

# 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

<b>Programme Outcomes</b>	
<b>PO No.</b>	<b>Upon completion of the B.B.A(CA)Degree Programme the graduate will be able to</b>
<b>PO-1</b>	To provide sound academic base from which an advanced career in Computer Application can be developed. Conceptual grounding in computer usage as well as its practical business application will be provided.
<b>PO-2</b>	To produce skill oriented human resource.
<b>PO-3</b>	To impart practical skills among students.
<b>PO-4</b>	To make industry ready resource.
<b>PO-5</b>	To bring the spirit of entrepreneurship.

<b>Programme Specific Outcomes</b>	
<b>PSO No.</b>	<b>Upon completion of these courses the student would</b>
<b>PSO-1</b>	Students should be able to apply modern practices and strategies in software project development using open-ended programming environments to deliver quality product for business success in context with societal needs.
<b>PSO-2</b>	An ability to gain knowledge on design and control strategy; techniques to secure information and adapt to the fast changing world of information technology needs.
<b>PSO-3</b>	Design and develop Web and Mobile based computer applications
<b>PSO-4</b>	An ability to use and develop cloud software, administrative features, infrastructure services and architectural patterns; ethical hacking and forensic security technologies.

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
I	BBACA101T	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

<b>CO1</b>	1. Define algorithms and explain their characteristics
<b>CO2</b>	2. Formulate algorithm and draw flow chart to solve a given problem
<b>CO3</b>	3. Explain use of appropriate data types, control statements
<b>CO4</b>	4. Demonstrate ability to use top-down program design

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
I	BBACA102T	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:**

<b>CO1</b>	To understand the basic concepts and the applications of database systems.
<b>CO2</b>	To formulate Queries using SQL and Relational Formal Query Languages

Semester No.	Course Code	Type of Course	Course Title	Credits	Lecture Hours/Week
I	OE-103-MTS	Open Elective	Business Mathematics - I	2	3

**Note: This course is taken from OE basket of Faculty of Science and Technology.**

Course Objectives	
1.	To provide solid Mathematical Foundation for BBA Students in Business and Finance.
2.	To help the students for various mathematical topics with Practical Business Application.
3.	To enhance problem - solving Skills and ability for Academic and Professional Success.
4.	To make students understands mathematics behind commerce and Management.
5.	To foster conceptual Clarity and Confidence in Mathematical Competence.

Course Outcome	
The student will be able to	
C01	understand the Concepts of Ratio, Proportion, Percentage and Partnership.
C02	apply the mathematical concepts to solve real-world financial problems.
C03	understand the equated monthly instalments (EMI) for loans and mortgages.
C04	apply the simple and compound interest for various financial instruments.
C05	analyze models related to Finance and can solve them.
C06	remember the computation of Dividend and Return on Investment in shares.

Semester No.	Course Code	Type of Course	Course Title	Credits	Lecture Hours/Week
I	OE-103-STS	Open Elective	Business Statistics - I	2	3

**Note: This course is taken from OE basket of Faculty of Science and Technology**

Course Objectives	
1.	To understand role and importance of statistics in various business situations
2.	To develop skills related with basic statistical technique
3.	To learn some elementary statistical methods for data collection, presentation and analysis of data.
4.	To develop right understanding regarding data interpretation
5.	To familiarize the students with applications of Statistics in Business and Management

Course Outcome	
C01	understand basic concepts in statistics
C02	collect, present, analyze and interpret the data and graphs
C03	deal data in business problems
C04	evaluate feasibility business problems using statistical techniques
C05	prepare business report using various statistical techniques

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures Hours per week
I	BBACA101VSC	Vocational Skill Development Course (VSC)	Office Automation tools	02	03

**Course Objective:**

To make students understand and learn various Office Automation Tools like MSWord, MS Excel & MS PowerPoint.

**Course outcome:**

<b>CO1</b>	The students will be able to apply various Office Automation Tools - MSWord, MS Excel & MS PowerPoint
<b>CO2</b>	Use of modern office equipment in business

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures Hours per week
I	BBACA101SEC	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:**

CO1	To understand how to use programming in day-to-day Applications
CO2	To apply skills of algorithm and flowchart to solve the businesses problem

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
I	BBACA101AEC	Ability Enhancement Course (AEC)	Business Communication Skills-I	02	03

**Course Objectives:**

1. To understand what the Need and Significance of communication in personal and business world
2. To understand system of communication and their utility 3.

**Course Outcome:**

**Student will able**

CO1	To understand the concept, process, and importance of communication
CO2	To apply gain knowledge of media of communication in businesses
CO3	To develop skills of effective communication - both written and oral

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
I	BBACA101VEC	Value Education Course (VEC)	Environmental Awareness	02	03

**Course Objectives:**

- 1) To provide an opportunity 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:**

**Student will able**

CO1	To understand Environmental pollution.
CO2	To apply and promote green practices at home and at work

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
II	BBACA201T	Major Mandatory	Advance C Programming	02	03

**Course Objectives:**

1. To provide advanced features in C Programming in problem solving.
2. To learn advanced data types in C programming to solve problems.
3. To understand built-in library functions

**Course Outcome:**

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

CO1	write C programs using pointers, structures and unions
CO2	create Pre-processor directives.
CO3	perform strings using library functions
CO4	write C programs using pointers, structures and unions

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
II	BBACA202T	Major Mandatory	Relational Database Management System	02	03

**Course Objectives:**

1. To understand the basic concepts and the applications of RDBMS.
2. Enables student to write PL/SQL programs that use procedure, function, package, cursor and trigger

**Course Outcome:**

Student will be able to

CO1	understand the concept of Relational Database Management System.
CO2	develop PL/SQL programs, functions, procedures, triggers, cursors, packages etc.
CO3	understand Transaction management and concurrency control.

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
II	BBACA201P	Major Mandatory	Computer Laboratory based on Advance C and RDBMS	02	05

This course is a Practical Course based on Advance C and RDBMS. The college/institute has given an autonomy to design assignments based on following guidelines

1. Practical Assignments based on Arrays, Strings and Pointers - 10
2. Practical Assignments based on Structures - 5
3. Practical Assignments based on basic PL/SQL commands - 10
4. Practical Assignments based on advanced PL/SQL commands - 5

Semester No.	Course Code	Type of Course	Course Title	Credits	Lecture Hours/ Week
II	BBACA201MI	Minor	Principle and Practices of Management	2	3

**Course Objectives:**

1. To understand basic concepts regarding org. Business Administration
2. To examine various management principles
3. To develop managerial skills among the students

**Course Outcome:**

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

CO1	use of available resources so as to achieve productive results at minimum cost and maximum profits
CO2	use effectively all the concepts in business
CO3	effective administration by channelizing resources (human and material)
CO4	manage crucial situations

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
II	OE-101-CA	Open Elective	Introduction to Data Science	02	03

**Note: This course is for FYBBA-CA students and taken from OE basket of Faculty of Science and Technology**

Course Objectives	
1.	To understand need of Data Science
2.	To Know role of Statistics in Data Science
3.	To know Data Science Models and Tasks

Course Outcome	
Student will be able to	
CO1	define Data Science Tasks and Models and Lifecycle
CO2	apply Prep-processing and visualization Techniques

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
II	OE-102-IT	Open Elective	Tally Prime	02	03

**Note: This course is for FYBBA-CA students and taken from OE basket of Faculty of Science and Technology**

Course Objectives	
1.	To understand Fundamentals of Accounts
2.	To study Basic Principles of Accounts (Golden Principles of Accountancy)
3.	To study Ledger, Transaction Entries.
4.	To understand the final effect of each transaction in Balance Sheet and Profit & Loss Accounts.

Course Outcome	
CO1	Create Ledgers in Tally Prime
CO2	Pass the transaction Entries of Payment, Receipt, Contra, Sales, Purchase
CO3	Pass the entries with automatic calculation of GST.
CO4	Maintain Accounts only and Accounts with Inventory

Semester No.	Course Code	Type of Course	Course Title	Credits	Lab Hrs. per week
II	BBACA201VSC	VSC	Web Technology	02	05

**Course Objective:**

1. To know and understand the concept of web designing.
2. To understand how to develop web-based applications using HTML and CSS

**Course outcome:**

**Student will be able to**

CO1	get acquainted with website designing.
CO2	develop static web site using HTML and CSS.

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
II	BBACA201SEC	SEC	E-Commerce	02	03

**Course Objectives:**

1. To acquaint the learner with knowledge on the basics of E-commerce.
2. To develop knowledge on various types of E-commerce business.
3. To Develop knowledge on various modes of online transaction for crating convenience in day-to-day financial transactions and promoting cashless economy.
4. To introduce the learner to the concept of Electronic Data Inter exchange and its significance.

**Course Outcome:****Student will be able to**

CO1	develop knowledge on various types of E-commerce business.
CO2	develop knowledge on various modes of online transaction for crating convenience in day-to-day financial transactions and promoting cashless economy.
CO3	Understand the various forms of ecommerce

Semester No.	Subject Code	Type of Course	Course Title	Credits	Lectures per week
II	BBACA201AEC	AEC	Business Communication Skills-II	02	03

**Course Objectives:**

1. Develop the skills needed for approaching different types of interviews.
2. Help the students in developing effective presentation skills.
3. Enhance the skills of public speaking amongst students.
4. Enable students to understand their own strengths and weaknesses, opportunities, and challenges.

**Course Outcome:****Student will be able to**

CO1	Improve oral communication and presentation skills.
CO2	Understand and deal with different types of interviews.
CO3	Students can learn how to identify their strengths and weaknesses, and how to focus on improving those areas.

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
II	BBACA201VEC	VEC	Democracy Awareness and Gender Sensitisation	02	03

**Course Objectives:**

1. To make students understand the fundamental principles of democracy and their relationship with gender.
2. To foster democratic values like tolerance and empathy in students to tackle gender-based issues and become active, informed citizens.
3. To encourage critical thinking by making students aware of their biases and create readiness for diversity and inclusion.

**Course Outcome:**

**Student will be able to**

C01	Students will understand the fundamentals of democracy, including equality, justice and human rights and will be able to challenge negative attitudes and stereotypes about all genders (various gender identities identified in contemporary society).
C02	Students will develop empathy and understanding democratic values and can develop a sense of responsible citizenship and healthy relations.
C03	Students will develop critical thinking and analytical skills, fostering them to evaluate democratic issues and can create increased readiness for diversity and inclusion.
C04	Students will be inspired to become active citizens, by engaging in democratic processes.

Semester No.	Course Code	Type of Course	Course Title	Credits	Lectures per week
II	BBACA201CC	Co-Curricular (CC)	Physical Education - II	02	03

<b>CODE</b>	<b>CA-301</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	The aim of this syllabus is to give knowledge about using digital marketing in and as business.
<b>CO-2</b>	To make SWOT analysis, SEO optimization and use of various digital marketing tools.
<b>CO-3</b>	To understand Case study and Exercise on various terms
<b>CO-4</b>	To understand Digital marketing for business purpose

<b>Course Title</b>	<b>Data Structure</b>
<b>CODE</b>	<b>CA-302</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To understand the concept of ADT's
<b>CO-2</b>	To learn linear data structures – lists, stacks, and queues
<b>CO-3</b>	To understand sorting, searching and hashing algorithms
<b>CO-4</b>	To apply Tree and Graph structures

<b>Course Title</b>	<b>Software Engineering</b>
<b>CODE</b>	<b>CA-303</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To understand system concepts.
<b>CO-2</b>	To understand Software Engineering concepts.

<b>CO-3</b>	To understand the applications of Software Engineering concepts and Design in Software development	
-------------	--	--

<b>Course Title</b>	<b>Angular - JS</b>	
<b>CODE</b>	<b>CA-304</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	
<b>CO-1</b>	By the end of this course, the students should be able to Understand Client Side MVC and SPA	
<b>CO-2</b>	Explore AngularJS Component	
<b>CO-3</b>	Develop an AngularJS Single Page Application	
<b>CO-4</b>	Create and bind controllers with Javascript	
<b>CO-5</b>	Apply filter in AngularJS application	

<b>Course Title</b>	<b>Big Data</b>	
<b>CODE</b>	<b>CA-305</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	
<b>CO-1</b>	To enable learners to develop expert knowledge and analytical skills in current and developing areas of analysis statistics, and machine learning	
<b>CO-2</b>	To enable the learner to identify, develop and apply detailed analytical, creative, problem solving skills.	
<b>CO-3</b>	Provide the learner with a comprehensive platform for career development, innovation and further study.	

<b>Course Title</b>	<b>Basic Course in Environmental Awareness</b>	
<b>CODE</b>	<b>CA-307</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	
<b>CO-1</b>	Provide an opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment	
<b>CO-2</b>	To develop conscious towards a cleaner and better managed environment	

<b>Course Title</b>	<b>Computer Laboratory Based on 302 , 304 and 305</b>	
<b>CODE</b>	<b>CA-306</b>	
<b>CO No.</b>	<b>Course Outcomes</b>	
<b>CO-1</b>	To assess the knowledge of student in Data Structure, Angular JS and R programming	
<b>CO-2</b>	To acquire knowledge on writing computer programs using concept of Data Structure , Angular JS and R programming	
<b>CO-3</b>	To create and manage Applications using Data Structure , Angular JS and R programming	

<b>Course Title</b>	<b>Networking</b>
<b>CODE</b>	<b>CA-401</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To gain knowledge about Computer Networks concepts.
<b>CO-2</b>	To know about working of networking models, addresses, transmission medias and connectivity devices.
<b>CO-3</b>	To acquire information about network security and cryptography.

<b>Course Title</b>	<b>Object Oriented Concepts Through CPP</b>
<b>CODE</b>	<b>CA-402</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	Acquire an understanding of basic object-oriented concepts and the issues involved in effective class design.
<b>CO-2</b>	Enable students to write programs using C++ features like operator overloading, constructor and destructor, inheritance, polymorphism and exception handling.

<b>Course Title</b>	<b>Operating System</b>
<b>CODE</b>	<b>CA-403</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To know the services provided by Operating System
<b>CO-2</b>	To know the scheduling concept
<b>CO-3</b>	To understand design issues related to memory management and various related algorithms.
<b>CO-4</b>	To understand design issues related to File management and various related algorithms

<b>Course Title</b>	<b>Advance PHP</b>
<b>CODE</b>	<b>CA-405</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To know & understand concepts of internet programming.
<b>CO-2</b>	Understand how server-side programming works on the web.
<b>CO-3</b>	Understanding How to use PHP Framework (Joomla / Druple)

<b>Course Title</b>	<b>Computer Laboratory Based on 402 and 404</b>
<b>CODE</b>	<b>CA-406</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To assess the knowledge of student in CPP and Adv. PHP
<b>CO-2</b>	To acquire knowledge on writing computer programs using concept of CPP and Adv. PHP
<b>CO-3</b>	To create and manage Applications using CPP and Adv. PHP

<b>Course Title</b>	<b>Cyber Security</b>
<b>CODE</b>	<b>CA-501</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To understand the fundamentals of cyber security.
<b>CO-2</b>	To understand various categories of Cybercrime, Cyber-attacks on mobile, tools and techniques used in Cybercrime and case studies.
<b>CO-3</b>	To have an overview of the Cyber laws and concepts of Cyber forensics.

<b>Course Title</b>	<b>Object Oriented Software Engineering</b>
<b>CODE</b>	<b>CA-502</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To understand the fundamentals of object modeling
<b>CO-2</b>	To understand and differentiate Unified Process from other approaches.
<b>CO-3</b>	To design with static UML diagrams.
<b>CO-4</b>	To design with the UML dynamic and implementation diagrams.
<b>CO-5</b>	To improve the software design with design patterns.
<b>CO-6</b>	To test the software against its requirements specification.

<b>Course Title</b>	<b>Core Java</b>
<b>CODE</b>	<b>CA-503</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To introduce the object oriented programming concepts.
<b>CO-2</b>	To understand object oriented programming concepts, and apply them in solving problems.
<b>CO-3</b>	To introduce the principles of inheritance and polymorphism; and demonstrate how they relate to the design of abstract classes
<b>CO-4</b>	To introduce the implementation of packages and interfaces
<b>CO-5</b>	To introduce the concepts of exception handling and multithreading.
<b>CO-6</b>	To introduce the design of Graphical User Interface using applets and swing controls.

<b>Course Title</b>	<b>Python</b>
<b>CODE</b>	<b>CA-504</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	Define and demonstrate the use of built-in data structures “lists” and “dictionary”.
<b>CO-2</b>	Design and implement a program to solve a real world problem.
<b>CO-3</b>	Design and implement GUI application and how to handle exceptions and files.

<b>Course Title</b>	<b>Project</b>
<b>CODE</b>	<b>CA-505</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	Students can express their ideas clearly and effectively, both verbally and in written form.
<b>CO-2</b>	Students can work as a team to achieve common goals.
<b>CO-3</b>	Students are able to make links across different areas of knowledge and to generate, develop and evaluate ideas and information related to the project.
<b>CO-4</b>	Students are able to learn on their own, reflect on their learning and improve upon it.

<b>Course Title</b>	<b>Computer Laboratory Based on 502 and 503</b>
<b>CODE</b>	<b>506</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To assess the knowledge of student in Java Programming, Python
<b>CO-2</b>	To acquire knowledge on writing computer programs using concept of Java Programming, Python
<b>CO-3</b>	To create and manage Applications using Java Programming, Python

<b>Course Title</b>	<b>Ad-on Internet of Things (IoT)</b>
<b>CODE</b>	<b>CA-507</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To understand Technical aspects of Internet of things.
<b>CO-2</b>	To describe smart objects and IoT Architecture.
<b>CO-3</b>	To study and compare different Application protocols of IoT.
<b>CO-4</b>	To understand IoT platform using Arduino Uno.

<b>Course Title</b>	<b>Recent Trends in IT</b>
<b>CODE</b>	<b>CA-601</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To discuss the basic concepts AI.
<b>CO-2</b>	To apply basic, intermediate and advanced techniques to mine the data.
<b>CO-3</b>	To provide an overview of the concept of Spark programming.

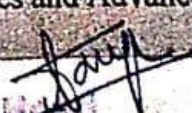
<b>Course Title</b>	<b>Software Testing</b>
<b>CODE</b>	<b>CA-602</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	Students will be introduced to testing tools.
<b>CO-2</b>	Students will acquire Knowledge of Basic SQA.
<b>CO-3</b>	Students will be able to design basic Test Cases.

<b>Course Title</b>	<b>Advanced Java</b>
<b>CODE</b>	<b>CA-603</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	Students will know the concepts of JDBC Programming.
<b>CO-2</b>	Students will know the concepts of Multithreading and Socket Programming.
<b>CO-3</b>	Students will know the concepts of Spring and Hibernate.
<b>CO-4</b>	Students will develop the project by using JSP and JDBC.
<b>CO-5</b>	Students will develop applications in Spring and hibernate

<b>Course Title</b>	<b>Dot Net Framework</b>
<b>CODE</b>	<b>CA-604</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To know the concept of software testing.
<b>CO-2</b>	To understand how to test bugs in software.
<b>CO-3</b>	To develop programming logic.

<b>Course Title</b>	<b>Project</b>
<b>CODE</b>	<b>605</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	Students can express their ideas clearly and effectively, both verbally and in written form.
<b>CO-2</b>	Students can work as a team to achieve common goals.
<b>CO-3</b>	Students are able to make links across different areas of knowledge and to generate, develop and evaluate ideas and information related to the project.
<b>CO-4</b>	Students are able to learn on their own, reflect on their learning and improve upon it.

<b>Course Title</b>	<b>Computer Laboratory Based on 601 and 602</b>
<b>CODE</b>	<b>606</b>
<b>CO No.</b>	<b>Course Outcomes</b>
<b>CO-1</b>	To assess the knowledge of student in Advanced Web Technologies and Advance Java
<b>CO-2</b>	To acquire knowledge on writing computer programs using concept of Advanced Web Technologies and Advance Java
<b>CO-3</b>	To create and manage Applications using Advanced Web Technologies and Advance Java

  
 HOD  
 BBA (CA) DEPT.  
 ...