

Savitribai Phule Pune University, Pune

Faculty of Commerce and Management

Bachelor of Business Administration in Computer Application (BBA-CA)

Revised Curriculum (2024 Pattern as per NEP-2020)
w.e.f. Academic Year: 2024-2025

Programme Structure

FYBBA-CA Semester I				
Course Type	Course	Paper Title	Hours / Week	Credits
Major Mandatory (06)	Major Mandatory 1	Problem solving using C	3	2
	Major Mandatory 2	Data Base Management System	3	2
	Major Mandatory 3 (Practical)	Computer Laboratory based on C Programming and Data Base Management System (DBMS)	5	2
Open Elective (OE)	Open Elective 1	Business Mathematics	3	2
	Open Elective 2	Principles and Practice of Management	3	2
Vocational Skill Development Course (VSC)	Vocational Skill Development Course	Office Automation tools	5	2
Skill Enhancement Course (SEC)	Skill Enhancement Course (SEC)	Programming Principles and algorithm	3	2
Ability Enhancement Course (AEC)	Ability Enhancement Course (AEC)	Business Communication Skills-I	3	2
Value Education Course (VEC)	Value Education Course (VEC)	Environmental Awareness	3	2
Indian Knowledge System (IKS)	Indian Knowledge System (IKS)	Generic IKS By SPPU	3	2
Co-Curricular Courses (CC)	Co-Curricular Courses (CC)	Physical Education – I	@ Department	2
Total			-	22
FYBBA-CA Semester II				
Course Type	Course	Paper Title	Hours / Week	Credits
Major Mandatory (06)	Major Mandatory 4	Advance C Programming	3	2
	Major Mandatory 5	Relational Database Management System (RDBMS)	3	2
	Major Mandatory 6 (Practical)	Computer Laboratory based on Advance C and RDBMS	5	2
Minor	Minor 1	Organizational Behavior	3	2
Open Elective (OE)	Open Elective 3	Business Statistics	3	2

	Open Elective 4	Financial Accounting with Tally	3	2
Vocational Skill Development Course (VSC)	Vocational Skill Development Course (VSC) (Practical)	Web Technology	5	2
Skill Enhancement Course (SEC)	Skill Enhancement Course (SEC)	E-Commerce	3	2
Ability Enhancement Course (AEC)	Ability Enhancement Course (AEC)	Business Communication Skills-II	3	2
Value Education Course (VEC)	Value Education Course (VEC)	Democracy Awareness & Gender Sensitization	3	2
Co-Curricular Courses (CC)	Co-Curricular Courses (CC)	Physical Education – II	@ Department	2
		Total	-	22

SYBBA-CA Semester III

Course Type	Course	Paper Title	Hours / Week	Credits
Major Mandatory (08)	Major Mandatory 7	Data Structure	5	4
	Major Mandatory 8	PHP	5	4
Minor	Minor 2 (Practical)	Computer Laboratory based on DS, PHP	5	4
Open Elective (OE)	Open Elective 5	To be selected from the basket of the other faculty	3	2
Vocational Skill Development Course (VSC)	Vocational Skill Development Course (VSC) (Practical)	Web development tools	5	2
Ability Enhancement Course (AEC)	Ability Enhancement Course (AEC)	Modern Indian Languages 1	3	2
Field Projects (FP)	Project	Project based on Web Applications	5	2
Co-Curricular Courses (CC)	Co-Curricular Courses (CC)	NSS/NCC/Yoga Education/Health and Wellness/Fine Arts-I	@ Department	2
		Total	-	22

SYBBA-CA Semester IV

Course Type	Course	Paper Title	Hours / Week	Credits
Major Mandatory (08)	Major Mandatory 9	Object Oriented Programming using C++	5	4
	Major Mandatory 10	Advance PHP	5	4
Minor	Minor 3 (Practical)	Computer Laboratory based on CPP, Adv PHP	5	4
Open Elective (OE)	Open Elective 6	Digital Marketing	5	2
Skill Enhancement Course (SEC)	Skill Enhancement Course (SEC)	Computer Network	3	2
Ability Enhancement Course (AEC)	Ability Enhancement Course (AEC)	Modern Indian Languages 2	3	2
Field Projects	Project	Project based on Digital Marketing	5	2
Co-Curricular Courses (CC)	Co-Curricular Courses (CC)	NSS/NCC/Yoga Education/Health and Wellness/Fine Arts-II	@ Department	2

		Total	-	22
TYBBA-CA Semester V				
Course Type	Course	Paper Title	Hours / Week	Credits
Major Mandatory (10)	Major Mandatory 11	Java Programming	5	4
	Major Mandatory 12	Mobile Application Development	5	4
	Major Mandatory 13 (Practical)	Computer Laboratory based on Java and Mobile Application Development	3	2
Major Elective	Major Elective 1	Linux Operating System	5	4
Minor	Minor 4	Software Engineering	5	4
Vocational Skill Development Course (VSC)	Vocational Skill Development Course (VSC) (Practical)	Dot Net Programming	5	2
Field Projects (FP)/ Community Engagement and Service corresponding to the Major (CEP)	Project	Project based on Mobile Application Development	5	2
		Total	-	22
TYBBA-CA Semester VI				
Course Type	Course	Paper Title	Hours / Week	Credits
Major Mandatory (10)	Major Mandatory 14	Recent Trends in IT	5	4
	Major Mandatory 15	Python	5	4
	Major Mandatory 16 (Practical)	Computer Laboratory based on Python	5	2
Major Elective	Major Elective 2	Internet of Things	3	2
	Major Elective 3	Software Testing	3	2
Minor	Minor 5	Management Information Systems	5	4
On Job Training (OJT)	On Jot Training	Internship + Project	After the final exams of Sem V	4
		Total	-	22

Detail Syllabus

Semester No.	Programme Name	Subject Code	Type of Course	Course Title	Credits	Lectures per week
I	BBA(CA)		Major Mandatory	Problem Solving Using C	02	03

Course Objectives:

1. To introduce the foundations of computing, programming and problem- solving using computers.
2. To develop the ability to analyze a problem and devise an algorithm to solve it.
3. To formulate algorithms, pseudocodes and flowcharts for arithmetic and logical problems
4. To understand structured programming approach.
5. To develop the basic concepts and terminology of programming in general.
6. To implement algorithms in the 'C' language.
7. To test, debug and execute programs.

Course Outcome:

At the end of the course, students will be able to

C.O.1	1. Define algorithms and explain their characteristics
C.O.2	2. Formulate algorithm and draw flow chart to solve a given problem
C.O.3	3. Explain use of appropriate data types, control statements
C.O.4	4. Demonstrate ability to use top-down program design

Syllabus

Unit	Title and Contents	No. of Lectures
1	'C' Fundamentals History of 'C' language. Application areas. Structure of a 'C' program. 'C' Program development life cycle. Function as building blocks. 'C' tokens Character set, Keywords , Identifiers Variables, Constants (character, integer, float, string, escape sequences, enumeration constant). Data Types (Built-in and user defined data types).	15

	<p>Operators, Expressions, types of operators, Operator precedence and Order of evaluation. Character input and output. String input and output. Formatted input and output</p> <p>Control Structures Decision making structures:- if ,if-else, switch and conditional operator. Loop control structures:- while ,do while, for. Use of break and continue. Nested structures. Unconditional branching (goto statement)</p>	
2	<p>Functions Concept of function, Advantages of Modular design. Standard library functions. User defined functions:- declaration , definition, function call, parameter passing (by value), return statement. Recursive functions. Scope of variables and Storage classes.</p> <p>Arrays Concept of array. Types of Arrays – One, Two and Multidimensional array. Array Operations - declaration, initialization, accessing array elements.</p>	15

Reference Books

1. How to Solve it by Computer, R.G. Dromey, Pearson Education.
2. Problem Solving and Programming Concept, Maureen Sprankle,7th Edition, Pearson Publication.
3. C: the Complete Reference, Schildt Herbert, 4 th edition, McGraw Hill
4. A Structured Programming Approach Using C, Behrouz A. Forouzan, Richard F. Gilberg, Cengage Learning India
5. The 'C' programming language, Brian Kernighan, Dennis Ritchie, PHI
6. Programming in C ,A Practical Approach, Ajay Mittal , Pearson
7. Programming with C, B. Gottfried, 3rd edition, Schaum's outline Series, Tata McGraw Hill.
8. Programming in ANSI C, E. Balagurusamy, 7th Edition, McGraw Hill.

Semester No.	Programme Name	Subject Code	Type of Course	Course Title	Credits	Lectures per week
I	BBA(CA)		Major Mandatory	Database Management System	02	03

Course Objectives:

1. To make students understand the concept of Database Management System
2. To develop Database application

Course Outcome:

CO.1	To understand the basic concepts and the applications of database systems.
CO.2	To formulate Queries using SQL and Relational Formal Query Languages

DATABASE MANAGEMENT SYSTEMS

Unit	Title and Contents	No. of Lectures
1	<p>Introduction to Databases Management and Data Models</p> <p>1.1 Introduction</p> <p>1.2 Application Of DBMS</p> <p>1.3 Advantages of DBMS</p> <p>1.4 Users of DBMS</p> <p style="padding-left: 20px;">1.4.1 Database Designers</p> <p style="padding-left: 20px;">1.4.2 Application Programmer</p> <p style="padding-left: 20px;">1.4.3 Sophisticated Users</p> <p style="padding-left: 20px;">1.4.5 End Users</p> <p>1.5 Views of Data</p> <p>1.6 Data Models</p> <p style="padding-left: 20px;">1.6.1 Relational Model</p> <p style="padding-left: 20px;">1.6.2 Network Model</p> <p style="padding-left: 20px;">1.6.3. Hierarchical Model</p> <p>1.7 Entity Relationship Diagram(ERD)</p> <p>1.8 Features of ERD</p> <p>1.9 Cases Studies on ER Model</p> <p>1.10 Introduction to Relational Model</p> <p>1.11 Basic Concepts: Relation, tuple, attribute</p> <p>1.12 Key: Super Key, Candidate Key, Primary Key, Foreign Key</p>	15
2	SQL (Structured Query Language)	15

	<ul style="list-style-type: none"> 2.1 Introduction 2.2 Normalization <ul style="list-style-type: none"> 2.2.1 First Normal Form 2.2.2 Second Normal Form 2.2.3 Third Normal Form 2.2.4 Boyce - Codd Normal Form 2.2 Basic Structure 2.3 DDL Commands 2.4 DML Commands 2.5 Simple Queries 2.6 Constraint (Not NULL, Check , Unique , Default) 2.7 Aggregate function (Min, Max , Avg , Count, Sum) 2.8 Clause (Group By , Order By, Having) 2.9 Nested Queries 2.10 Case Study on SQL 	
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- Reference Books:**
- 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 McGraw Hill

Semester No.	Programme Name	Subject Code	Type of Course	Course Title	Credits	Lectures per week
I	BBA(CA)		Major Mandatory	Business Mathematics	02	03

Course Objectives:

1. To understand role and importance of Mathematics in various business situations and while developing software.
2. To develop skills related with basic mathematical technique
3. Be able to communicate mathematical/logical ideas in writing
4. Be familiar with several subfields of mathematics (e.g, numerical analysis, Business situations, operations research).
5. To increase price determination ability for financial analysis

Course Outcome:

At the end of the course, students will be able to

CO.1	Explore theoretical approach in practical situations
CO.2	To have better problem-solving skills
CO.3	To use effectively all the concepts in business
CO.4	It will help students to develop the logic and quantitative thinking

Syllabus

Unit	Title and Contents	No. of Lectures
1	<p>Ratio, Proportion and Percentage: Ratio – Definition, Continued Ratio, Inverse Ration, Proportion, Continued Proportion, Direct Proportion, Inverse Proportion, Variation, Inverse Variation, Joint Variation, Percentage, computation of Percentage.</p> <p>Profit and Loss: - Terms and Formulae, Trade discount, Cash discount, Problems involving cost price, selling price, Trade discount and cash discount. Introduction to Commission and brokerage, Problems on commission and brokerage</p>	15
2	<p>Interest and Annuity: - Simple interest, Compound interest, Equated monthly Installments (EMI) by interest of reducing balance and flat interest methods and problems. Ordinary annuity, sinker fund, annuity due, present value and future value of annuity.</p> <p>Shares and Mutual Funds:- Concepts of Shares, face value, market value, dividend, brokerage, equity shares, preferential shares, bonus shares, examples and problems, Concept of Mutual Funds,</p>	15

	Change in Net Asset Value (NAV), Systematic Investment Plan (SIP), Examples and Problems.	
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Reference Books: 1) Business Mathematics by Dr. Amarnath Dikshit and Dr. Jinendra kumar Jain.

2) Business Mathematics by V. K. Kapoor – Sultan, Chand and sons. Delhi.

3) Business Mathematics by Bari – New Literature publishing company, Mumbai.

Semester No.	Programme Name	Subject Code	Type of Course	Course Title	Credits	Lectures per week
I	BBA(CA)		Open Elective	Principles and Practice of Management	02	03

Course Objectives:

- To understand basic concept regarding org. Business Administration
- To examining how various management principles
- To develop managerial skills among the students

Course Outcome:

At the end of the course, students will be able to

C.O.1	1. Use of available resources so as to achieve productive results at minimum cost and maximum profits
C.O.2	2. To use effectively all the concepts in business
C.O.3	3. Do effective administration by channelizing resources (human and material)
C.O.4	4. To manage crucial situations

Unit	Title and Contents	No. of Lectures
1	Nature of management Meaning, importance, functions, types Management as an art, science and social system Universality of concept of management and organization Evolution of management thoughts Concept of managerial thoughts Contribution of Taylor, Mayo and Fayol and Drucker and Indian Management Ethos	15
2	Major managerial Functions Planning, need types, methods, advantages, merits Forecasting. need types, methods, advantages, merits Decision making types process and techniques Directions nature and principles and Motivation –nature, principles and theories Organizing –concept delegation of authorities decentralization concepts and importance	15

Reference Books:

1. Management Concepts and Strategies J.S. ChandanVikas Publishing House Pvt. Ltd.
- 2 Principles of Management Harold Koontz, Heinz Weihrich, A. RamachandraArysri McGraw hill companies
- 3 Management A Global and Entrepreneurial Perspective Heinz Weihrich, Mark V. Cannice, Harold Koontz McGraw hill companies
- 4 Management – 2008 Edition Robert Kreitner, Mamata Mohapatra Biztantra – Management For Flat World
- 5 Introduction to Management John R. Schermerhorn Wiley India Pvt. Ltd.

Semester No.	Programme Name	Subject Code	Type of Course	Course Title	Credits	Lectures per week
I	BBA(CA)		Vocational Skill Development Course (VSC)	Office Automation tools	02	03

Course Objective:

To make students understand and learn various Office Automation Tools like MSWord, MExcel & MSPowerPoint.

Course outcome:

C.O.1	The students will be able to use various Office Automation Tools like MSWord, MS Excel & MS PowerPoint.
C.O.2	Use of modern office equipment in business or any office is intended to facilitate faster processing and delivery of information, accurate analysis of facts and figures, higher efficiency and productivity, and elimination of fatigue arising from performing repetitive jobs manually. Office Automation Tools help in Word processing, Worksheet and presentation

Unit	Title and Contents	No. of Lectures
1.	<p>Introduction Concept of Windows, Icon, Menu Desktop Creating Folders and Shortcuts Finding Files & Folders Creating, Copying, Moving and Deleting files Windows Explorer Basic DOS Commands</p> <p>Word Processing Package Typing, Editing, Proofing & reviewing Formatting text & Paragraph Automatics Formatting and Styles Working with Tables Graphics and Frames Mail Merge</p>	15
2.	<p>Spread sheet package Concept of worksheet Working & Editing in Workbooks Creating Formats & Links Protecting and Hiding data Built in Functions (Mathematical, Statistical, String & Date) Formatting a Worksheet & Creating graphics objects Creating Charts (Graphics), Formatting and analyzing data Organizing Data in a List (Data Management) Sharing & Importing Data Printing</p> <p>Presentation Package Creating and Editing Slides Creating and Editing objects in the slide Animation Creating and Running Slide Show Templates</p>	15

Reference Books:

1. EXCEL2007MadeSimplebySatishJain,BPB
2. Word2007byRutkosky,BPB
3. PowerPoint2007MadeSimplebySatishJain,BPB
4. MasteringEXCEL4forWindows-Chester-BPB
5. MicrosoftOfficeWord2007 Plain & Simple, Joyce & Moon, PHI
6. MicrosoftOfficeExcel2007Plain&Simple,Frye,PHI
7. MicrosoftOfficePowerPoint2007Plain&Simple,Muir,PHI
8. 2007MicrosoftOfficeSystemPlain&Simple,Joyce&Moon, PHI
9. EXCEL5forWindowsQuick&Easy-JonesTECH
10. Excel Functions & formulas by Bernd Held, BPB
11. MasteringWindows2000Cowat-BPB
12. MSOFFICE2007-TRAININGGUIDEbySatishJain,BPB
13. Internet :An Introduction Cisiems-Tata Mac,D.Boody-BPB
14. Internet6in1-JoeKrayuak&Harbraken, PHI
15. Internet access essential-Tittle & M.Robbins,AP professional PCSoftwareforWindows2003 MadeSimple,RKTaxali,TMH

Semester No.	Programme Name	Subject Code	Type of Course	Course Title	Credits	Lectures per week
I	BBA(CA)		Skill Enhancement Course (SEC)	Programming Principles and Algorithm	02	03

Course Objectives:

1. To make students understand the concept of Algorithm and Flowchart.
2. To develop Analytical / Logical Thinking and Problem Solving capabilities
3. To Know the Basics Of Programming.

Course Outcome:

C.O.1	To understand how to use programming in day to day Applications
C.O.2	To apply skills of algorithm and flowchart to solve the businesses problem

Unit	Title and Contents	No. of Lectures
1	Introduction 1 Concept: Problem solving, Program development cycle 2 Algorithm , Characteristics of an algorithm 3 Flowcharts 4 Simple Examples: Algorithms and flowcharts 4.1 Addition / Multiplication of integers 4.2 Determining if a number is +ve / -ve / even / odd 4.3 Maximum of 2 numbers, 3 numbers 4.4 Sum of first n numbers, given n numbers, Digit reversing, Palindrome number, Armstrong number 4.5 Table generation for n, Factorial, Prime number, Factors of a number etc (Write algorithms and draw flowcharts)	15
2	Recursion 1.1 Concept : Multiplication, Factorial, Fibonacci series , Permutation Generation 1.2 Algorithms using arrays Maximum and minimum of array, reversing elements of an array. 1.3 Mean and Median of n numbers 1.4 Row major and Column major form of array representation 1.5 Matrices: Addition, Multiplication, Transpose, upper/lower triangular	15

Reference Books:

1. Let us C-Yashwant Kanetkar.
2. Programming in C- Balguruswamy
3. How to solve it by Computer – R. G. Dromy
4. Introduction to algorithms – Cormen, Leiserson, Rivest, Stein

Semester No.	Programme Name	Subject Code	Type of Course	Course Title	Credits	Lectures per week
I	BBA(CA)		Ability Enhancement Course (AEC)	Business Communication Skills-I	02	03

Course Objectives:

1. To understand what is the Need and Significance of communication in personal and business world

2. To understand system of communication and their utility

Course Outcome:

C.O.1	To understand the concept, process and importance of communication
C.O.2	To apply gain knowledge of media of communication in businesses
C.O.3	To develop skills of effective communication - both written and oral

Unit	Title and Contents	No. of Lectures
1	Introduction 1.1 Meaning, Definition of Communication 1.2 Need for effective communication 1.3 Process of Communication 1.3 C's of effective communication, 1.4 Types of Communication- 1.4.1 Verbal communication- Formal and Grapevine, 1.4.2 Nonverbal communication:-Gestures, Postures, Facial Expression, Eye Contacts, Body Language(Kinesics), Silence, Tips for Improving Non-Verbal Communication 1.5 Barriers to communication 1.6 over coming barriers to communication 1.7 Listening Skills- Types of Listeners, Tips to be good listener. 1.8 Different Media of Communication- E-mails, Social media, Fax communication, Video Conferencing, Blogs	15
2	Writing Skills 2.1 Written Communication-Merits and Merits 2.2. Report Writing- Meaning Definition of Report Importance of good report, Qualities of a good report, Tips for writing good report 2.3 Notice – Meaning, Format 2.4 Memo-Meaning, Tips to Memo writing 2.5 Agenda- Meaning 2.6 Minutes- Concept	15

References

1. Business Communication, R.K. Madhukar, Vikas Publishing House
2. Business Communication, Homai Pradhan , N.S. Pradhan, Himalaya Publishing House
3. Business Communication, K.K. Sinha, Taxmann Publications

Semester No.	Programme Name	Subject Code	Type of Course	Course Title	Credits	Lectures per week
I	BBA(CA)		Value Education Course (VEC)	Environmental Awareness	02	03

Course Objectives:

- 1) To provide an opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment
- 2) To develop conscious towards a cleaner and better managed environment

Course Outcome:

C.O.1	To understand Environmental pollution.
C.O.2	To apply and promote green practices at home and at work

Unit	Title and Contents	No. of Lectures
1	Introduction - Environmental studies Definition, scope importance and need for public awareness. (Multidisciplinary nature of environmental studies) 2 Environmental Pollution -Definition, Causes, effects on human, water, soil, air (Mother Earth) Air pollution, Water pollution, Soil pollution Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards	15
2	Various Government initiatives for conservation of Environment. Controlling measures), Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution. Pollution case studies. Disaster management: floods, earthquake, cyclone and landslides.	15