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 II								
Course Type	Course		Paper Title	Hours / Week	Credits	Internal	External	Total
Major Mandatory (06)	Major Mandatory 4	BBACA201T	Advance C Programming	3	2	15	35	50
	Major Mandatory 5	BBACA202T	Relational Database Management System (RDBMS)	3	2	15	35	50
	Major Mandatory 6 (Practical)	BBACA201P	Computer Laboratory based on Advance C and RDBMS	5	2	15	35	50
Minor	Minor 1	BBACA201MI	Principle and Practices of Management	3	2	15	35	50
Open Elective (OE)	Open Elective 3	OE-101-CA	Introduction to Data Science	3	2	15	35	50
	Open Elective 4	OE-102-IT	Tally Prime	3	2	15	35	50
Vocational Skill Development Course (VSC)	Vocational Skill Development Course (VSC) (Practical)	BBACA201VSC	Web Technology	5	2	15	35	50
Skill Enhancement Course (SEC)	Skill Enhancement Course (SEC)	BBACA201SEC	E-Commerce	3	2	15	35	50
Ability Enhancement Course (AEC)	Ability Enhancement Course (AEC)	BBACA201AEC	Business Communication Skills-II	3	2	15	35	50
Value Education Course (VEC)	Value Education Course (VEC)	BBACA201VEC	Democracy Awareness & Gender Sensitization	3	2	15	35	50
Co-Curricular Courses (CC)	Co-Curricular Courses (CC)	BBACA201CC	Physical Education – II	@ Department	2	15	35	50
			Total	-	22	165	385	550

Detail Syllabus

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**

Unit	Title and Contents	No. of Lectures
1	Arrays, Strings, and Pointers 1.1 Arrays and Functions 1.1.1 Passing Arrays to Functions 1.2 Introduction to Strings 1.2.1 Declaration 1.2.2 Definition 1.2.3 Initialization 1.2.4 Format Specifiers 1.2.5 Reading and Writing from Console 1.3 String Manipulation 1.3.1 Predefined String Functions 1.3.2 User-Defined String Functions 1.4 Introduction to Pointers 1.4.1 Declaration 1.4.2 Definition 1.4.3 Initialization and Usage 1.4.4 Types of Pointers 1.4.5 Pointer Arithmetic 1.4.6 Multiple Indirection 1.4.7 Parameter Passing: Call by Value and Call by Reference 1.5 Pointers and Arrays 1.5.1 Pointer to Array 1.5.2 Array of Pointers	**15**

	1.6 Functions and Pointers 1.6.1 Passing Pointers to Functions 1.6.2 Returning Pointers from Functions 1.7 Dynamic Memory Allocation 1.7.1 malloc( ) 1.7.2 calloc( ) 1.7.3 free( ) 1.7.4 realloc( )	
2	**Structures and Basic File Handing** 2.1 Introduction 2.1.1 Declaration 2.1.2 Definition 2.1.3 Initialization 2.2 Accessing structure members (. operator) 2.3 Array of structures 2.4 Pointers to structures 2.4.1 Declaring pointer to structure 2.4.2 Accessing structure members 2.5 Structures & functions 2.6 Passing each member of structure as a separate argument 2.7 Passing structure by value / address Nested structures 2.8 Union 2.8.1 Declaration of union Accessing structure members 2.9 Difference between Structures and Union Preprocessor and File Handling 2.10 Preprocessor Introduction 2.11 Format of preprocessor directives 2.12 File inclusion directives (#include), Macro substitution directives (#define), nested macros, parameterized macros. 2.13 File Handling Concept of streams, need 2.14 Types of files, Operations on text & binary files, Random access file 2.15 library functions for file handling – fopen, fclose, fgetc, fputc, fseek, fgets, fputs	**15**

Reference Books

1. How to Solve it by Computer, R.G. Dromey, Pearson Education.
2. Problem Solving and Programming Concept, Maureen Sprankle,7thEdition, 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.	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.

Unit	Title and Contents	No. of Lectures
1	**Introduction to RDBMS and PL-SQL** 1.1 Introduction to RDBMS 1.1.1 Difference between DBMS and RDBMS 1.1.2 Advantages and Disadvantages of RDBMS 1.2 Overview of PLSQL 1.2.1 Data Types 1.2.2 PLSQL Block 1.2.3 Variables, Constant 1.2.4 Operator 1.3 Control Statement 1.3.1 Conditional Control 1.3.2 Looping Control 1.3.3 Sequential Control 1.3.4 Case Statement 1.4 Exception Handling 1.4.1 Structure of Exception Handling 1.4.2 Types of Exception 1.4.3 Handling Exception 1.5 Functions 1.5.1 Create a Function 1.5.2 Calling a Function 1.6 Procedures 1.6.1 Creating a Procedure 1.6.2 Executing a Standalone Procedure 1.7 Cursor 1.7.1 Attributes of Cursor 1.7.2 Types of Cursors 1.8 Trigger	10

	1.8.1 Types of Triggers 1.8.2 Different Operation on Triggers 1.9 Package 1.9.1 Characteristics of PL/SQL Package 1.9.2 Advantages of PL/SQL Packages	
2	**Transaction Management** 2.1 Transaction Concept 2.1.1 Transaction Concept 2.1.2 ACID Properties 2.1.3 Transaction State 2.1.4 Transaction Operation 2.2 Schedule 2.2.1 Serial Schedule 2.2.2 Concurrent Schedule 2.3 Serializability 2.3.1 Conflict Serializability 2.3.2 View Serializability 2.3.3 Testing for Serializability 2.4 Recoverability 2.4.1 Recoverable Schedules 2.4.2 Cascade less Schedules	**10**
3	**Concurrency Control & Recovery System** 3.1 Lock Based Protocol 3.1.1 Lock 3.1.2 Locking Protocol 3.1.3 Locking Techniques for Concurrency Control 3.1.4 Granting of Locks 3.1.5 Two-Phase Locking Protocol 3.2 Timestamp Based Protocol 3.3 Deadlock Handling 3.3.1 Deadlock 3.3.2 Techniques of Deadlock Handling 3.3.3 Deadlock Prevention 3.3.4 Deadlock Detection 3.3.5 Deadlock Recovery 3.4 Failure Classification 3.5 Recovery & Atomicity 3.6 Recovery with concurrent transaction	**10**

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. Vander Lans by Pearson
5. Modern Database Management by Jeffery A Hoffer, V. Ramesh, Heikki Topi, Pearson
6. Database Management Systems by Debabrata Sahoo, Tata Mac Graw Hill

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**

Unit	Title and Contents	No. of Lectures
1	**Introduction** Nature of management Meaning, importance, functions, types of 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	**Functions of Management** Major managerial Functions Planning, needs types, methods, advantages, merits Forecasting, need types, methods, advantages, merits, Decision Making Process and Techniques, Styles of directing, methods of co-ordination	**15**

References

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.	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

Unit	Title and Contents	No. of Lecture Hours
1	**Introduction** What and why learn Data Science? Types of Data -structured, semi-structured, unstructured Data Applications of Data Science, The Data Science Lifecycle, Role of Data Scientists Data sources-Open Data, Social Media Data, Multimodal Data, standard datasets	**06**
2	**Statistics for Data Science** Data Objects and Attributes, Attribute Types: Nominal, Binary, Ordinal Attributes, Numeric Attributes, Discrete versus Continuous Attributes, Role of statistics in Data Science Descriptive statistics - Measuring the Frequency, Measuring the Central Tendency: Mean, Median, and Mode, Measuring the Dispersion: Range, Standard deviation, Variance, Inter quartile Range	**06**
3	**Data science Models and Tasks**	**06**

	Predictive and Descriptive Models, Introduction to Data Science Tasks – Classification, Prediction, Association, Clustering, Performing simple Data Science Tasks using WEKA / R	
4	**Data Quality and Pre-processing** Data Quality: Why Preprocess the Data? Data munging/wrangling operations Data Cleaning - Missing Values, Noisy Data Data Transformation – Rescaling, Normalizing, Data reduction and Data discretization	**06**
5	**Data Visualization** Introduction to Exploratory Data Analysis (EDA), Data visualization, Basic data visualization tools –Box Plots, Histograms, Bar charts/graphs, Scatter plots, Line charts, Area plots, Pie charts	**06**

Reference Books:

1. Data Science Fundamentals and Practical Approaches, Gypsy Nandi, Rupam
2. Sharma, BPB Publications, 2020.
3. Data Mining Concepts and Techniques, Third Edition, Jiawei Han, Micheline
4. Kamber, Jian Pei, Morgan Kaufmann, 2012.
5. A Hands-On Introduction to Data Science, Chirag Shah, University of Washington
6. Cambridge University Press

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

Practical Assignments

Assignment 1.

Creation of Company

Set up a new company in Tally Prime.

Assignment 2

Creation of Ledgers under appropriate groups of Tally Prime.

Assignment 3

Pass an entry of Capital brought by cash of Rs. 200000 in Reciept.

Assignment 4

To Create Multiple ledgers under a single group.

Assignment 5

Create necessary ledgers for Purchase Invoice using New Reference Billwise option.. Creation of ledger of Party ,Purchase

Assignment 6

Creation of GST ledgers

Assignment 7

Pass the entry of Purchase in voucher.

Assignment 8

To Pass a payment entry against the Purchase Invoice using against reference option and check the reports of outstandings.

References :

https://www.tallyofficialbooks.com/

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.

Unit	Title and Contents	No. of Lectures
1.	**HTML** 1.1 Introduction to HTML 1.2 Basic HTML Structure 1.3 Common HTML Tags 1.4 Physical and Logical HTML 1.5 Types of Images, client side and server-side Image mapping 1.6 List, Table, Frames 1.7 Embedding Audio, Video 1.8 HTML form and form elements	10
2.	**Style sheets** 2.1 Need for CSS 2.2 Introduction to CSS 2.3 Using CSS background images, colors and properties, manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning using CSS 2.5 Overview and features of CSS2 and CSS3	10
3	**JavaScript** 3.1 Introduction to Java Script 3.2 Identifier & operator, control structure, functions 3.3 Predefined functions, math & string functions 3.4 Array in Java scripts	10

Reference Books:

1. Complete HTML-Thomas Powell
2. HTML and Java Script–Ivan Bayross
3. HTML& CSS: The Complete Reference, Fifth Edition
4. Mastering HTML, CSS & Java script Web Publishing

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

Unit	Title and Contents	No. of Lectures
1	**Introduction to Electronic Commerce** 1.1 What is E-Commerce (Introduction and Definition) 1.2 Main activities E-Commerce 1.3 Goals of E-Commerce 1.4 Technical Components of E-commerce 1.5 Functions of E-commerce 1.6 Advantages and Disadvantages of E-commerce 1.7 Scope of E-commerce 1.8 Electronic commerce Applications 1.9 Electronic commerce and Electronic Business 1.10 (C2C)(2G , G2G , B2G , B2P,B2A,P2P, B2A, C2A, B2B,B2C)	**12**
2	Electronic payment System 2.1 Introduction 2.2 Types of Electronic payment system 2.3 Payment types 2.4 Traditional payment 2.5 Value exchange system 2.6 Credit card system 2.7 Electronic funds transfer 2.8 Paperless bill 2.9 Modern payment cash 2.10 Electronic cash	**08**
3	**E-com Security** 3.1 E-commerce security environment 3.2 Security threats in E-com environment 3.3 Malicious code and unwanted programs 3.4 Hacking and cyber vandalism 3.5 Credit card fraud/Theft	**10**

	3.6	Spoofing	
	3.7	Denial of service(DOS)	
	3.8	Distributed denial of service(dDOS)	

Reference Books:

1 Internet marketing and E-commerce-Ward Hanson and Kirthi Kalyanam
2 E-Commerce Concepts , Models , Strategies by -- G.S.V Murthy
2 Electronic Commerce by --Gary P. Schneider
3 E-Commerce- Kenneth C. Laudon and Carol Guercio Traver
4 E-Commerce by --Kamlesh K Bajaj and Debjani Nag

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.

Unit	Title and Contents	No. of Lectures
1	**Oral Communication** 1.1 Definition, merits and demerits. 1.2 Presentation skills: Preparation for self-introduction and effective presentation. Overcoming fear during presentation. 1.3 Interview skills: Interview and types of interviews. Preparation before, during and after an interview . 1.4 Do's and Don'ts in an interview	15
2	**Personality Development and communication skills.** 2.1 The concept of personality - Factors affecting personality development , Importance of Personality Development. 2.2 Self Awareness – Meaning – Benefits of Self – Awareness – Developing Self – Awareness. 2.3 Attitude : meaning and types, Factors affecting attitudes ,Positive attitude – Advantages, Negative attitude- Disadvantages ,Ways to develop positive attitude 2.4 Self SWOC Analysis – Meaning – Importance-Application .	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, Taxman Publications

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

CO1	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).
CO2	Students will develop empathy and understanding democratic values and can develop a sense of responsible citizenship and healthy relations.
CO3	Students will develop critical thinking and analytical skills, fostering them to evaluate democratic issues and can create increased readiness for diversity and inclusion.
CO4	Students will be inspired to become active citizens, by engaging in democratic processes.

Unit	Title and Contents	No. of Lectures
1	**Introduction to Democracy and democratic values and principles** • Types of democracy, Democracy, and constitution, Understanding democratic Values & Principles • Indian political system - legislature, executive, judiciary • Federal structure - central and state government, role of political parties and pressure groups in democracy • Duties of citizens and government & Future of democracy	05
2	**Challenges to Democracy and corrective measures**. • Illiteracy, poverty, gender discrimination, casteism, communalism, corruption, criminalization in politics, violence etc. • Strengthening Democracy- Education and sensitization, Technological innovations- E-governance, digital participation etc.	08

3	**Understanding gender-related concepts, gender-based violence and democracy** • Gender roles, social construction of Gender • Patriarchal family structure and its effects • The democratic deficit in the form of women's participation and governance • Strategies to address deficit – Promoting Gender Equity and Equality	**08**
4	**Addressing challenges** • Breaking gender stereotypes in families • Empowering women's representation in society • Men's participation in advocating gender equality, • Setting the approach of Reciprocity for the betterment of every individual	**09**

Reference Material

1. https://ncert.nic.in/textbook.php?iess4=0-5
2. Democratic Politics – Text book in political science std IX
3. https://nios.ac.in/media/documents/SecSocSciCour/English/Book2.pdf
4. National Institute of Open Schooling – Social Science
5. https://maharashtraboardsolutions.com/maharashtra-state-board-class-11-political-science-solutions/
6. MHBSHC- Standard 11 – Political Science
7. Gramin Vikas Mantralay Bharat Sarkar – Gender module
8. NATIONAL COMMISSION FOR WOMEN NEW DELHI - 'Gender Sensitization and Legal Awareness Programme

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

Details syllabus and execution guidelines for Physical Education will be shared separately