Progressive Education Society's

Modern College Of Arts, Science and

Commerce, Ganeshkhind, Pune - 411 016

(Autonomous)

Syllabus for

F. Y. B.B.A(CA)

As per NEP Version -I

Introduction:

The degree shall be titled as Bachelor of Business Administration (B.B.A.)(Computer Application) under the Faculty of Commerce and Management. First Year B.B.A.(CA) Based on Credit System is implemented w.e.f. the academic year 2023-2024 , Second Year B.B.A.(CA) is implemented w.e.f. 2024-2025 , Third Year B.B.A.(CA) will be w.e.f. 2025-2026.

Programme Objectives:

BBA (CA) Graduate's will be able to

Po1: The BBA (CA) Programme provides sound academic base to develop an advanced career in Computer Application with various Management and Business skills.

Po2: This course focus on conceptual grounding of computer usage as well as its practical Business Application.

Po3: BBA (CA) inculcates basic programming ability amongst students which can help them to become a good programmer.

Po4: This course nurtures good Soft Skills and Managerial Skill in the students which create noble IT Professionals.

Po5: Students get excellent exposure to learn the process of Software development in the Vth and VIth semester by developing their own projects which helps them in campus placement.

Suggested internal assessment tools for courses:

The concerned teacher shall announce the units for which internal assessment will take place. A teacher may choose one of the methods given below for the assessment.

1. Library notes
2. Students Seminar
3. Short Quizzes / MCQ Test
4. Home Assignments
5. Tutorials/ Practical
6. Oral test
7. Research Project
8. Group Discussion
9. Open Book Test
10. Written Test
11. PPT presentation
12. Industrial Visit
13. Viva

1. Classroom Teaching
2. Guest Lectures
3. Group Discussions
4. Surveys
5. Power Point Presentations
6. Visit to Industries
7. Research Papers & Projects
8. E-content

Subject List

FYBBA(CA) Sem I

Course Type	Sr. No.	Course(Subject) Title	Course (Subject) code	Credits	Weightage for Internal Marks	Weightage For External Marks	Weightage for practical	Total Marks
Major	1	**Introduction to C Programming**	BBA11101	2	C	30		50
Major	2	**Database Management System**	BBA11102	2	20	30		50
Major	3	**Computer Laboratory based on 11101 and 11102**	BBA11103	2			50	50
VSC	4	**Principles of Programming and Algorithms**	BBA11404	2	20	30		50
IKS	5	**Foundation Course on Indian Knowledge System**	11501	2	20	30		50
OE-1	6	**Bioeconomics**	ZOO11301	2	20	30		50
OE-2	7	**Life Skills 101 Personal Skills Management**	PSY11304	2	20	30		50
SEC	8	**Computer Laboratory based on 11404**	BBA11407	2			50	50
AEC	9	**Soft Skills and Personality Development**	ENG11505	2	20	30		50

Cours e Type	Sr. No.	Course(Subject) Title	Course(Subject) code	Credits	Weightage for Internal Marks	Weightage for External Marks	Weightage for practical	Total Marks
VEC	10	**Democracy, Election and Governance**	VEC11506	2	20	30		50
CC	11	**Physical Education**	PED11601	2	20	30		50
		OR						
CC		**National Cadet Corps**	CCC11603	2	20	30		50

FYBBA(CA) Sem IV

Cours e Type	Sr. No.	Course(Subject) Title	Course(Subjec t) code	Credits	Weigh tage for Intern al Mark s	Weighta ge for External Marks	Weighta ge for practical	Total Marks
Major	1	**Relational DatabaseManagement System**	BBA12101	2	20	30		50
Major	2	**Web Technologies**	BBA12102	2	20	30		50
Major	3	**Computer Laboratrory based on12101 and 12102**	BBA12103	2			50	50
SEC	4	**Advanced C Programming**	BBA12404	2	20	30		50
Minor	5	**Business Communication**	BBA12205	2	20	30		50
OE-1	6	**Financial Markets & Instruments**	ECO12304	2	20	30		50
OE-2	7	**Data Analysis using MS-Excel**	STA12303	2	20	30		50
SEC	8	**Computer Laboratory based on 12404**	BBA12407	2			50	50
AEC	9	**Corporate Communication**	ENG12508	2	20	30		50
VEC	10	**Democracy, Election and Governance**	VEC12507	2	20	30		50
CC	11	**Physical Education**	PED11601	2	20	30		50
		OR						
CC		**National Cadet Corps**	CCC11603	2	20	30		50

Credit Allocation: - CC-Core Course, EC-Elective Course, PR-Practical, PJ-Project, AEC-Ability Enhancement Courses, SEC-Skill Enhancement Courses.

Total - 44 Credits for Three years Programme.

Subject Code: - BBA11101

Subject Name -: Introduction to C Programming   (2 Credit Course)

Total Lectures = 30

Unit	Topic	No. of Lectures

1.	**Introduction to C Programming**
	1.1 Basic structure of C Programming
	1.2 Language fundamentals
	    1.2.1 Keywords and identifiers
	    1.2.2 Variables and data types
	1.3 Operators
	    1.3.1 Types of operators
	    1.3.2 Precedence and associativity
	Managing I/O operations
	2.1 Console based I/O and related built-in I/O functions
	    printf(), scanf(),getch(), getchar(), getche()
		5

2.	**Decision Making and Looping Structures**
	2.1 Introduction
	2.2 Decision making structure
	    2.2.1 If statement
	    2.2.2 If-else statement
	    2.2.3 Nested if-else statement
	    2.2.4 Switch statement
	2.3 Loop control structures
	    2.3.1 while loop
	    2.3.2 Do-while loop
	    2.3.3 For loop
	    2.3.4 Nested for loop
	2.4 Jump statements
	    2.4.1 break
	    2.4.2 continue
	    2.4.3 goto
	      exit
		6

3.	**Arrays and Strings**
	3.1 Introduction to one-dimensional Array
	    3.1.1 one-dimensional Array Definition
	    3.1.2 one-dimensional Array Declaration
	    3.1.3 one-dimensional Array Initialization
	3.2 Accessing and displaying array elements
	3.3 Reversing array
	3.4 Introduction to two-dimensional Array
	    3.4.1 two-dimensional Array Definition
	    3.4.2 two-dimensional Array Declaration
	    3.4.3 two-dimensional Array Initialization
	3.5 Matrices: Addition, Multiplication, Transpose,Symmetry, upper/lower triangular
	3.6 Introductions to Strings
	    3.6.1 Strings Definition
	    3.6.2 Strings Declaration
	    3.6.3 Strings Initialization
	3.7 Standard library functions
	    Implementations without standard library functions.
		11

4.	**Functions**
	 4.1 Introduction
	 4.2 Purpose of function
	    4.2.1 Function definition
	    4.2.2 Function declaration
	    4.2.3 Function call
	 Types of functions
		8

	Total	**30**

Reference :

1) Let us C –YashwantKanetkar, BPB publication.

2) Ansi C- Balagurusamy

3) The complete Reference- HerbeltSchildt

4) The C Programming Language- Brian W. Kernighan, Dennis M. Ritchie

5) C Programming:absolute the beginner's guide- By Greg Perry and DeanMiller

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Syllabus for B.B.A (CA) Semester I

Subject Code: - BBA11102

Subject Name -: Database Management System (2 Credit Course)
Total Lectures = 30

Sr. No.	Chapter No.	Name of Chapter and Contents	No. of Hours.
1	1	**File Structure and Organization** 1.1 Introduction 1.1.1 File 1.1.2 Logical and Physical Files Definitions 　　　　　　　1.3 Basic File Operations 　1.3.1 Opening Files 　1.3.2 Closing Files 　1.3.3 Reading and Writing 　1.3.4 Seeking 　　　　　　　1.4 File Organization 　1.4.1 Field and Record structure in file 　1.4.2 Record Types 　1.4.3 Introduction to file organization	**3**
2	2	**Database Management System** 2.1 Introduction 2.2 Basic Concept and Definitions 　2.2.1 Data Vs Information 　2.2.2 Data Dictionary 2.3 Definition of DBMS 2.4 Applications of DBMS 2.5 File processing system Vs. DBMS 2.6 Advantages and Disadvantages of DBMS 2.7 Users of DBMS 　2.7.1 Database Designers 　2.7.2 Application programmer 　2.7.3 Sophisticated Users 　2.7.4 End Users 2.8 Views of Data 2.9 Data Models	**6**
		2.9.1 Object Based Logical Model 　　　　•　Object Oriented Data Model 　　　　•　Entity Relationship Data Model 2.9.2　Record Base Logical Model 　　　　•　Relational Model 　　　　•　Network Model 　　　　•　Hierarchical Model 2.10 Entity Relationship Diagram(ERD) 2.11 Extended features of ERD Overall System structure	

3	**3**	**Relational Model**	**6**
		3.1 Introduction	
		3.2 Terms	
		a. Relation	
		b. Tuple	
		c. Attribute	
		d. Cardinality	
		e. Degree of relationship set	
		f. Domain	
		3.3 Keys	
		3.3.1 Super Key	
		3.3.2 Candidate Key	
		3.3.3 Primary Key	
		3.3.4 Foreign Key	
		3.4 Relational Algebra Operations	
		a. Select	
		b. Project	
		c. Union	
		d. Difference	
		e. Intersection	
		f. Cartesian Product	
		g. Natural Join	
4	**4**	**SQL (Structured Query Language)**	**15**
		4.1 Introduction	
		4.2 DDL Commands	
		4.3 DML Commands	
		4.4 Constraints in SQL.	
		4.5 SQL Functions-Date, Time, Numeric, String , Conversion functions	
		4.6 Simple Queries	
		4.7 Nested Queries	
		4.10 Aggregate Functions	
		Total	**30**

Reference:

    1) Database System Concepts By Henry korth and A. Silberschatz

    2) SQL, PL/SQL The Programming Language Oracle :- Ivan Bayross, BPB Publication.

    3) Database Systems Concepts, Designs and Application by Shio Kumar Singh, Pearson

    4) Introduction to SQL by Reck F. van der Lans by Pearson

    5) Modern Database Management by Jeffery A Hoffer , V.Ramesh, Heikki Topi ,Pearson

    6) Database Management Systems by Debabrata Sahoo ,Tata MacgrawHill

Subject Code: - BBA11103

Subject Name -: Computer Laboratory based on 11101 and 11102 (2 Credit Course)
Total Lectures = 30

Topics for Laboratory Assignments For C	
Sr. No	**Assignment**
1	**Data types and operators**
2	**Managing I/O Operations**
3	**Decision Making using if and if-else**
4	**Decision Making using Switch**
5	**Loop Control structures**
6	**Demonstration of 1-D Arrays**
7	**2-D Arrays**
8	**Strings**
9	**Functions**

Topics for Laboratory Assignments for DBMS	
Sr. No	**Assignment**
1	**DDL(Data Definition Language)**
2	**Alter Table and Drop Table**
3	**DML Commands**
4	**RDB without Constraints**
5	**Table Creation with Constraints**
6	**RDB with Constraints**
7	**Demonstration of Select Command**
8	**SQL Set operations**
9	**Joins**

Subject Code: - BBA11404

Subject Name -: Principles of Programming and Algorithms (2 Credit Course)
Total Lectures = 30

Unit No.	Contents	Total No. of Hours
1	**Number System** 3.1 Introduction: Binary, Octal, Hexadecimal system. 3.2 Conversion, Simple Addition, Subtraction, Multiplication, Division. 3.3 1's Complement, 2's Complement.	5
2	**Algorithm** 2.1 Concept: Problem Solving. 2.2 Steps in problem solving (Define Problem, Analyze Problem, Explore Solution) Algorithms (Definitions) 2.3 Characteristics of an algorithm 2.4 Time complexity: Big-Oh notation, Omega notation, Theta notation, Efficiency 2.5 Space Complexity	5
3	**Flowchart** 3.1 Introduction 3.2 : Flowcharts (Definitions, Symbols) 3.3 Examples (Write algorithms and draw flowcharts) 3.3.1 Addition / Multiplication of integers. 3.3.2 Determining if a number is +ve / -ve / even / odd. 3.3.3 Maximum of 2 numbers, 3 numbers.	5
4	**Divide and Conquer Method** 4.1 General Method, control abstraction. 4.2 Binary search. 4.3 insertion sort, Merge sort, Quick sort	4
5	**Greedy Method**	4
	5.1 Control Abstraction. 5.2 Knapsack Problem 5.3 Job Sequencing with deadline. 5.4 Minimum cost spanning trees, Kruskal algorithm, Prims Algorithm	
6	**Dynamic Programming Dynamic Programming:** 5.1 Introduction to Dynamic Programming 5.2 Design and steps of execution of dynamic Programming 5.3 Recurrence relation 5.4 Examples: Fibonacci Series and LCS with dynamic programming	7
	Total	30

References:

Sr.No.	Title Of the Book	Author's	Publication
1	How to solve it by Computer	R.G.Dromy	Person
2	Fundamentals of Data Structures.	Horowitz and Sahani	Universities Press
3	Introduction to algorithms.	Comen, Lesierson Rivest ,Stein	MIT Press

Subject Code: - 11501

Subject Name -: Foundation Course on Indian Knowledge System (2 Credit Course)
Total Lectures = 30

Unit No	Topic	No. of Hours
1	**1. Introduction** 1.1 Clients- Servers and Communication 1.2 Internet-Basic, Internet Protocols (HTTP, FTP, IP) 1.3 World Wide Web(WWW) 1.4 HTTP request message, HTTP response message	**6**
2	**2. Web page creation** 2.1 Concepts of effective web design 2.2 Web design issues including Browser and width and Cache 2.3 Display resolution 2.4 Look and Feel of the Website 2.5 Page Layout and linking 2.6 User centric design 2.7 Sitemap 2.8 Planning and publishing website 2.9 Designing effective navigation	**9**
3	**5. Java Script with Hands-on** 5.1 Introduction to Java Script 5.2 Identifier & operator, control structure, functions 5.3 Document object model(DOM), 5.4 DOM Objects (window, navigator, history, location) 5.5 Predefined functions, math & string functions 5.6 Array in Java scripts 5.7 Event handling in Java script	**15**
	Total	**30**

Reference:

1. HTML and JavaScript – Ivan Bayross
2. Mastering HTML, CSS & Javascript Web Publishing
3. JavaScript: The Definitive Guide- David Flanagan.
4. Javascript: the Complete Reference – Powell.
5. JavaScript Enlightenment- Cody Lindley

Subject Code: - BBA11407

Subject Name -: Computer Laboratory based on 11404 (2 Credit Course)
Total Lectures = 30

Topics for Laboratory Assignments for Add on (PPA)	
Sr. No	**Assignment**
1	DOS and MS-Office
2	Scratch Programming
3	Application development using Scratch

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Syllabus for B.B.A (CA) Semester II

Semester II

Subject Code: - BBA12101

Subject Name -: Relational Database Management System (2 Credit Course)
Total Lectures = 30

Unit No.	Unit Title	Contents	No. of Hours
1.	**Introduction To RDBMS**	Difference Between DBMS and RDBMS. Relationship among application programs and RDBMS.	2
2.	**PL-SQL**	Overview of PLSQL PLSQL Block Exception Handling Functions, Procedures Cursor Trigger Package	15
3	**Transaction Management**	Transaction Concept Transaction Properties Transaction States Concurrent Execution Serializability View Serializability and conflict serializability Problem solving on Transactions	6
4	**Concurrency Control & Recovery System**	Lock Based Protocol 2PL Protocol Timestamp Based Protocol Deadlock Handling Deadlock Problem Examples Failure Classification Recovery & Atomicity Recovery with concurrent transaction	7
		Total	30

References:

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Database Management System	Bipin Desai	Galgotia Publications	New Delhi
2	SQL/PLSQL the programming language of oracle	Ivan Bayross	BPB Publications	New Delhi
3	An Introduction to Database Systems Eighth Edition	C. J.Date, A.Kannan, S.Swamynathan	Pearson Publications	North America
4	Database System Concepts 5th Edition	Silberschatz, Korth, Sudershan	McGraw-Hill	New York
5	Beginning of Relational Data model second edition	Sharon Allen	Apress	New York

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Syllabus for B.B.A (CA) Semester II

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Subject Code: - BBA12102

Subject Name -: Web Technologies (2 Credit Course)
Total Lectures = 30

Unit No	Topic	No. of Hours
1	**Adobe Photoshop** 1.1 Introduction of Adobe Photoshop 1.2 Basics of Photoshop 1.3 The Working Place 1.4 Customizing 1.5 Image and Color Modifications 1.6 Scaling, Crop, Slicing Tool 1.7 Filter Gallery 1.8 Move Tool and Marque Tool.	**5**

2	**Responsive Web Design with Bootstrap**
	2.1 Introduction to Responsive Design
	2.2 Introduction to Bootstrap
	2.3 Installation of Bootstrap
	    2.3.1 Grid System
	    2.3.2 Forms
	    2.3.3 Buttons
	    2.3.4 Icons Integration
		10

3	**Adobe Flash** 3.1 Introduction to Animation 3.2 Introduction to Adobe Flash 3.3 Tools in Adobe Flash 3.4 Various Flash Effects 3.5 Creating Flash Banners 3.6 Creating Flash Website	**8**

4	**Web Hosting**
	    4.1 Web Hosting Basics
	4.2 Introduction of Hosting Packages types
	4.3 Basic Knowledge of Registering domains
	    4.4 Maintaining a website
		7

	Total	**30**

Reference :

1. Complete HTML- Thomas Powell
2. HTML and JavaScript – Ivan Bayross
3. HTML & CSS: The Complete Reference, Fifth Edition
4. Learning Web Design- Jennifer Niederst Robbins

Subject Code: - BBA12103

Subject Name -: Computer Laboratrory based on12101 and 12102 (2 Credit Course)
Total Lectures = 30

Topics for Laboratory Assignments For RDBMS	
Sr. No	**Assignment**
1	Data Type, PLSQL Block and Control Structure
2	Error and Exception Handling
3	Function
4	Procedure
5	Cursors
6	Triggers
7	Package

Topics for Laboratory Assignments For Web Technologies	
Sr. No	**Assignment**
1	Basic HTML Tags
2	Creating List through HTML
3	Creating Tables trough HTML
4	Creating Frames through HTML
5	Creating Forms through HTML
6	Image Mapping
7	Styling HTML with CSS

Subject Code: - BBA12404

Subject Name -: Advanced C Programming (2 Credit Course)
Total Lectures = 30

Unit No.	Contents	Total no. of Hours
1	**Structures and Pointer** 5.1 Introduction to structure and pointer 5.2 Definition of Structures 5.3 Declaration of Structures 5.4 Definition of Pointer 5.5 Declaration of Pointer 5.6 Initialization of structure and pointer 5.7 Call by value and call by reference	6

2	**File handling:**
	 2.1 File
	     2.1.1 Def
	     2.1.2 File Opening Modes
	     2.1.3 Types of files - text and binary,
	 2.2 Functions: fopen(), fclose(), fgetc(), fputc(), fgets(), fputs(),fscanf(),fprintf(),getw(), putw(), fread(), fwrite(), fseek(),ftell() etc
	   2.3 File Management
	   2.3.1 Opening/Closing a File
	   2.3.2. Input/Output operations on Files
	   2.3.3. Error Handling During I/O Operations
	   2.3.4. Command Line Arguments
	 2.4. Random Access File
		7

3	**Graphics programming Tools** Developing Mini application development	7
4	**Strings :** 4.1 Introduction: Declaration, definition, initialization, format specifiers, String literals/ constants & variables – reading & writing from & to console, Importance of terminating NULL character. 4.2 User defined functions, predefined functions in string.h - strlen , strcpy , strcat , strcmp , strcmpi , strrev , strlwr , strupr , strset , strchr , strrchr , strstr , strncpy , strncat , strncmp , strncmpi , strnset , strtok. 4.3 Command line arguments – argc and argv	10
	Total	30

References:

1. C: the Complete Reference, Schildt Herbert, 4 th edition, McGraw Hill
2. A Structured Programming Approach Using C, Behrouz A. Forouzan, Richard F. Gilberg, Cengage Learning India
3. The 'C' programming language, Brian Kernighan, Dennis Ritchie, PHI
4. Programming in C, A Practical Approach, Ajay Mittal, Pearson
5. Programming with C, B. Gottfried, 3rd edition, Schaum's outline Series, Tata McGraw Hill.
6. Programming in ANSI C, E. Balagurusamy, 7th Edition, McGraw Hill
7. Let Us C by Yashwant Kanetkar

Subject Code: - BBA12407

Subject Name -: Computer Laboratory based on 12404 (2 Credit Course)
Total Lectures = 30

Topics for Laboratory Assignments For Add on (Advanced C)	
Sr. No	**Assignment**
1	Assignment on Graphics
2	Application development using Graphics