

**Progressive Education Society's**

**Modern College of Arts, Science and Commerce,  
Ganeshkhind, Pune-16**

**(An Autonomous College Affiliated to Savitribai Phule Pune University)**

# **Framework of Syllabus**

**For**

**First Year**

**B.B.A.(Computer Application.)**

**(2022-23 Course)**

**(With effect from 2022-23)**

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
CCT-1	1	Business Communication	22-BBACA111	3	30	70		100
CCT-2	2	Principle of Management	22-BBACA112	3	30	70		100
CCT-3	3	Introduction of C Programming	22-BBACA113	3	30	70		100
CCT-4	4	Database Management System	22-BBACA114	3	30	70		100
CCT-5	5	Statistics	22-BBACA115	3	30	70		100
PR-1	6	Computer Laboratory based on 113 & 114	22-BBACA116	4			100	100
SEC-1	7	Add-On(PPA)	22-BBACA117	2	50			50
FYBBA(CA) Sem II								
Course Type	Sr. No.	Course(Subject) Title	Course(Subject) Code	Credits	Weightage for Internal Marks	Weightage for External Marks	Weightage for practical	Total Marks
CCT-1	1	Organization Behavior & Human Resource Management	22-BBACA121	3	30	70		100
CCT-2	2	Financial Accounting	22-BBACA122	3	30	70		100
CCT-3	3	Business Mathematics	22-BBACA123	3	30	70		100
CCT-4	4	Relational Database Management System	22-BBACA124	3	30	70		100
CCT-5	5	Web Technology	22-BBACA125	3	30	70		100
PR-1	6	Computer Laboratory based on 124 & 125	22-BBACA126	4			100	100
SEC-1	7	Add-On(Advance C)	22-BBACA127	2	50			50

**Credit Allocation: -**

CC-Core Course, EC-Elective Course, PR-Practical, PJ-Project, AECC-Ability Enhancement Compulsory Courses, SEC-Skill Enhancement Courses.

Total - 132 Credits for Three years Programme.



**Progressive Education Society's**  
**Modern College of Arts, Science and Commerce (Autonomous)**  
**Ganeskhind, Pune-16**  
**Syllabus for B.B.A (CA) (CBCS 2022 Pattern)**  
**Semester I Subject Code: - 22-BBACA113**  
**Subject Name -: Introduction to C Programming**

Total Contact Hours: -48

Total Credits: - 3

**Course Objective:**

- i. To understand fundamental of programming**
- ii. Develop basic programming skill among students**
- iii. Develop understanding of converting logical thinking into programming**

**Course Outcome:**

CO1: Student will be able to learn the basic terminologies of C language.

CO2: Students will be able to solve problem by analyzing and converting logical thinking to computer understandable format using C Programming.

CO3: Students will be able to design their own program to solve mathematical problems using C Programming.

Unit No.	Topics	No. of Lectures
1	<b>Introduction to C Programming</b> 1.1 History of C Programming 1.2 Basic structure of C Programming 1.3 Language fundamentals 1.3.1 Character set, tokens 1.3.2 Keywords and identifiers 1.3.3 Variables and data types 1.4 Operators 1.4.1 Types of operators 1.4.2 Precedence and associativity 1.4.3 Expression	3
2	<b>Managing I/O operations</b> 2.1 Console based I/O and related built-in I/O functions 2.1.1 printf(), scanf() 2.1.2 getch(), getchar(), getche() 2.2 Formatted input and formatted output	2
3	<b>Decision Making and Looping Structures</b> 3.1 Introduction 3.2 Decision making structure 3.2.1 If statement 3.2.2 If-else statement 3.2.3 Nested if-else statement 3.2.4 Conditional operator 3.2.5 Switch statement 3.3 Loop control structures 3.3.1 while loop 3.3.2 Do-while loop 3.3.3 For loop 3.3.4 Nested for loop 3.4 Jump statements 3.4.1 break 3.4.2 continue 3.4.3 goto 3.4.4 exit	9

**Progressive Education Society's**  
**Modern College of Arts, Science and Commerce (Autonomous)**  
**Ganeskhind, Pune-16**  
**Syllabus for B.B.A (CA) (CBCS 2022 Pattern)**  
**Semester I Subject Code: - 22-BBACA113**  
**Subject Name -: Introduction to C Programming**

4	<p><b>Programs through conditional and looping statements</b>  Addition / Multiplication of integers  Determining if a number is +ve / -ve / even / odd  Maximum of 2 numbers, 3 numbers  Sum of first n numbers, given n numbers  Integer division, Digit reversing, Table generation for n, ab  Factorial, sine series, cosine series, nCr , Pascal Triangle  Prime number, Factors of a number, Perfect number,  GCD of 2 numbers etc (Write algorithms and draw flowcharts)</p>	5
5	<p><b>Arrays and Strings</b>  5.1 Introduction to one-dimensional Array  5.1.1 Definition  5.1.2 Declaration  5.1.3 Initialization  5.2 Accessing and displaying array elements  5.3 Finding smallest and largest number from array  5.4 Reversing array  5.5 Finding odd/even/prime number from array  5.4 Introduction to two-dimensional Array  5.4.1 Definition  5.4.2 Declaration  5.4.3 Initialization  5.5 Accessing and displaying array elements  5.6 Matrices: Addition, Multiplication, Transpose,  Symmetry, upper/lower triangular  5.7 Introductions to Strings  5.7.1 Definition  5.7.2 Declaration  5.7.3 Initialization  5.8 Standard library functions  Implementations without standard library functions.</p>	12
6	<p><b>6 Functions</b>  6.1 Introduction  6.1.1 Purpose of function  6.1.2 Function definition  6.1.3 Function declaration  6.1.4 Function call  6.2 Types of functions  6.3 Call by value and call by reference  Storage classes</p>	9
7	<p><b>7 Structures</b>  7.1 Introduction to structure  7.2 Definition  7.3 Declaration  7.4 Accessing members  structure operations nested structure</p>	4

**Progressive Education Society's**  
**Modern College of Arts, Science and Commerce (Autonomous)**  
**Ganeskhind, Pune-16**  
**Syllabus for B.B.A (CA) (CBCS 2022 Pattern)**  
**Semester I Subject Code: - 22-BBACA113**  
**Subject Name -: Introduction to C Programming**

8	<b>8 Introduction to Pointer</b> 8.1 Definition 8.2 Declaration 8.3 Initialization 8.4 Indirection operator and address of operator 8.5 Pointer arithmetic 8.6 Dynamic memory allocation Functions and pointers	4
	<b>Total Lectures</b>	48

**Reference Books :-**

- 1) Let us C –YashwantKanetkar, BPB publication.
- 2) Ansi C- Balagurusamy
- 3) The complete Reference- HerbeltSchildt

Subject Teacher

BOS Chairman

Vice Principal

Progressive Education Society's  
Modern College of Arts, Science and Commerce (Autonomous)  
Ganeskhind, Pune-16

Syllabus for B.B.A (CA) (CBCS 2022 Pattern)  
Semester I Subject Code: - 22-BBACA114  
Subject Name -: Database Management System

Total Contact Hours: -48

Total Credits: - 3

**Objectives:**

- i) Enables students to understand database concepts.
- ii) To understand advantages of DBMS over File Processing System.

**Outcomes:**

CO1: Able to understand basic database concepts in database system.

CO2: To get knowledge of Front End and Backend.

CO3: Able to write SQL queries and do database connectivity with any front-end platform.

Sr. No.	Chapter No.	Name of Chapter and Contents	No. of Lect.
1	1	File Structure and Organization 1.1 Introduction 1.2 Logical and Physical Files 1.2.1 File 1.2.2 File Structure 1.2.3 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 Types of file organization 1.4.3.1 Sequential 1.4.3.2 Indexed 1.4.3.3 Hashed 1.5 Indexing 1.5.1 What is an Index? 1.5.2 When to use Indexes? 1.5.3 Types of Index 1.5.3.1 Dense Index 1.5.3.2 Sparse Index	6

2	2	<p><b>Database Management System</b></p> <p>2.1 Introduction</p> <p>2.2 Basic Concept and Definitions</p> <p style="padding-left: 20px;">2.2.1 Data and Information</p> <p style="padding-left: 20px;">2.2.2 Data Vs Information</p> <p style="padding-left: 20px;">2.2.3 Data Dictionary</p> <p style="padding-left: 20px;">2.2.4 Data Item or Field</p> <p style="padding-left: 20px;">2.2.5 Record</p> <p>2.3 Definition of DBMS</p> <p>2.4 Applications of DBMS</p> <p>2.5 File processing system Vs. DBMS</p> <p>2.6 Advantages and Disadvantages of DBMS</p> <p>2.7 Users of DBMS</p> <p style="padding-left: 20px;">2.7.1 Database Designers</p> <p style="padding-left: 20px;">2.7.2 Application programmer</p> <p style="padding-left: 20px;">2.7.3 Sophisticated Users</p> <p style="padding-left: 20px;">2.7.4 End Users</p> <p>2.8 Views of Data</p> <p>2.9 Data Models</p> <p style="padding-left: 20px;">2.9.1 Object Based Logical Model</p> <ul style="list-style-type: none"> <li>• Object Oriented Data Model</li> <li>• Entity Relationship Data Model</li> </ul> <p style="padding-left: 20px;">2.9.2 Record Base Logical Model</p> <ul style="list-style-type: none"> <li>• Relational Model</li> <li>• Network Model</li> <li>• Hierarchical Model</li> </ul> <p>2.10 Entity Relationship Diagram(ERD)</p> <p>2.11 Extended features of ERD</p> <p style="padding-left: 40px;">Overall System structure</p>	14
3	3	<p><b>Relational Model</b></p> <p>3.1 Introduction</p> <p>3.2 Terms</p> <p style="padding-left: 20px;">a. Relation</p> <p style="padding-left: 20px;">b. Tuple</p> <p style="padding-left: 20px;">c. Attribute</p> <p style="padding-left: 20px;">d. Cardinality</p> <p style="padding-left: 20px;">e. Degree of relationship set</p> <p style="padding-left: 20px;">f. Domain</p> <p>3.3 Keys</p> <p style="padding-left: 20px;">3.3.1 Super Key</p> <p style="padding-left: 20px;">3.3.2 Candidate Key</p> <p style="padding-left: 20px;">3.3.3 Primary Key</p> <p style="padding-left: 20px;">3.3.4 Foreign Key</p> <p>3.4 Relational Algebra Operations</p> <p style="padding-left: 20px;">a. Select</p> <p style="padding-left: 20px;">b. Project</p> <p style="padding-left: 20px;">c. Union</p> <p style="padding-left: 20px;">d. Difference</p> <p style="padding-left: 20px;">e. Intersection</p> <p style="padding-left: 20px;">f. Cartesian Product</p> <p style="padding-left: 20px;">g. Natural Join</p>	8



4	4	<b>SQL (Structured Query Language)</b> 4.1 Introduction 4.2 History Of SQL 4.3 Basic Structure 4.4 DDL Commands 4.5 DML Commands 4.6 Constraints in SQL. 4.7 SQL Functions-Date, Time, Numeric, String , Conversion functions 4.8 Simple Queries 4.9 Nested Queries 4.10 Aggregate Functions	12
5	5	<b>Relational Database Design</b> 5.1 Introduction 5.2 Anomalies of un normalized database 5.3 Normalization 5.4 Normal Form 5.4.1 1 NF 5.4.2 2 NF 5.4.3 3 NF 5.4.4 Example	8

**References:**

- 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 Teacher

BOS Chairman

Vice Principal

**Progressive Education Society's**  
**Modern College of Arts, Science and Commerce (Autonomous)**  
**Ganeskhind, Pune-16**  
**Syllabus for B.B.A (CA) (CBCS 2022 Pattern)**  
**Semester I Subject Code: - 22-BBACA117**  
**Subject Name -: Principles of Programming and Algorithms**

Total Contact Hours: -30

Total Credits: - 2

Pre requisite: Basic Mathematics

**Credit Distribution:** 1 credit for theory (15 Lectures) and 1 credit for practical's.

**Objectives:** To develop Analytical / Logical thinking and problem solving capabilities.

**Course Outcomes:**

CO1: Analytical and Logical Thinking is developed amongst students.

CO2: Able to find solution of problems using Problem Solving Techniques.

CO3: Learn Basic idea of programming.

CO4: Able to write their own algorithms.

Unit No.	Contents	Lectures
1	<b>Flowchart</b> 1.1 Introduction 1.2: Flowcharts (Definitions, Symbols) 1.3 Examples (Write algorithms and draw flowcharts) 1.3.1 Addition / Multiplication of integers. 1.3.2 Determining if a number is +ve / -ve / even / odd. 1.3.3 Maximum of 2 numbers, 3 numbers. 1.3.4 Sum of first n numbers, sum of given n numbers, Sum of digits of a given number, sum of first and last digit of a number. 1.3.5 Digit reversing, Table generation for number 'n', Factorial of a number, Prime number, Factors of a number, Perfect number, Palindrome number, Armstrong number, GCD and LCM of 2 numbers.	6
2	<b>Algorithm</b> 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	3
3	<b>Divide and Conquer Method</b> 3.1 General Method, control abstraction. 3.2 Binary search. 3.3 Merge sort, Quick sort	2
4	<b>Greedy Method</b> 4.1 Control Abstraction. 4.2 Knapsack Problem 4.3 Job Sequencing with deadline. 4.4 Minimum cost spanning trees, Kruskal algorithm, Prims Algorithm	4

**Progressive Education Society's**  
**Modern College of Arts, Science and Commerce (Autonomous)**  
**Ganeskhind, Pune-16**  
**Syllabus for B.B.A (CA) (CBCS 2022 Pattern)**  
**Semester I    Subject Code: - 22-BBACA117**  
**Subject Name -: Principles of Programming and Algorithms**

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 Teacher

BOS Chairman

Vice Principal

**F.Y. B.B.A (Computer Application)**

**Course code: BBACA-22-115**

**Statistics**

**Number of Credits: 3**

**Objective of the program**

1. To understand role and importance of statistics in various business situations
2. To develop skills related with basic statistical technique
3. Develop right understanding regarding regression, correlation and data interpretation.

**Course Outcomes (COs):**

- CO1) Students should recall concepts of mean, median and mode.
- CO 2) They will understand how to collect data using various statistical sampling methods and how to classify and represent that data graphically.
- CO 3) Students will learn through various statistical measures such as measures of central tendency, dispersion.
- CO 4) Students will be able to describe the correlation between interrelated variables
- CO 5) Students will be able to apply the concept of Regression between interrelated Variables in real life.

<b>Unit No.</b>	<b>Title of Unit and Contents</b>	<b>Lectures</b>
1.	<b>Concept of statistics</b> <ul style="list-style-type: none"><li>• Role of statistics. In informatics business science</li><li>• Tabulation (Two way)</li><li>• Data Condensation: Raw data, attributes and variables, classification, frequency distribution, cumulative frequency distributions.</li><li>• Graphical Methods: Histogram, Frequency polygon. Diagrams- Multiple bar, Pie, Subdivided bar, Scatter diagram, Mosaic plot using Excel.</li></ul>	12
2.	<b>Measures of central tendency and dispersion</b> <ul style="list-style-type: none"><li>• Criteria for good measures of central tendency</li><li>• Arithmetic mean, Median and Mode for grouped and ungrouped data</li><li>• Combined mean.</li><li>• Partition values: Quartiles</li></ul>	12
3.	<b>Measures of Dispersion</b> <ul style="list-style-type: none"><li>• Concept of dispersion</li><li>• Absolute and relative measure of dispersion: Range, Variance, Standard deviation, Combined Variance, Coefficient of variation, Quartile Deviation, Coefficient of Quartile deviation.</li></ul>	12
4.	<b>Correlation and Regression (for ungrouped data)</b> <ul style="list-style-type: none"><li>• Concept of correlation, positive &amp; negative correlation, Karl Pearson's Coefficient of correlation.</li><li>• Regression: meaning of regression, Regression equations of response variable Y on regressor variable X, Regression coefficients and properties.</li><li>• Residual: definition and Importance, Residual plot (using Excel) interpretation.</li></ul>	12

**References:**

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>
1	Business Statistics	Girish Phatak	Tech – Max
2	Statistics for Business	Dr. S. K. Khandelwal	International Book House
3	Fundamentals of Business Statistics	J.K. Sharma	Pearson
4	Business Statistics	G.C. Beri	The McGraw-Hill companies
5	Statistics Theory and Practice	R.S. N. Pillai Bagavathi	S. Chand
6	Statistics for Managerialdecision Making	Dr. S. K. Khandelwal	International Book House
7	Business Statistics For Contemporary Decision Making	Ken Black	Wiley India Edition
8	Fundamentals of statistics	S.C. Gupta	Himalaya PublicationHouse

Class : FY BBA(CA)

Semester-II

(CBCS) Pattern 2019

Name of the Paper : Business Mathematics

Course code 22-CA-203

22-BBA(A)23

No. of Credits : 3

Course Depth : Fundamental Knowledge

**Objectives:**

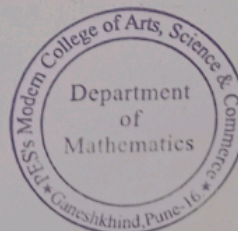
- i) To understand role and importance of Mathematics in various business situations and while developing softwares.
- ii) To develop skills related with basic mathematical technique.

**Course Outcomes**

CO	Details
CO1	Understand basic Mathematical concepts in interest , Ratio , proportion and percentage , Mutual funds , Matrices , Linear Programming
CO2	Mathematical calculations can be done required in daily life.
CO3	Learn computational skills and Mathematical techniques required in business situations.
CO4	Information is formulated and solution is obtain.
CO5	Developed Mathematical software help in solving business related problems.

*Dandharkar*

HEAD  
Department of Mathematics  
PES's Modern College of Arts, Science  
& Commerce, Ganeshkhind, Pune-16.



## Detailed Syllabus

Unit No	Topic	No of lectures
1	<b>Ratio, Proportion and Percentage:</b> Ratio – Definition, Continued Ratio, Inverse Ratio, Proportion, Continued Proportion, Direct Proportion, Inverse Proportion, Variation, Inverse Variation, Joint Variation, Percentage, computation of Percentage.	8
2	<b>Profit and Loss:</b> 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.	6
3	<b>Interest and Annuity:</b> Simple interest, Compound interest, equated monthly Instalments (EMI) by interest of reducing balance and flat interest methods and problems. Ordinary annuity, sinker fund, annuity due, present value, future value of annuity.	7
	<b>Shares and Mutual Funds:</b> Concepts of Shares, face value, market value, dividend, brokerage, equity shares, preferential shares, bonus shares, examples and problems, Concept of Mutual Funds, Change in Net Asset Value (NAV), Systematic Investment Plan (SIP), Examples and Problems.	7
4	<b>Matrices and Determinant:</b> Definition of Matrices, Types of Matrices, Algebra of Matrices, Determinant, Adjoint of Matrix, Inverse of Matrix, System of Linear equations, Solution of System of Linear Equation by adjoint method (up to 3 variables only).	10
5	<b>Linear Programming Problem (LPP) :</b> Concept of LPP, Formulation of LPP and solution of LPP by graphical method.	5
	<b>Transportation Problem (T.P.):</b> Concept of Transportation Problem, Initial Basic Feasible Solution, North-West Corner Method (NWCM), Least Cost Method (LCM), Vogel's Approximation method(VAM)	5
		48

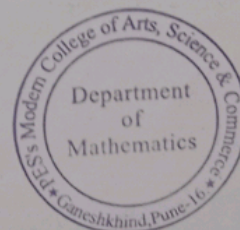
## Reference Books:

- 1) Business Mathematics by Dr. Amarnath Dikshit and Dr. Jinendrakumar Jain.
- 2) Business Mathematics by V. K. Kapoor – Sultan, Chand and sons. Delhi.
- 3) Business Mathematics by Bari – New Literature publishing company, Mumbai.
- 4) Operation Research by S. D. Sharma - Sultan, Chand and sons.
- 5) Operation Research by J. K. Sharma - Sultan, Chand and sons.

*Mandharkar*

HEAD

Department of Mathematics  
PES's Modern College of Arts, Science  
& Commerce, Ganeshkhind, Pune-16.



**Progressive Education Society's  
Modern College of Arts, Science and Commerce (Autonomous)  
Ganeskhind, Pune-16  
Syllabus for B.B.A (CA) (CBCS 2022 Pattern)  
Semester II Subject Code: - 22-BBACA124  
Subject Name -: Relational Database Management System**

Total Contact Hours: -48

Total Credits: - 3

**Objectives:**

1. Enables students to understand relational database concepts and transaction management concepts in database system.
2. Enables student to write PL/SQL programs that use: procedure, function, package, cursor and trigger.

**Expected Outcome:**

- CO1: Understanding of various RDBMS products .  
CO2: To get knowledge of Front End and Backend.  
CO3: Understanding of various programming aspects and Writing of compact code (Small Program writing).

Unit No.	Unit Title	Contents	No. of Lectures
1.	<b>Introduction To RDBMS</b>	Introduction to popular RDBMS product and their features. Difference Between DBMS and RDBMS. Relationship among application programs and RDBMS.	02
2.	<b>PL-SQL</b>	Overview of PLSQL Data Types ,PLSQL Block Exception Handling Functions, Procedures Cursor Trigger Package	20
3	<b>Transaction Management</b>	Transaction Concept Transaction Properties Transaction States Concurrent Execution Serializability Problem solving on Transactions	10
4	<b>Concurrency Control &amp; Recovery System</b>	Lock Based Protocol Timestamp Based Protocol Deadlock Handling Deadlock Problem Examples Failure Classification Recovery & Atomicity Recovery with concurrent transaction	16



**Progressive Education Society's**  
**Modern College of Arts, Science and Commerce (Autonomous)**  
**Ganeskhind, Pune-16**  
**Syllabus for B.B.A (CA) (CBCS 2022 Pattern)**  
**Semester II      Subject Code: - 22-BBACA124**  
**Subject Name -: Relational Database Management System**

**Suggested References:**

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

Subject Teacher

BOS Chairman

Vice Principal

**Progressive Education Society's  
Modern College of Arts, Science and Commerce(Autonomous)  
Ganeskhind, Pune-16  
Syllabus for B.B.A (CA) (CBCS 2019 Pattern)  
Semester II - Subject Code: - 22-BBACA125  
Subject Name -: Web Technologies**

Total Contact Hours: -48

Total Credits: - 3

**Course Objective:**

1. To understand the concepts of internet programming.
2. To understand how to develop web based applications using JavaScript.

**Course Outcome:**

CO1: Students will be able to understand the basic concept internet programming using HTML

CO2: Students will be able to use CSS in HTML code

CO3: Students will be able to learn basics of Java Script and apply it in designing small web applications.

Unit No	Topic	No. of Lecture
1	<b>1. Introduction</b> 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	5
2	<b>2. Web Design</b> 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	<b>3. HTML</b> 3.1 Introduction to HTML 3.2 Basic HTML Structure 3.3 Common HTML Tags 3.4 Physical and Logical HTML 3.5 Types of Images, client side and server-side Imagemapping 3.6 List, Table, Frames 3.7 Embedding Audio, Video <b>3.8 HTML form and form elements</b> 3.9 HTML Web Storage	12
4	<b>4. Cascading Style Sheets</b> 4.1 Need for CSS 4.2 Introduction to CSS 4.3 Basic syntax and structure 4.4 Using CSS- 4.4.1 background images, colors and properties, 4.4.2 manipulating texts, using fonts, borders andboxes, margins, padding lists, positioning using CSS	10

**Progressive Education Society's  
Modern College of Arts, Science and Commerce(Autonomous)  
Ganeskhind, Pune-16  
Syllabus for B.B.A (CA) (CBCS 2019 Pattern)  
Semester II - Subject Code: - 22-BBACA125  
Subject Name -: Web Technologies**

	4.5 Overview and features of CSS2 and CSS3	
<b>5</b>	<b>5. Java Script</b> 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 5.7Event handling in Java script	<b>12</b>
	<b>Total Lectures</b>	<b>48</b>

**Reference Books:**

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

**Reference websites:**

1. [www.w3schools.com](http://www.w3schools.com)
2. [www.tutorialspoint.com](http://www.tutorialspoint.com)

Subject Teacher

BOS Chairman

Vice Principal

**Progressive Education Society's**  
**Modern College of Arts, Science and Commerce(Autonomous)**  
**Ganeskhind, Pune-16**  
**Syllabus for B.B.A (CA) (CBCS 2019 Pattern)**  
**Semester II - Subject Code: - 22-BBACA127**  
**Subject Name -: Advance C**

Total Contact Hours: -30

Total Credits: - 2

**Pre requisite:** Basics of C, Array, Structure, Pointer.

**Credit Distribution:** - 1 credit for theory (15 Lectures) and 1 credit for Practical

**Objectives:**

1. To study advanced concepts of programming using the 'C' language.
2. To understand code organization with complex data types and structures.
3. To work with files.

**Course Outcomes:**

- CO1: Able to solve problem by analysing and converting logical thinking to computer Understandable format using C Programming.
- CO2: Able to design their own program to solve mathematical problems using C Programming

<b>Unit No.</b>	<b>Contents</b>	<b>Lectures</b>
1	<b>Union and Enumeration</b> 1.1 Union 1.1.2. Def, Syntax. 1.2 Working with union 1.3 Initializing union 1.4 Advantages of union 1.3 Structures versus union 1.5 Advantages of union Enumeration 1.6 Enum keyword 1.7 typedef keyword 1.8 Working with Enum	3

**Progressive Education Society's**  
**Modern College of Arts, Science and Commerce(Autonomous)**  
**Ganeskhind, Pune-16**  
**Syllabus for B.B.A (CA) (CBCS 2019 Pattern)**  
**Semester II - Subject Code: - 22-BBACA127**  
**Subject Name -: Advance C**

2	<p><b>File handling:</b></p> <p>2.1 File</p> <p>2.1.1 Def</p> <p>2.1.2 File Opening Modes</p> <p>2.1.3 Types of files - text and binary,</p> <p>2.2 Functions: fopen(), fclose(), fgetc(), fputc(), fgets(), fputs(), fscanf(), fprintf(), getw(), putw(), fread(), fwrite(), fseek(), ftell() etc</p> <p>2.3 File Management</p> <p>2.3.1 Opening/Closing a File</p> <p>2.3.2. Input/Output operations on Files</p> <p>2.3.3. Error Handling During I/O Operations</p> <p>2.3.4. Command Line Arguments</p> <p>2.4. Random Access File</p>	4
3	<p><b>Graphics programming</b></p> <p>3.1 Introduction of graphics</p> <p>3.2 Graphical functions</p> <p>3.3 Simple Programs</p> <p>3.4 Programs on Graphics program(Animations)</p> <p>3.5 Developing Mini Project.</p>	8

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 Teacher

BOS Chairman

Vice Principal

**Progressive Education Society's  
Modern College of Arts, Science and Commerce(Autonomous)  
Ganeskhind, Pune-16  
Syllabus for B.B.A (CA) (CBCS 2019 Pattern)  
Semester II - Subject Code: - 22-BBACA127  
Subject Name -: Advance C**