce

- 2) Chairman, Board of Studies in Business Management
- 3) Appointment Section
- 4) Affiliation Section (U.G.)
- 5) B.Com. Section
- 6) Computer Centre

For information and n.a.



## Revised Syllabus of BACHELOR OF COMPUTER APPLICATIONS (BCA) COURSE (Under the Faculty of Commerce) w.e.f. Academic Year 2009-10 and onwards

### 1) Objective of the Course:

The main objective of the course is to develop different software development skills in the students with current trends in IT industry as well as Business Management and to take up student at various positions such as System Analyst, System Manager, Software Engineers, Web Design Programmers, EDP Managers, Database Administrators, Academician in different areas of computer application, Management and Information Technology Industry.

Keeping above mottos, curriculum includes extensive study of problem solving and system development, project design, development areas. The extensive practical areas of different programming environment are covered in various operating environments. It also includes versatile subjects on Entrepreneurship and Business Management.

### 2) Duration of BCA Degree:

The duration of the course is full time three years divided into three parts of six semesters.

### 3) Eligibility for Admission:

A candidate must have passed H. S. C.(10+2) in any stream or any diploma (of minimum two years duration after S. S. C.) awarded by State Board in any technical or vocational stream.

Every eligible candidate has to appear for a Common Entrance Test to be conducted by Shivaji University for getting admission to this course. Admission to the BCA Course is based on the merit of entrance test. All reservation rules of Govt. of Maharashatra are applicable for getting admission.

4) Intake Capacity: 80 students.

### 5) Duration, Teaching Schedule and Examinations:

The teaching of semester I, III and V will start from 1st July to 15th of October (14 weeks) and the teaching for the semester II, IV and VI will start from 1st Dec. to 15<sup>th</sup> March (14 weeks). There will be semester end examination in November and April for all the semester. In addition there will be internal examinations for each paper to be conducted by the respective institutes /colleges

## 6) Structure of Syllabus: BACHELOR OF COMPUTER APPLICATIONS (BCA) COURSE (Under the faculty of Commerce)

# Semester- I

# w.e.f Academic year 2009-10 and onwards

Paper	Name of the subject	Int.	Uni	Total	TH/week	PR/week
No.				Marks		
101	Modern Operating Environment	20	80	100	4	
102	Procedure Oriented Programming in C	20	80	100	4	
103	Computer Applications in Statistics	20	80	100	4	
104	Financial Accounting with Tally 9.0	20	80	100	4	
105	Business Communication	20	80	100	4	
106	Lab Course I		50	50		2
	(based on paper no 101 &104)					
107	Lab Course II		50	50		2
	(based on paper no 102)					
	Total	100	500	600	20	04

# Semester- II

Paper No.	Name of the subject	Int.	Uni	Total	TH/wee	PR/week
				Marks	k	
201	DBMS Through MS-Access	20	80	100	4	
202	Data Structure Using C	20	80	100	4	
203	Business Mathematics	20	80	100	4	
204	Financial Management	20	80	100	4	
205	Principles of Management	20	80	100	4	
206	Lab Course III		50	50		2
	(Based on Paper No. 201)					
207	Lab Course IV		50	50		2
	(Based on Paper No. 202)					
	Total	100	500	600	20	04

# **Semester- III**

# w.e.f Academic year 2010-11 and onwards

Paper No.	Name of the subject	Int.	Uni	Total	TH/week	PR/wee
				Marks		k
301	Software Engineering –I	20	80	100	4	
302	Object Oriented Programming With C++	20	80	100	4	
303	Programming in Visual Basic	20	80	100	4	
304	Marketing Management	20	80	100	4	
305	Financial Services and Banking	20	80	100	4	
306	Lab Course V (Based on Paper No. 302 & 303)		50	50		2
307	Mini Project		50	50		4
		100	500	600	20	06

### Semester- IV

Paper No.	Name of the subject	Int.	Uni	Total Marks	TH/week	PR/week
401	Operating System	20	80	100	4	
402	RDBMS with Oracle	20	80	100	4	
403	E-Commerce & Web Designing	20	80	100	4	
404	Entrepreneurship Development and Small Business Management	20	80	100	4	
405	Development of Human Skill	20	80	100	4	
406	Lab Course VI (Based on Paper No. 402,403)		50	50		2
407	Mini Project		50	50		4
	Total	100	500	600	20	06

# Semester-V

w.e.f Academic year 2011-12 and onwards

Paper No.	Name of the subject	Int.	Uni	Total	TH/week	PR/week
				Marks		
501	Software Engineering – II	20	80	100	4	
502	Computer Network	20	80	100	4	
503	Client Server Environment (using	20	80	100	4	
	VB & SQL Server)					
504	Internet Programming	20	80	100	4	
505	Enterprise Resource Planning (ERP)	20	80	100	4	
506	Lab Course VII		50	50		2
	(Based on Paper No. 503 and 504)					
507	Mini Project		50	50		4
	Total	100	500	600	20	06

# Semester- VI

Paper No.	Name of the subject	Int.	Uni	Total	TH/week	PR/week
				Marks		
601	Recent developments in IT	20	80	100	4	
602	Data Warehousing & Data mining	20	80	100	4	
603	Java Programming	20	80	100	4	
604	Dot Net Programming	20	80	100	4	
605	Lab Course VIII			50		2
	(Based on Paper No. 603)					
606	Lab Course IX			50		2
	(Based on Paper No. 604)					
607	Major Project	20	80	100	4	2
	Total	130	470	600	20	6

### 7) Teacher Qualification:

- 1. M.C.A. or M.Sc. Computer Science B+ Or
- 2. B.E. Computer Science / Information Technology / Electronics/ E and T.C.

### 8) Fee Structure:

The university authorities have granted approval to the revised Fee structure of BCA (commerce) programme from the academic year 2009-10. The revised fee structure will be implemented, gradually from the academic years 2009-10, 2010-11 and 2011-12 for BCA – Part-1, BCA – Part-2 and BCA – Part-3, respectively.

Sr.No.	Particular	Amount in Rs.		
1	Tution Fee			
	(Including Computer Lab charges)	14,000.00		
2	Library Fee	500.00		
3	Journal & Stationary	500.00		
	Total fee per student per year	15,000.00		
Examination and other fee is applicable as per University norms.				

### Important Note:-

The above mentioned tuition fee should be collected in two phases i.e. Rs.9500/- in the first semester and Rs.4500/- in the second semester.

It should be noted that if the college concerned has appointed full time teachers then the remaining tuition fee of Rs.4500/- be collected in second semester. Otherwise (if full time teachers are not appointed) the college concerned, should deduct Rs.1000/- from as per rules the same and collect only Rs.3500/- out of the prescribed tuition fee for second semester.

(Please refer circular No.S.U/B.O.S/B.C.A/3983 dated 01-07-2009 for more details)

### 9) Standard of Passing:

### Rule 1 :

- (1) A candidate who fails at BCA Sem-I examination will be allowed to keep terms for BCA Sem-II examination.
- (2) A candidate who fails at BCA Sem-III examination will be allowed to keep terms for BCA Sem-IV examination.
- (3) A candidate who fails at BCA Sem-V examination will be allowed to keep terms for BCA Sem-VI examination.

### **Rule 2 :**

1. A candidate who fails in not more than three heads of passing including aggregate of First Year BCA (Sem.I and II), Second Year BCA (Sem.III and.IV) and Third Year BCA (Sem.V and.VI) examination will be permitted to keep terms in the higher class namely, Second Year BCA (Sem.III and IV), Third Year BCA (Sem.V and VI).

### Rule 3 :

- 1.No candidate will be admitted to Second Year BCA (Sem-III) of the course unless he/she
  - i) passes BCA sem-I and Sem- II examination. Or
  - ii) fails in not more than three heads of passing at the first year BCA Sem-I and Sem-II examination.
- 2. No candidate will be admitted to Third Year BCA (Sem-V) of the course unless he/she
  - i) passes BCA sem-I, Sem-II, Sem-III and Sem- IV examination. Or
  - ii) passes his BCA Sem-I and BCA Sem-II examination and fails in not more than three heads of passing at the Second year BCA Sem-III and Sem-IV examination.

### Rule 4 :

The class will be awarded on the basis of aggregate marks obtained by the candidate for all three years

The award of class will be as follows:

Aggregate Percentage of Marks Class

(1) Aggregate 70% and above ...... First Class with Distinction.
(ii) Aggregate 60% and above but less than 70% ...... First Class

(iii) Aggregate 50% and more but less than 60% ...... Second Class

(iii) Aggregate 40% and more but less than 50% ...... Pass Class

(iii) Aggregate bellow 40% ..... Fail

### Rule 5:

- a) There is separate head of passing for Internal and External (i.e. University theory examination)
- b) The candidate must have to secure minimum 40% of marks for passing in each head.
- c) No class will be awarded to any part of examination.
- d) Scaling down for internal examination marks up-to 20% of university theory exam.

### 10) Nature of Question Paper:

Nature of question paper is as follows for University end semester examination

a. Theory Examination : 80 Marks

# **Duration : 3** Hrs

Nature of question paper : There will be Eight (8) questions of 16 Marks and out of which five (5) to be attempted. Question NO.8 is compulsory and is of short answers.

### **Internal Exams : 20 Marks**

Attendance	:	5 Marks
Home Assignments	:	5 Marks
Preliminary Examination	:	10 Marks

#### **b.** Practical Examination(Lab Course): i. Duration of Practical Examination:

2 Hrs.

ii. Nature of Question Paper

There will be three questions of 15 Marks each, Out of which student have to attempt any two questions.

iii. Distribution of marks

Journal-	10 Marks
Oral Examination	10 Marks
Practical Examination-	30 Marks

Practical Examination conducted by the examination panel. There are two external and one internal examiner appointed by university.

### 11) Mini- Project

The Objective of the mini project is, to aware the student with current technology to be used in the IT industry. The language/platform of the mini-project to be selected from the subject studied in the previous and present semester. The Group size of maximum 4 students can do mini project.

### 12) Major Software Development Project :

The Objective of the major project is to design and develop the live application with current technology to be used in the various industries. The Group size of maximum two students can do major project.

Project Viva-Voce Examination conducted by the panel appointed by university.

### 13 Requirements:

### a) Core Faculty:

First Year: One Full time lecturer in Computer Application & one Lab assistant Second Year: One Full time lecturer in Computer Application Third Year: One Full time lecturer in Computer Application & one Lab assistant In addition to the above three Full time faculties & two lab assistant, there shall be part time or CHB faculty for other than computer subjects.

### b) Non Teaching Staff:

One Clerk and two peons.

### c) Computer Lab:

Twenty computers with electricity backup facility, Internet Broadband connectivity.

### d) Other Infrastructure requirements

- Class Room: At least 3 classrooms of seating capacity 80 students.
- Internet: At least 256 mbps Broadband connectivity.
- LCD projector.
- Licensed Software's as per syllabi.
- Library should have sufficient copies of books prescribed in the syllabi.
- At least two computer related journals and two research journal in Management and allied areas.
- Industrial study tour and Industry guest lectures should be organized.
- Organize placement activity for final year students.

## Paper No. 101 Modern Operating Environment

### **Unit 1: Introduction to Computer**

Introduction, Organization of Computers, Concept of Hardware & Software, Applications of Computer in Various Fields. Computer codes and Number system : BCD, EBCDIC, ASCII, Number System, Decimal, Binary, Octal & Hexadecimal, Conversion from One base to another base. Computer Hardware and Software: Input Devices – Keying: Keyboard, Touch screen, Pointing: Mouse and scanning devices: Scanner, OMR, OCR, MICR. Output Devices – Monitors, Printers, Plotters, Screen Image Projector. Software: Types of software, Computer Languages – Machine Language, Assembly Language, High-level Language, Language translators: Compiler, Interpreter Assembler. (15 Periods)

### **Unit 2 : Basics of Operating System**

Meaning and Definition, Structure of O.S., Types of O.S., Functions of O.S., DOS-Internal & External commands. Windows Operating system : Components of window, windows explorer, control panel, managing the files and folders, accessories: Paint, calculator and notepad. (12 Periods)

### Unit 3: Memory and Computer Networking.

Memory Concepts : Primary Memory: basic concepts of RAM, ROM, Virtual Memory, Cache Memory. Secondary memory: basic concepts of storage device: Floppy Disk, Hard Disk, Compact Disk, Optical disk, Pen drive. Concept of network: advantages and limitations, Communication modes, Network Types & Topology. (13 Periods)

### Unit 4: MS-Office

Introduction to MS-Office, Components & Features

MS-WORD : Creating Letter, Table, Fonts, Page Layout Document, Formatting spelling checking, Print Preview, Template, Color, Mail Merge, Auto Text, Inserting Picture, Word Art.

MS-EXCEL: Introduction to Excel, Sorting, Queries, Graphs, Functions. MS-POWER POINT: Introduction to Power Point, Creation of Slides, Inserting Pictures, Preparing slide show with animation. (20 Periods)

### **Reference Books**

- 1. Computer Fundamentals by P.K.Sinha and Priti Sinha.
- 2. Computer fundamentals by Rajaraman.
- 3. MS- Office by Dreamtech publication.
- 4. MS-Office by BPB publication.
- 5. Information technology by D. S. Yadhav.
- 6. Operating System by Godbole.

### Paper No. 102 PROCEDURE ORIENTED PROGRAMMING IN C

#### **Unit I: Problem Solving Methods.**

Problem definition, analysis, development and description. ALGORITHM: Definition, properties, FLOWCHARTS: Principles of flowcharting, symbols, converting algorithms to flowcharts. Introduction to C: History, Character set, Identifiers: variables, constants, symbolic constants, keywords. Data types, Operators: Arithmetic, relational, logical, assignment, bitwise, increment/decrement and special operators. Structure of C program, Input and Output Functions.

#### (20 periods)

#### **Unit 2: Control Structures Arrays and Functions :**

Conditional : If-else, switch statement. loops: while, for, do..while loop, Unconditional: Break, continue, exit statements, goto and labels blocks. Arrays and Functions: Array: Meaning and definition, Declaration, Initialization and processing, Single dimensional & two dimensional arrays, string, string operations, handling of character array. Function: Definition, Declaration Prototype, types of functions, recursive function, scope rules, local and global variables, storage classes-auto, static, extern, register, Preprocessor. (15 periods)

### Unit 3: Pointers, Structure and Union

Meaning and definition of pointer, address operator, pointer operator, declaration and initialization of pointer, Array as pointers, dynamic memory allocation, address arithmetic pointer to function and array of pointers, call by value, call by reference.

Structure and Union: Basics, declaration and initialization, passing structure to function, array of structures, pointers to structures, union, nested structure, union, typedef. (15 periods)

#### Unit 4: File handling

Basics, file opening modes, closing file, and different file functions: fopen, fgetc, fputc, fscanf, fprintf, fread, fwrite, getw, putw, fclose, feof . (10 periods)

### **Reference Books -**

1] Let Us C by Y.C.Kanetkar.

- 2] The C programming Language by Ritchie and Kernighan.
- 3] Art of Computer programming volume-I Knuth.
- 4] Programming with C by D Ravichandran.
- 5] C Programming by Venugopal

### Paper No. 103 Computer Applications in Statistics

### **Unit 1: Reporting Statistical Data with Tables and Graphs:**

Concepts of statistics. Descriptive Statistics, Information Statistics. Classification tabulation presentation of Data by diagrams and Graphs, Bar Diagram, Pie Chart, Histogram, Frequency Polygon and Ogive curves.

Measures of (Central Tendency) Location: Meaning of location. Arithmetic Mean. Combined A.M. Median. Quartiles and mode Determination of median and mode by graph. Merits and demerits of the Measures. (20 Periods)

### Unit 2 : Measures of variability:

Meaning of variability. Measures of variability – Q.D.: M.D.: Variance combined variance. S.D.: relative measures and merits and demerits.

Correlation and Regression : Concept of correlation and Regression, scatter diagram, Computation of correlation coefficient and regression equations. Interpretation of correlation coefficient, relationship between correlation coefficient regression coefficients.

### **Unit 3: Sampling Techniques :**

Census method, sampling method, advantages of sampling over Census method. Simple random sampling with and without Replacement method stratified sampling method.

Time series Analysis and forecasting: Meaning components of time series, Method of determination of trend by i) Method of moving averages. ii) Method of least squares (only for straight line) iii) Method of progressive averages. Determination of seasonal variations by simple average method. Numerical examples. (15 Periods)

### Unit 4: Index Number :

Introduction, methods of constructions, uses and types of index numbers, chain index numbers, price and quantity index numbers. Paasehe's Laspeyre's and Fisher's Index numbers. Simple example. (10 Period)

Reference Books :

- 1. Statistical methods by Dr. S.P. Gupta, Sultan Chand and Sons Publishers.
- 2. Essential statistics by A.B.Rao.
- 3. Introduction to statistics methods by C.B.Gupta.
- 4. 6. Basic Statistics for Behavioral Sciences Kenneth D. Hopkins.
- 7. Statistics for Business and Economics Paul Newbold.
- 8. Business Statistics & Computer Applications, by S. S. Desai

## Paper No. 104 Financial Accounting with Tally 9.0

### **Unit 1 Financial Accounting :**

Need for Accounting, Internal and External uses of Accounting Information, Accounting Concepts and conventions. Accounting process and system : Nature of accounting transactions, Journal entries and posting to ledger, Subsidiary books, Cash Book, Bank Reconciliation Statement. Depreciation : Concept, Depreciation Methods – Straight Line, Written Down, Sum of digits method, Double Declining Method. (20 Periods)

### (15 Periods)

#### **Unit 2 Final Account :**

Preparation of Trial Balance, Final Accounts for Proprietor and Partnership. (10 Periods)

### **Unit 3 Introduction to Tally :**

Introduction, Creation of Company, Introduction to Gateway of Tally, Menu, Company Info menu. Accounts Configuration & Classification : Features & Configuration options for company maintaining accounts, Planning about organization of Chart of Accounts, Group and Ledgers. (15 Periods)

### Unit 4 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. Viewing Balance Sheet, P& L Account, Trial Balance. (15 Periods)

### **Recommended Books :**

- 1 Advance Accountancy : M. C. SHUKLA . & T.S. GREWAL .
- 2 Advance accountancy : S.C. JAIN & K. L. NARANG.
- 3 Advance Accountancy : S. M. SHUKLA
- 4 Implementing Tally 6.3 by A.K.Nadhani, K.K.Nadhani, BPB Pub.
- 5. Theory and Practice of Computer Accounting Rajan Chougule.
- 6. Accounting by Tally (Illustrated) by L.B.Singh & V.P.Singh, Asian Pub.

### Paper No. 105 Business Communication

### Unit 1. NATURE OF COMMUNICATION :

Definition , Need and Importance of communication skills , basic types of communication (Reading , writing , listening , speaking ). Forms of Communication: (verbal, written, oral Nonverbal, Body language , signs , symbols etc.) The communication Process (Thinking , Getting ideas , Determining intent , Selecting notes, and media) encoding , transmitting messages, decoding, receiving , perceiving and interpreting, giving feed-back. Barriers of Communication and ways in overcoming barriers. Nature and importance of Intrapersonal, interpersonal group and Mass Communication. Written Communication : The process of formal written communication – Designing a message, deciding purpose, analyzing audience, organizing, selecting, arranging ideas and preparing outlines, enveloping a message – writing , evaluating , revising and editing. The qualities of good writing – the 'You ' attitude, clarity , conciseness , preciseness , style , flow, accuracy and readability. **(20 Periods)** 

#### **Unit 2. Business Correspondance :**

Business Correspondence in organization, Business letters : Related to purchase, Letters elated to sales, letters related to insurance companies, Banks, Public authorities. Inter Departmental Communication – Internal Memo, Office Circulars, Office orders, office notes, communication with Regional and Branch Office. (10 Periods)

#### **Unit 3 Reporting to Management :**

Principles of writing reports for management, types of reports, structures of report, preparation of information highlights, use of graphs, presentation of reports. Meetings – Circulars, notice, agenda, minutes, drafting resolutions. Oral Communication: The characteristics of face-to-face exchange, Oral statements, preparation, delivery, public speaking, prepared and extempore speeches. Business interactions – Various situations in business world. Talking to groups at work, exercises in-group communication. Interviews: Conducting interviews, giving interviews. Electronic communication – Telephone , EPBAX system, Tele-Conferencing, answering machines, E-mail, voice-mail, Fax, Internet, Audio – Visual aids etc.

(15 Periods)

### Unit4. Seminar, Conferences and group discussions :

Seminars – preparation for seminar, conducting seminars, organizing conferences.

Group Discussions: Group size, parameters of evaluation, opening of topic, discussion , summary , observer's comments. Concepts of symposium, work-shops, orientation, refresher programs etc. (15 Periods)

Notes:- 1)The general approach will be to give broad idea of business communication.

2) Practical work will convict of -a)Letter Writing b) Report Writing

c) Arranging meetings & seminars.

3) Every student will have to deliver in English language minimum two prepared speeches & one extempore.

### **Reference Books :**

- 1) Essentials of Business Communications:- Rajendra Pal & J.S. Korlahalli
- 2) Business Communication:- U.S. Rai S.M. Rai
- 3) Business Correspondence & Report Writing:-R.C. Sharma & Krishna Mohan
- 4) Hunt, Gray T. Communication skills in the organization, New Jerry, Prentice Hall. Basic Business Communication : Robert MaArcher , Ruth Pearson Amos Prentice Hall

### Paper No. 106 Lab Course I (Based on paper no 101 &104)

### **MS- Office:**

- 1. MS-WORD: Practical based on-
  - 1. Creating Letter
  - 2. Table
  - 3. Document Formatting
  - 4. Mail Merge
- 2. MS-EXCEL: Practical based on-
  - 1. Use of different Formulae's and function
  - 2. Sorting
  - 3. Filtering
  - 4. Graphs
- **3. MS\_POWER POINT:** Practical based on-Preparing slide show with animation

### Tally:

- 1. Create Company in Tally.
- 2. Groups & Ledgers in Tally.
- 3. Voucher entries in Tally.
- 4. Interest Calculation.
- 5. Reporting in Tally- Balance Sheet, Cash Flow, etc.

### Paper No. 107 Lab Course II (based on paper no 102)

# **Procedure Oriented Programming in 'C'**

- 1. Find area of square, rectangle, and circle.
- 2. Find maximum number among three numbers.
- 3. Factorial of number.
- 4. Prime number.
- 5. Armstrong number.
- 6. Fibonacci series.
- 7. Inter conversion of decimal, binary and hexadecimal number.
- 8. Addition of matrix
- 9. Multiplication of Matrix
- 10. Swapping of two numbers using call by value and call by reference.
- 11. Recursive function for example sum of digit reverse of digit.
- 12. String manipulation function for e.g.- string copy, concatenation, compare, string length, reverse.
- 13. Sorting of Array using pointer.
- 14. Program to calculate the result by using structure
- 15. Create a file to perform read, write operations using user choice.

## \*\*\*\* The End of Semester I \*\*\*\*

### SEMESTER-II Paper No. 201 DBMS THROUGH MS-ACCESS

#### Unit -1 Introduction to Database Concepts

DATABASES- AN INTRODUCTION, FILE PROCESSING SYSTEM, DATABASE MANAGEMENT SYSTEMS- Components of Database Management System Environment, Advantages / features of Database Management System, Disadvantages of DBMS, Functions of DBMS, Structure of DBMS, Services provided by Database Management System, Comparison of File Management System with DBMS, SCHEMA AND SUBSCHEMA, DATA ABSTRACTION, DATA INDEPENDENCE, THE ARCHITECTURE OF DATABASE SYSTEM, DATA DICTIONARY, DATABASE ADMINISTRATOR, DATABASE MANAGER. Organization of Database Systems : FILES- AN INTRODUCTION, FILE TYPES, FILE ORGANIZATION- Heap or Pile file organization, Serial file organization, Sequential file organization, Indexed Sequential Files, Random Access Files / Direct -Access file organization, TYPES OF DATABASE SYSTEMS-Centralized Database Systems, Client-Server Systems, Distributed database (DDB). (20 period)

#### Unit-2 Data Modeling

DATA MODELS- AN INTRODUCTION, DATABASE DESIGN, TYPES OF DATA MODELS-Object Based data model : The entity relationship model, Record Based data model : Relational Model, Network model, Hierarchical Model, Physical data model, KEYS-Primary Key, Super key/ Candidate key, Alternate key / unique key, Foreign Key.

Normalization : INTRODUCTION, NORMALIZATION-First normal form (1 NF), Second normal form (2NF), Third normal form (3NF), Normalization example. (15 Period)

#### Unit-3 RELATIONSHIPS AND E-R MODEL

INTRODUCTION, TYPES OF RELATIONSHIPS-One to one relationships, One to Many (1:M) relationships, Many to One (M:1) relationships, Many to Many (N:N) relationships, ENTITY RELATIONSHIP DIAGRAM (ERD), Introduction to relational algebra and relational calculus.

STRUCTURED QUERY LANGUAGE: INTRODUCTION, SQL DATA TYPES, SQL OPERATORS, DDL COMMANDS-Create Table, Describe, Alter Table, Drop Table, DML COMMANDS- Insert, Update, Delete command, DQL commands – SELECT, DCL commands-Grant and Revoke, Data Administration Statements, Transaction Control Statement- Commit, Rollback, Savepoint, DATABASE SECURITY, DATABASE BACKUP AND RECOVERY.

(15 Period)

#### 7 **Database Management through MS-Access** Creation of Tables, Queries, Report and Forms.

(10 Period)

### **Books Recommanded :**

- 1. DBMS by Korth
- 2. DBMS by Alex Lion
- 3. MS- Office by Dreamtech publication.
- 4. MS-Office by BPB publication.
- 5. DBMS by Nawathe

### Paper No. 202 Data Structure Using C

### **Unit 1 Introduction to Data structure**

Concept of Abstract Data Types, Definitions –Data types, Data Object, Data structure. Implementations of Data structure.

Array : Array- definition, Types-one, two and multi dimensional, character string.

(15 Period)

### **Unit 2 Sorting and Searching**

Sorting: Introduction of sorting, Sorting methods, Exchange sort, Insertion sort, Selection sort, Quick Sort. Searching: Definition and terminology of searching, Linear Search, Binary search, Searching application. (15 periods)

Unit 3 Stack &Queue : Stack : Definition of stack, Operations on stack, Declaration of stack, Applications of stack. Definition of queue, Operations on queue, Types of queue-Linear, Circular. Implementation of Linear and Circular queue, Priority queue, Application of queue. (15 periods)

**Unit 4 Linked List & Trees :** Drawbacks of sequential storage, Concept of linked list, Implementation of Linked list, Operations on Linked list, Operations on circular linked list, doubly linked list, Implementation of stack and queue using linked list.

**Trees :** Tree Terminology, Binary tree, Binary search tree, Representation of binary trees, Operation on binary search trees, Tree, Traversal- (Preorder, inorder, postorder)

(15 periods)

### **Reference Book-**

- 1. Data structure through by Tanenbaum.
- 2. Data structure using C by Dr. Sahani.
- 3. Data structure through C by Y.C.Kanekar
- 4. C and Data structure by E. Balguruswami.

### Paper No. 203 Business Mathematics

#### **Unit 1 Mathematical Logic:**

Introduction, Basic concepts and connections, logic operations and truth tables, tautology normal forms.

**Set Theory**: Basic concepts, representations and manipulation of finite sets in computer, Venn diagrams, mathematical induction, Cartesian product. (15 periods)

### **Unit 2 Permutations and Combination:**

Definitions, properties and examples. Binomial Theorem

**Determinants:** Definition of second and third order determinants, system of linear equations and their solutions by Cramer's Rule. (15 periods)

### Unit 3 Matrices Algebra and its's Applications :

Definition of matrix: types of matrices, addition, multiplication of matrices, singular, nonsingular matrices, inverse of a matrix, elementary transformation and finding inverse by elementary transformation, solution of system of linear equations.

(15 periods)

### Unit 4 Limits and Derivatives :

Definition of limit of a function, statement of theorems on derivatives (Omit trigonometric function) Application of derivative for finding maxima and minima. Numerical Integration: Trapezoidal rule, Simpson's 1/3 rule, Simpson's 3/8 rule

(15 periods)

#### **Reference Books :**

- 1. Discrete Mathematics by Schaum Series
- 2. Business Mathematics and its Applications by S.R. Arrora & Dinesh Khaltan (S.Chand).
- 3. Differential Calculus by Shanti Narayan
- 4. Theory of Matrices by Shanti Narayan
- 5. Discrete Mathematical Structures by Kolman B and Busby R.

### Paper No. 204 Financial Management

### Unit 1 : Nature of Financial Management :

Meaning and Significance, Nature : Finance and related disciplines, Scope : Traditional and modern approaches, Objectives : Profit maximization versus wealth maximization, Functions of Financial Management : Recurring and non-recurring.

Financial Planning: Meaning, Objectives, Characteristics, Steps, Types of financial plans, Capitalization : Concept, theories of capitalization, overcapitalization and undercapitalization. (17 periods)

#### Unit 2 : Management of Working Capital :

and concepts, Importance of adequate working capital, Types of working capital, Determinants of working capital, Computation of working capital (practical problems). Cash Management : Concept, Motives for holding cash, Objectives of cash management,

Factors determining cash needs, Preparation of Cash budget (practical problems).

(18 periods)

Meaning

#### **Unit 3 Inventory Management :**

Concept,

Motives for holding inventories, Techniques of inventory management, EOQ and ABC (practical problems).

Financial Statement Analysis : Meaning, Tools of financial statement analysis -

- Ratio analysis Meaning, Classification of ratios, importance and limitations (practical problems.- Common Size Statement Meaning and importance.- Trend analysis Meaning, importance and limitations . (15 periods)
- Unit 4 Capital Structure: Meaning, Factors to be considered while framing capital structure, Capital structure theories : Net income approach, net operating income approach, Traditional theory, Modigliani and Miller approach. (10 periods)

### **Reference Books**

- 1. Financial Management : Prasanna Chandra,
- 2. Financial Management Text and Problems : M.Y.Khan and P.K.Jain
- 3. Financial Management An Analytical and Conceptual Approach, S.C.Kuchal.
- 4. Financial Management : I.M.Pandey
- 5. Financial Management Principles and Practice : S.N.Maheshwari.

### Paper No. 205 Principles of Management

### Unit 1. Concept of Management :

Definitions of management, nature and importance of management, Functions- Planning, Organising, Staffing, Directing, Controlling. Levels of Management, Management as a profession. Importance of management, Role of Manager in Organization.

Management yesterday & Today: Management's connection to other fields of Study, Historical Background of Mgt- Scientific approach., Administrative approach, Quantitative approach, Human Relation approach . Recent developments in Management Theory – System approach, Contingency approach. (15 periods)

Unit 2 Planning & Organising: Meaning, Nature and Importance of Planning- Types of Plans, Steps in Planning. Organising : Meaning definition, Importance, Principles of Organizing. Formal & Informal organization, Organizational charts. Types of Organization, centralization & Decentralization, Authority, process, Responsibility, Delegation Authority.

#### (15 periods)

### **Unit 3 Staffing & Motivation** :

Staffing:- Meaning , Definition, Characteristics, Process of staffing. Recruitment & selection, Training & Development, performance appraisal.

Motivation-meaning, definition & importance of motivation. Theories of motivation-Need Theory. Two factors theory, & Theory X & Y. (15 periods)

### **Unit 4 Directing & Controlling :**

Meaning, Definition, Important aspects of directing functions. Supervision, Leadership, Challenges of Leadership, Functions of Leadership. situational approach to leadership, Leadership Styles, Team Leadership. Controlling : Meaning, Steps in Control Process, why control is needed, Types of Control- Feed forward control, Concurrent control & feedback control, Contemporary issues in control. (15 periods)

### **Reference Books:-**

- 1) Essentional of Management by Kncotz & o' Donnel
- 2) Principles & practice of Management by Geeage Terry
- 3) Principles & Practice of Management By Tripathis C. reddy
- 4) Management a global practice theinz welhrich and Hegold Koontz.
- 5) Management L.M.Prasad.

### Paper No. 206 Lab Course III (Based on Paper No. 201)

# DBMS Through MS-Access: Practical based on

- 1. Creation of Tables using design view,
- 2. Writing a Queries using Design view and Wizards,
- 3. Creation a Report using Design view and wizard
- 4. Creation of Forms

Practical assignment

- 1. Hospital Management system
- Student Attendance System
   Store Management System
   Billing System

- 5. Library System
- 6. Payroll System
- 7. Railway Reservation system
- 8. Inventory system

### Paper No. 207 Lab Course IV (Based on Paper No. 202) **Data Structure Using C**

- 1. Write a program to read & print contain of an array. Find Frequency of each value within an array.
- 2. Write a program to do various arithmetic Operations over Matrices.
- 3. Write c program to convert user given expression in following Forms A prefix notation
  - A postfix notation
  - Evaluate given expression
- 4. Write a program to implement stack using static method.
- 5. Write a program to implement Queue using static method.
- 6. Write a program to create linked list, add node to linked list and Remove node from linked list.
- 7. Write a program to implement a circular list.
- 8. Write a program which sort given array using insertion sort, Bubble sort, selection sort.
- 9. Write a program to search given number using binary search.
- 10. Write a c routine build Tree in which each node is visited only Once.

### \*\*\*\* The End of Semester II \*\*\*\*

# B.C.A. Equivalence

# <u>SEMESTER- I</u>

			1
Sr.	Pre-Revised	Sr	Revised
No		No.	
1.1	Fundamentals of Computer	101	Modern Operating
	i unumentaris or computer		Environment
1.2	Introduction of OS and Applications	401	Operating System
1.3	Financial Accounting	104	Financial Accounting with
1.4	<b>Business Communication</b>	105	Business Communication
1.5	Business Organisation & Office		
	Automation *		
1.6	Lab. Course-I	106	Lab Course I
			(based on paper no 101
	Practical Paper-I based on Paper I &		&104)
	2		
1.7	Practical Paper-II based on the topics	207	Lab Course IV
-	in Panar 2 & 4	_	(Based on Paper No. 202)
	III I aper 5 & 4		
	Through Accounting Package and		
	Paper 4 using MS-Word, MS-power		
	point		
I	r		

• Two more chances should be given.

# <u>SEMESTER- II</u>

Sr.	Pre-Revised	Sr	Revised
No		No.	
2.1	Procedural programming through	102	Procedure Oriented
	C language		Programming in C
2.2	Database Management through	201	DBMS Through MS-Access
	MS-Access		
2.3	Computer Applications in Statistics	103	Computer Applications in Statistics
2.4	Financial Management	204	Financial Management
2.5	Principles of Management	205	Principles of Management
2.6	Lab. Course-2	107	Lab Course II
	Practical Paper-I based on Paper 7 & 8		(based on paper no 102)

# SEMESTER- III

Sr.	Pre-Revised	Sr	Revised
No		No.	
3.1	System Analysis and Design	301	Software Engineering –I
3.2	OOP with C <sup>++</sup>	302	Object Oriented
			Programming With C++
3.3	File and Data Structures	202	Data Structure Using C
3.4	Financial Services & Banking	305	Financial Services and
	5		Banking
3.5	Marketing Management	304	Marketing Management
3.6	Lab. Course-3	306	Lab Course V
			(Based on Paper No. 302 &
	Practical Paper-I based on Paper 14 &		303)
	15		
	Mini project based on the topics		
	covered in Paper 16 & 17		
		307	Mini Project

# SEMESTER- IV

Sr.	Pre-Revised	Sr	Revised
No		No.	
4.1	GUI programming in Visual Basic	303	Programming in Visual Basic
4.2	RDBMS and Oracle	402	RDBMS with Oracle
4.3	Networking and Data Communication	502	Computer Network
4.4	Human Resource Management & Materials Management *		
4.5	Entrepreneurship & Small Business Management	404	Entrepreneurship Development and Small Business Management
4.6	Lab. Course-4	407	Mini Project
	Practical Paper-I based on Paper 19 & 20		
	Mini project based on the topics covered in Paper 22 & 23		

\* Two more chances should be given.

# SEMESTER- V

Sr. No	Pre-Revised	Sr No.	Revised
5.1	Client Server Environment (VB as front end and SOL server as back end)	503	Client Server Environment (using VB & SQL Server)
5.2	Internet and Web Designing	504	Internet Programming
5.3	E-Commerce	403	E-Commerce & Web Designing
5.4	Software Engineering	501	Software Engineering – II
5.5	Strategic IT Management *		
5.6	Mini Project	507	Mini Project
	(Website development using VB, Oracle and Hyper Languages- Software Design and implementation expected		

# \* Two more chances should be given.

# SEMESTER- VI

Sr.	Pre-Revised	Sr	Revised
No		No.	
6.1	VC <sup>++</sup> (Visual Technologies) *		
6.2	Recent development in IT and Legal Aspects in Computer Field	601	Recent developments in IT
6.3	Business Data Processing &	505	Enterprise Resource

	Introduction to ERP and BPR		Planning (ERP)
6.4	Development of Human Skills	405	Development of Human Skills
6.5	Lab Course-5 *		
	Practicals on Paper 31		
6.6	Major Project work	607	Major Project

\* Two more chances should be given.