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Anekant Education Society's

Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati.

SYLLABUS STRUCTURE OF FYBBA (C.A)

Bachelor of Business Administration (Computer Application)

Syllabus (CBCS Pattern) under Academic Autonomy for the year 2022-2023

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Semester -I

Subject Code	Name of Subject	Credit
UBCA111	Logic in Computer Science	03
UBCA112	Data Structure using C	03
UBCA113	Relational Database Management System	03
UBCA114	Business Communication	03
UBCA115	Principles and Practices of Management and Organizational Behavior.	03
UBCA116	Computer Laboratory I[Based on UBCA112]	02
UBCA117	Computer Laboratory II [Based on UBCA113]	02
	Total	19

Semester –II

Subject Code	Name of Subject	Credit
UBCA121	Object Oriented Programming using C++	03
UBCA122	Web Technology (HTML5, CSS3, JavaScript, jQuery)	03
UBCA123	Software Engineering	03
UBCA124	Technical Report Writing	03
UBCA125	Digital Marketing	03
UBCA126	Computer Laboratory I [Based on UBCA121]	02
UBCA127	Computer Laboratory II[Based on UBCA122]	02
	Certificate Course Democracy and Governance	02
	Physical Education	02
	Total	23

SYLLABUS (CBCS) FOR F.Y.BBA (C.A.) (w. e. from June, 2022)

Academic Year 2022-2023

Class: F.Y.BBA (C.A.) (Semester - I)
Paper Code: UBCA111   Title of Paper: Logic in Computer Science
Credit: 3   No. of. Hours: 48

A) Learning Objectives:
1. To introduce role logics in computer science
2. To introduce the concepts of mathematical logic and its importance.
3. To understand syntax and semantics of propositional, predicate, temporal logic and modal logic
4. To discuss propositional, predicate, temporal and modal logic and their applications.

B) Learning Outcome:
Student will able to understand fundamental concepts in propositional, predicate, temporal logic and modal logic and resolution techniques. Also, students should able to apply the concept of program verification in real-world scenarios.

Unit 1: Introductory Concepts   (05Hr)
1.1 Introduction: What is Logic?
1.2 History of logic – Overview of logic in computer science
1.3 Definition Propositional Logic, Predicate Logic, Modal and Temporal logic
1.4 Program Verification

Unit 2: Propositional Logic   (10 Hr)
2.1 Declarative Sentence
2.2 Natural Deduction
2.3 Syntax -Well-formed formulas
2.4 Semantic-Interpretation
2.5 Meaning of logical connectives, Truth Tables
2.6 Soundness and Completeness
2.7 Normal form- Semantic Equivalence, Satisfy ability & Validity
2.8 Conjunctive Normal form &Validity

Unit 3:   Binary Decision Diagrams   (06 Hr)
3.1 Definition
3.2 Reduced and ordered Binary Decision Diagrams, Operators.

Unit 4: Predicate Logic   (14 Hr)
4.1 Terms and formulas
4.2 Logic programming
4.3 Free and bound variables
4.4 Substitution
4.5 Proof theory of predicate logic
4.6 Natural deduction
4.7 Quantifier equivalence
4.8 Syntax and semantic

Unit 5: Temporal logic   (08 Hr)
5.1 Syntax and Semantics
5.2 Models of Time
5.3 Linear time Temporal Logic
5.4 Deduction System of Temporal Logic

Unit 6: Modal Logic   **(05 Hr)**

6.1 Need for Modal Logic
6.2 Syntax and Semantics

Reference Books:

1. Arindhama Singh, Logics for Computer Science, Prentice Hall India, 2004

2. Modechai Ben-Ari, Mathematical Logic for Computer Science, Springer, 3/e, 2012.

3. Michael Huth, Mark Ryan, Logic in Computer Science: Modeling and Reasoning

about Systems, Cambridge University Press, 2005

Website Reference Link:

1) Logic for Computer Science -https://nptel.ac.in/courses/106102013
2) Logic for Computer Science -
     https://www.iitgoa.ac.in/~sreejithav/18July/logic/cs228.html

Class: F.Y.BBA (C.A.) (Semester-I)
Paper Code: - UBCA112   Title of Paper: Data Structure using C
Credit: 3   No. of. Hours: 48

A) Learning Objectives:
1. To understand concepts of C programming and data structures
2. To understand concepts about searching and sorting techniques
3. To understand basic concepts about stacks, queues, lists, trees and graphs

B) Learning Outcomes:
Student will able to-

1. Analyze algorithms and algorithm correctness, searching and sorting techniques.
2. Describe linked list, stack, queue tree and graph operation
3. Understand and apply c programming concepts.
4. Students will be able to develop logics which will help them to create programs, applications in C.
5. Understand basic data structures such as arrays, linked lists, stacks and queues.
6. Have knowledge of tree and graphs concepts.
7. Be capable to identity the appropriate data structure for given problem.

Topics/Contents	No. of Hours
Unit 1 Introduction to C Language	**(03Hr)**
1.1 History	
1.2 Basic Structure of C Programming	
1.3 Language Fundamentals	
1.3.1 Character Set, Tokens	
1.3.2 Keyword & Identifiers	
1.3.3 Variables & Data Types	
1.4 Operators	
1.4.1 Types of Operators	
1.4.2 Precedence & Associativity	
Unit 2 Managing I/O Operations	**(02Hr)**
2.1 Console based I/O & related Built-in I/O Functions	
2.1.1 printf(), scanf()	
2.1.2 getch(), getchar()	
2.2 Formatted Input & Formatted Output	
Unit 3 Decision Making and Looping	**(05 Hr)**
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 Structure	
3.3.1 While Loop	
3.3.2 Do-while Loop	
3.3.3 For Loop	

       3.3.4 Nested For Loop
    3.4 Loop Control Statements
       3.4.1 break
       3.4.2 continue
       3.4.3 goto
       3.4.4 exit

Unit 4   Functions   **(04 Hr)**

    4.1 Introduction
       4.1.1 Purpose of Functions
       4.1.2 Function Definition
       4.1.3 Function Declaration
       4.1.4 Function Call
    4.2 Types of Functions
    4.3 Call by value & Call by reference

Unit 5:   Introduction to Data Structure   **(08 Hr)**

    5.1 Pointers & Dynamic Memory Allocation

    5.2 Fundamentals of Data Structure
       5.1.1 Algorithm Analysis (Space Complexity, TimeComplexity,
            Asymptotic Notation)
    5.3 Types of data structure
    5.4 Abstract Data Types (ADT)
    5.5 Introduction to Array & Structure
    5.6 Types of Array & Representation of Array

    5.7 Polynomial Representation of Arrays
     5.7.1   Addition of Two Polynomial
     5.7.2   Evaluation of Polynomial
    5.8 Operations of Data Structure
       5.8.1 Traversing
       5.8.2 Searching (Linear and Binary Search)
       5.8.3 Sorting (Bubble, Insertion, Selection, Heap, Quick and Merge sort)
    5.9 Analysis of All Sorting techniques
    5.10   Self-Referential Structure

Unit 6   Linked List   **(05 Hr)**

    6.1 Definition of Linked List
    6.2 Dynamic Memory Management
    6.3 Representation of Linked List
    6.4 Types of Linked List
    6.5 Operations on Linked List

Unit 7   Stack   **(05 Hr)**

    7.1 Introduction and Definition
    7.2 Representation of Stacks
    7.3 Primitive Operations on Stacks
    7.4 Applications of Stacks
    7.5 Representation of Arithmetic Expressions
       7.5.1 Infix
       7.5.2 Postfix
       7.5.3 Prefix
    7.6 Conversion of Expressions
       7.6.1 Infix to Prefix
       7.6.2 Infix to Postfix

Unit 8   **Queue**   **(05 Hr)**

8.1 Introduction and Definition
8.2 Representation of Queues
8.3 Primitive Operation on Queues
8.4 Applications of Queues
8.5 Types of Queue

       8.1.1   De queue
       8.1.2   Circular Queue
       8.1.3   Priority Queue

Unit 9   **Trees**   **(06 Hr)**

9.1 Introduction and Definition
9.2 Terminology
9.3 Static and Dynamic Representation
9.4 Types of Trees
9.5 Binary Search Tree (BST)
9.6 Tree Traversal

       9.6.1   In Order
       9.6.2   Pre Order
       9.6.3   Post Order

Unit 10   **Graphs**   **(05 Hr)**

10.1 Definition of Graph
10.2 Basic Concepts of Graph
10.3 Representation of Graph

       10.3.1   Adjacency Matrix
       10.3.2   Adjacency List
   10.4   In Degree Out Degree of Graph
   10.5   Graph Traversal
       10.5.1 DFS
       10.5.2 BFS
   10.6   Spanning Tree

Reference Books:

1. C Programming Absolute Beginner's Guide by Greg Perry and Dean Miller

2. Let Us C by Yashavant -P-Kanetkar

3. Data Structure Using C - Radhakrishanan and Shrivastav

4. Practical Approach to Data Structures by Hanumanthappa

Website Reference Link:

1. Data Structures By D Samantha.pdf : https://docs.google.com/file/d/0B-RaWa38E8KsdHd6QV8zRmw1NlE/view
2. Download Data Structure eBooks for Free : https://www.pdfdrive.com/data-structure-books.html
3. Data Structure and Algorithms : https://www.tutorialspoint.com/data_structures
4. Learn Data Structures and Algorithms : https://www.programiz.com/dsa

SYLLABUS (CBCS) FOR F.Y.BBA (C.A.) (w. e. from June, 2022)

Academic Year 2022-2023

Class: F.Y.BBA (C.A.) (Semester - I)
Paper Code: UBCA113   Title of Paper: Relational Database Management System
Credit: 3   No. of. Hours: 48

A) Learning Objectives:
1. The objective of this course is to study the basics of DBMS and to learn SQL PL/SQL.
2. Enables students to understand relational database concepts and transaction management conceptsin database system.

B)Learning outcomes:

Student should be able to:

1. Create conceptual and logical database designs for a business information problem.
2. Analyze the core terms, concepts, and tools of relational database management system.

Topics/Contents	No. of Hours
Unit 1: Database Management System	**(05Hr)**

1.1 Introduction

1.2 Need of DBMS, Applications of DBMS, Advantages and

     Disadvantages of DBMS

1.3 Users, Views, Schema,

1.4 Structure of DBMS

1.5 Data Models

       1.5.1 Object Based Logical Model-Object Oriented Data Model,

           Entity Relationship Data Model

       1.5.2 Relational Model

1.6 ER diagrams, extended features of ERD.

Unit 2: Relational Database Model and Design	(07 Hr)

2.1 Terms-Relation, Tuple, Attribute, Cardinality, Degree of

     Relationship set, Domain

2.2 Keys -Super Key, Candidate Key, Primary Key, ForeignKey,

     Constraints

2.3 Anomalies of un-normalized database

2.4 Normalization

2.5 Normal Form -1NF, 2NF, 3NF, BCNF)

Unit 3: SQL (Structured Query Language)	**(12 Hr)**

3.1 Introduction

3.2 Basic Structure

3.3 DDL Commands

3.4 DML Commands

3.5 Simple Queries

3.6 Nested Queries

3.7 Aggregate Functions

Unit 4: Transaction processing and Concurrency **(12 Hr)**

4.1 Concept of transaction processing, ACID properties, States of
Transaction

4.2 Concurrency Execution

4.3 Serializability and Recoverability

4.4 Locking Based Protocol-Locks, Granting of Locks and 2PL

4.5 Timestamp based protocols-Timestamp, timestamp ordering
Protocol, Thomas's Write Rule.

4.6 Deadlocks handling –Detection, Prevention and Recovery.

Unit 5: Recovery System **(12 Hr)**

5.1 Failure Classification

    5.1.1 Transaction Failure

    5.1.2 System Crash

    5.1.3 Disk Failure

5.2 Storage Structures

    5.2.1 Storage Types

    5.2.2 Data Access

5.3 Recovery & Atomicity

    5.3.1 Log based Recovery

    5.3.2 Deferred Database Modification

    5.3.3 Immediate Database Modification

    5.3.4 Checkpoints

5.4 Recovery with Concurrent Transaction

    5.4.1 Transaction Rollback

    5.4.2 Restart Recovery

5.5 Remote Backup System

Reference Books:

1. Database System Concepts by Henry Korth and A. Silberschatz
2. Database Management Systems, McGraw – Hill. G. K. Gupta
3. Introduction to Database Management, Wiley, by Mark L. Gillenson, Paulraj Ponniah
4. SQL,PL/SQL the Programming Language Oracle:-Ivan Bayross, BPBPublication.
5. SQL & Pl SQL for Oracle 11g Black Book 2011 Edition by P. S. Deshpande, Dreamtech

Website Reference Link:

1. Learn DBMS - Database Management System Tutorial : https://www.tutorialspoint.com/dbms/index.htm
2. DBMS Tutorial | Database Management System -

   javatpoint https://www.javatpoint.com/dbms-tutorial

3. PostgreSQL: The world's most advanced open source database : https://www.postgresql.org/

4. PostgreSQL Tutorial - Learn PostgreSQL frwebom Scratch : https://www.postgresqltutorial.com/

Academic Year 2022-2023

Class: F.Y.BBA (C.A.) (Semester - I)
Paper Code: UBCA114   Title of Paper: Business Communication
Credit: 3   No. of. Hours: 48

A) Learning Objectives:
1. To understand the concept, process and importance of communication.
2. To develop an integrative approach where reading, writing, presentation skills are used to get here enhance the student's ability to communicate and write effectively.
3. To create awareness among students about methods and media of communication.
4. To make students familiar with information technology and improve job seeking skills.

B) Learning Outcomes:
1) Student should be able to communicate effectively in real life situation.
2) To distinguish among various levels of organizational communication and communication barriers while developing and understanding of Communication as a process in an organization.
3) Demonstrate the use of basic and advanced business writing skills.
4) Develop interpersonal communications skills that are required for social and business interaction.
5) Employ proper public speaking techniques.
6) To demonstrate verbal and non-verbal communication ability through presentations.

Topics/Contents	No. of Hours

Unit 1 : Introduction to Communication   **(06Hr)**
1.1   Role of Communication in Business
1.2   Objectives of Communication
1.3   Process of Communication
1.4   Principles of Communication
1.5   Barriers to Communication
1.6   Overcoming Barriers

Unit 2 : Media of Communication   **(08 Hr)**

2.1 Written Communication- Advantages & Limitations
2.2 Oral Communication- Principles of effective oral communication - Techniques of effective speech
2.3 Face to Face Communication
2.4 Non-Verbal Communication - Body Language (Positive & Negative Gestures)handshakes, gazes, smiles, hand movements
2.5 Visual Communication
2.6 Audio Visual Communication Skills

Unit 3 : Oral Communication   **(12 Hr)**
3.1 Listening, Importance of listening, Guidelines of Effective Listening.

3.2 Group Communication/Discussion-Activity.

3.3 Speeches- Characteristics of Good Speech, Model Speech

3.4 Presentation- Elements of Presentation, Designing a Presentation, Practicing Delivery of Presentation, Media Management,
3.5   Press Conference, Seminars, Workshop, Conferences, Business Etiquettes.
3.6 Dialogue Skills- Need for Dialogue and Conversation Skill, Good Manners

and Etiquettes

3.7 Interview- Mock Interview

Unit 4 : Written Communication   (12 Hr)

4.1 Layout of Business Letter, Enquiry letter, Order Letter, Complaintletter, Sales Letter, Office Memo

4.2 Job Application Letter- Appointment, Promotion, Resignationletter

4.3 Report Writing- Introduction, Reports by Individuals, Reports by Committees.

4.4 Agenda and Minutes of Meeting

4.5 Notices- Public Notices, Tender Notices

4.6 Copy Writing for Advertisement – Introduction, Structure ofan Advertisement Email Etiquette

Unit 5 : Information Technology for Communication   (10 Hr)

5.1 Introduction

5.2 Telex, Telegram, Fax, VoiceMail, Teleconferencing, Video Conferencing, Internet and Social Media Sites, E-communication at workplace.

5.3 Telephone Skills, Basics of Telephone Communication, Handle calls- telephone manners, Teleconference handling, Handling Tele interviews for Call Centre's.

Reference Books:

1. Business Communication (Principles, Methods and Techniques) Nirmal Singh Deep & Deep Publications Pvt. Ltd, New Delhi.

2. Essentials of Business Communication Rajendra Pal& J.S.Korlhalli Sultan Chand & Sons, New Delhi.

3. MediaandCommunicationManagement– C.S.RayduHimalayaPublishingHouse,Mumbai.

4. ProfessionalCommunication-ArunaKoneru-TataMcGraw-HillPublishingCo.Ltd,NewDelhi.

5. Creating a Successful CV–Siman Howard–Dorling Kindersley.

6. Business Communication–Dr.Anjali Kalkar, Ashapak G. Nadaf, Tech-Max Publication, Pune

7. Effective Documentation and Presentation-Urmila Rai & S.M.Rai–Himalaya Publishing House, Mumbai.

8. Principles Practices of Business Communication– Aspi Doctor & Rhoda Doctor– Sheth Publishers Pvt. Ltd

Website Reference Link:

1) Business Communication Tutorial: https://www.tutorialspoint.com/business_communication_strategies/index.htm

2) Communication Basics:https://edu.gcfglobal.org/en/business-communication/

Class: F.Y.BBA (C.A.) (Semester - I)

Paper Code: UBCA115   Title of Paper: Principles and Practices of
                                      Management and Organizational Behaviour

Credit: 3   No. of. Hours: 48

A) Learning Objectives:

1. Improve students understanding of Management & human behavior in organization and the ability to lead people to achieve more effectively toward increased organizational performance.
2. Students should understand the Impart that individual, group and structures have on theirbehavior within the Organization.
3. Students should identify the required behavioral model in the Organization.

B) Learning Outcomes:
Student will able to-
1) Describe various aspects of management.
2) Analyze the interactions between multiple aspects of management.
3) Justify the role of leadership qualities.
4) Analyze the role of planning and decision making.
5) Understand the nature of time management and time management strategies.
6) Identify and apply new ideas, methods and ways of thinking.
7) Evaluate and examine their own behavior and that of others in an organizational setting.
8) Understand and analyze the impact of conflict and stress on the work place.

Topics/Contents	No. of Hours

Unit 1: Management   **(08Hr)**
1.1 Meaning and Definition
1.2 Need, Scope and Process of Management
1.3 Managerial Levels/Hierarchy
1.4 Managerial Functions –Planning, Organizing, Staffing, Directing, Controlling
1.5 Types of Managers and it's Skill – Functional, Specialize, Generalize
1.6 Leadership – Meaning, Qualities of Effective Leadership and Functions of Leader.

Unit 2: Decision Making   **(05 Hr)**
2.1 Introduction
2.2 Decision Making Environment – Decision Making under Certainty, under Uncertainty under Risk
2.3 Types of Decision
2.4 Decision making Process and Tools

Unit 3: Organization and Organizational Behaviour   **(07 Hr)**
3.1 Definition and Need for Organization
3.2 Introduction to Organizational Behaviour
3.3 Goals of Organizational Behaviour
3.4 Fundamental Concepts of Organizational Behaviour

Unit 4: Motivation   **(07 Hr)**
4.1 Concept of Motivation, Benefits to Organization and Manager
4.2 Motivation Process
4.3 Maslow's Need Hierarchy Theory
4.4 McGregor's Theory 'X' and Theory 'Y'
4.5 Herzberg's Two Factor Theory of Motivation

Unit 5: Group Dynamics and Team Building   **(07 Hr)**
5.1 Concept of Group, Effect & Characteristics of Group
5.2 Types of Groups
5.3 Five Stage Model of Group Development
5.4 Concept of Team, Nature and Benefits from Team
5.5 Creating Effective Teams

Unit 6: Time Management   **(05 Hr)**
6.1 What is Time management
6.2 Time Management Strategies
   - Setting Goals, Organize, Plan ahead, Maximise Time, Prioritize, Eliminate
     Distractions,

Unit 7: Stress Management and Conflict Management   **(09 Hr)**
7.1 Work Stress - Meaning of Stress, Stressors
7.2 Sources of Stress- Individual Level, Organizational Level
7.3 Types of Stress
7.4 Type A and Type B Assessment of Personality
7.5 Effect of Stress – Physiological Effect, Psychological Effect, Behavioural Impact
7.6 Stress Management – Individual Strategies, Organizational Strategies
7.7 Concept of Conflict
7.8 Five Stage Process of Conflict
7.9 Types of Conflict- Inter-Personal, Intra-Personal, Inter-Group Organizational, Johari
     Window
7.10 Effects of Conflict
7.11 Conflict Management Strategies.

Reference Books:

1. Principles and Practices of Management-Shejwalkar

2. Essential of management-7theditionKoontzH&WeitrichHTMH

3. Management Today Principles And Practices-Burton & Thakur

4. Mgmt. Principles and Functions –Ivancevich & Gibson, Donnelly

5. Organizational behavior Keith Davis

6. Organizational behavior Fred Luthans TMH 10th edition

Website Reference Link:

1. Management Principles Tutorial –
   https://www.tutorialspoint.com/management_principles/index.htm

2. Organizational Behavior –
   https://www.tutorialspoint.com/organizational_behavior/organizational_behavior
   _ quick_guide.htm

SYLLABUS (CBCS) FOR F.Y.BBA (C.A.) (w. e. from June, 2022)
Academic Year 2022-2023

Class: F.Y.BBA (C.A.) (Semester - I)
Paper Code: UBCA116   Title of Paper: Computer Laboratory I [Based on UBCA112]
Credit: 2   No. of. Hours: 30

A) Learning Objectives:

1. To study various data types, arrays, strings and functions in C.

2. To learn briefly the concept of Decision Making and looping.

3. To get familiarized to searching and sorting techniques

4. To implement linear and nonlinear data structures

B)Learning outcomes:

Student should be able to:

1. Explain use of appropriate data types, control statements.
2. Write programs using Array, String and function.
3. Apply the Searching and sorting algorithms for problem solving
4. Write function to implement linear and nonlinear data structure
5. Use of appropriate data types, control statements.
6. Student will be able to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.
7. Students will be able to use linear and non-linear data structures like stacks, queues, linked list etc.

Topics/Contents

Programs of C and Data Structure

Assignments on operators and Evaluation of Expressions

Assignments on Decision making Statements

Assignments on Looping Statements

Assignments on Arrays.

Assignments on Strings.

Assignments on Functions

Assignments on Pointers

Assignments on Structure and Union

Assignments on Searching, Sorting

Assignments on Linked List-

- Singly Linked List-creation ,insertion, deletion , traversal

- Doubly Linked List-creation ,insertion, deletion , traversal

Assignments on Stack-Static implementation, Dynamic implementation,

Assignments on Queue- Static implementation, Dynamic implementation

SYLLABUS (CBCS) FOR F.Y.BBA (C.A.) (w. e. from June, 2022) Academic Year 2022-2023

Class: F.Y.BBA (C.A.) (Semester - I)
Paper Code: UBCA117   Title of Paper: Computer Laboratory II [Based on UBCA113]
Credit: 2   No. of. Hours: 30

A) Learning Objectives:
1. To understand the database concepts.

2. To learn DBMS and solve problems.

B) Learning outcomes:

Student should be able to:

1. Able to write SQL commands to create tables using Normalization concepts and indexes, insert/update/delete data,and query data in a relational DBMS.
2. Able to execute simple and nested queries
3. Able to write procedures and functions.
4. Students are able to use trigger and cursor.
5. Understand and able to implement concept of transactions.
6. Use advanced database Programming concepts.
7. Students will able to create report/documentation for real life projects using SQL queries.

Topics/Contents

PLSQL:

Introduction to PLSQL

PL/SQL: Datatypes, Language structure

Controlling the program flow, conditional statements, loops

Stored Procedures

Stored Functions

Handling Errors and Exceptions

Cursors

Triggers

Assignments on DDL Command

Assignments on Table creation with constraint

Assignments on DML command. (Insert ,Update and Delete)

Assignments on Simple Queries and Nested Queries

Assignments on Stored Procedures

Assignments on Stored Functions

Assignments on Cursors

Assignments on Triggers

SYLLABUS (CBCS) FOR F.Y.BBA (C.A.) (w. e. from June, 2022)
Academic Year 2022-2023

Class: F.Y.BBA (C.A.) (Semester - II)
Paper Code: UBCA121

Paper: - I   Title of Paper: Object Oriented Programming using C++

Credit: 3   No. of. Hours: 48

A) Learning Objectives:

1. Acquire an understanding of basic object-oriented concepts and the issues involved in effective class design.
2. Enables student to write C++ programs that use: object-oriented concepts such as Information hiding, constructors, destructors, inheritance.

B) Learning Outcome:
Student will able to-

1. To understand how C++ improves C with object-oriented features.
2. To learn design C++ classes for code reuse.
3. To understand the concept of data abstraction and encapsulation.
4. To learn design and implement generic classes with C++ templates.
5. To use exception handling in C++ programs.
6. Understand dynamic memory management techniques using pointers, constructors, destructors, etc
7. Describe the concept of function overloading, operator overloading, virtual functions and polymorphism.
8. Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming.
9. Demonstrate the use of various OOPs concepts with the help of programs.

Topics/Contents	No. of Hours
Unit 1: Introduction to C++	**(02Hr)**
1.1 Basic Concepts of OOP, Benefits, Applications of OOP	
1.2 A Simple C++ Program	
1.3 Structure of C++ Program	
1.4 Creating a Source File, Compiling and Linking	
Unit 2: Tokens, Expressions and Control structures	**(03 Hr)**
2.1 Introduction	
2.2 Tokens, Keywords, Identifiers and Constants	
2.3 Data types-Basic, User Defined and Derived	
2.4 Symbolic Constant	
2.5 Type Compatibility	
2.6 Variables-Declaration and Dynamic Initialization	
2.7 Reference Variable	
2.8 Operators in C++	
2.8.1 Scope Resolution Operator	
2.8.2 Member Referencing Operators	

Unit 7: Managing console I/O operations   **(03 Hr)**
   7.1 Introduction
   7.2 C++ streams and C++ stream classes
   7.3 Unformatted I/O operations
   7.4 Formatted console I/O operations
   7.5 Managing output with manipulators
Unit 8: Working with Files   **(05 Hr)**
   8.1 Classes for File Stream operations
   8.2 File operations-Opening, Closing and updating
   8.3 Error handling during File operations
   8.4 Command Line arguments
Unit 9: Templates   **(03 Hr)**
   9.1 Introduction
   9.2 Class Templates
   9.3 Function Templates
   9.4 Exception Handling (Introduction)

Reference Books:
1. Object oriented programming with C++ -by E Balagurusamy
2. Object Oriented Programming in C++ by Dr. G. T. Thampi, Dr. S. S. Mantha, Dream Tech.
3. Object Oriented Programming with C++ by Robert Lafore

Website Reference Link:

1. W3Schools CPP Tutorial :https://www.w3schools.com/cpp/cpp_oop.asp
2. CPP Tutorials Point: https://www.tutorialspoint.com/cplusplus/cpp_object_oriented.htm
3. CPP geeks for geeks : https://www.geeksforgeeks.org/object-oriented-programming- in-cpp/
4. CPP Tutorials Point : https://www.javatpoint.com/cpp-oops-concepts

Class: F.Y.BBA (C.A.) (Semester - II)
Paper Code: UBCA122
Credit: 3   Title of Paper: Web Technology (HTML5, CSS3, JavaScript, jQuery)

No. of. Hours: 48

A] Learning Objectives:
1. To impart the design, development and implementation of Dynamic Web Pages.
2. To develop programs for Web using Scripting Languages.
3. To Design and implement dynamic websites with good sense of designing and latest technical aspects.

B] Learning Outcome:
1. Analyze the web page and identify its elements and attributes.
2. Create web pages using HTML5 and CSS3.
3. Build dynamic webpage by the use of JavaScript and jQuery.
4. Perform validation using JavaScript.
5. Understand internet basics, internet protocols and concepts of effective web design.

Topics/Contents	No. of Hours
Unit 1: Introduction to Web Development	**(04 Hr)**

1.1. What is web app
1.2. Client server Vs Web Server
1.3. Front End & Back end.
1.4. Internet-Basic, Internet Protocols(HTTP,FTP,IP)
1.5. World Wide Web(WWW)
1.6. HTTP Request Message, HTTP Response Message

Unit 2: Introduction to HTML5	**(12 Hr)**

2.1 Introduction to HTML5, Features of HTML5, Introduction to Web 2.0
   and Web3.0
2.2 History And Major Actors
   2.2.1 A Little Retrospective
   2.2.2 What Is TheW3C?
   2.2.3 What Is The WHATWG?
2.3 Getting Started With HTML5
   2.3.1 Feature Detection
   2.3.2 Support For Legacy Browsers
2.4 Structure of a Web Page
   2.4.1 HTML5 DOCTYPE
   2.4.2 Page Encoding
   2.4.3 New And Updated Elements
   2.4.4 New Attributes
   2.4.5 Deprecated Elements And Attributes
2.5 Audio and Video
   2.5.1 The State of Web Audio And Video Based On Plug-in
   2.5.2 Attributes And Methods
   2.5.3 Understanding Audio/Video Events
2.6 HTML5 Canvas
   2.6.1 Overview of Graphics In The Browser
   2.6.2 Canvas Vs. SVG
   2.6.3 Using A Canvas

2.7 Forms
2.8 Working With Paths
  2.8.1 Drawing Straight Lines
  2.8.2 Drawing Circles Or Arcs
  2.8.3 Drawing Text
  2.8.4 Drawing Images
2.9 Understanding Transforms
  2.9.1 Translation
  2.9.2 Rotation
  2.9.3 Scaling2.

Unit 3: CSS 3   **(10 Hr)**
3.1 Introducing CSS3
  3.1.1 What isCSS3?
  3.1.2 The History of CSS
3.2 Selectors and Pseudo Classes
  3.2.1 Attribute Selectors
  3.2.2 The Target Pseudo-Class
  3.2.3 UI Element States Pseudo-Classes
3.3 Fonts and Text Effects
  3.3.1 Fonts on the Web
  3.3.1 Font Services
  3.3.2 The @font-face Rule
3.4 Colours, Gradients, Background Images, and Masks
  3.4.1 Colour
  3.4.2 The Opacity Property
  3.4.3 Backgrounds
3.5 Selectors and Pseudo Classes
  3.5.1 Attribute Selectors
  3.5.2 The Target Pseudo-Class
  3.5.3 UI Element States Pseudo-Classes
3.6 Fonts and Text Effects
  3.6.1 Fonts on the Web
  3.6.2 Font Services
  3.6.3 The @font-face Rule
3.7 Colors, Gradients, Background Images, and Masks
  3.7.1 Color
  3.7.2 The Opacity Property
  3.7.3 Backgrounds
3.8 Transitions, Transforms and Animations
  3.8.1 Transitions and Transforms
3.9 Embedding Media
  3.9.1 Video Formats
  3.9.2 Styling Video

Unit 4: JavaScript   **(12 Hr)**
4.1Introduction to JavaScript, Types of Scripts
4.2 Control and looping structure
4.3 Various Operators in JavaScript
4.4 Array its Types
4.5 Event Handling
4.6 Math, Date and String objects
4.7 DOM Objects
4.8 Form Validation
4.9 Dynamic effect using JavaScript

Unit 5: JQuery   **(10 Hr)**
5.1 Introduction to jQuery

Reference Books:
1. JavaScript The Complete Reference 3rd Edition Thomas A. Powell, Fritz Schneider McGraw Hill Professional,
2. HTML 5 Black Book (Covers CSS3, JavaScript, XML, XHTML, AJAX, PHP, jQuery)2Ed
3. JavaScript The Complete Reference 3rd Edition (Paperback, Powell Thomas)
4. Learning jQuery - Fourth Edition Jonathan Chaffer
5. HTML 5 Black Book (Covers CSS3, JavaScript, XML, XHTML, AJAX, PHP, jQuery)
6. Learning jQuery - Jonathan Chaffer, Karl Swedberg
7. HTML5 and CSS3 By Elizabeth Castro, Bruce Hyslop

Website Reference Link:
1) W3Schools HTML Tutorial: https://www.w3schools.com/html/

2) CSS Tutorial :https://www.tutorialspoint.com/css/index.htm

3) Learn Bootstrap Tutorial - JavaTpoint : https://www.javatpoint.com/bootstrap-tutorial

4) JavaScript Tutorial :https://www.w3schools.com/js/

5) The Modern JavaScript Tutorial: https://javascript.info/

SYLLABUS (CBCS) FOR F.Y.BBA (C.A.) (w. e. from June, 2022)

Academic Year 2022-2023

Class: F.Y.BBA (C.A.) (Semester - II)
Paper Code: UBCA123
Credit: 3   Title of Paper: Software Engineering

No. of. Hours: 48

A) Learning Objectives:
1. This course enables students to understand software and Software Process.
2. To understand the importance, limitations and challenges of processes involved in software development
3. To gain knowledge of various software models.
4. To learn about software requirements analysis and specification
5. To gain knowledge of various software design activities
6. To learn software testing and maintenance

B) Learning outcomes:

Student should be able to:

1. Apply the software engineering lifecycle by demonstrating competence in communication, planning, analysis, design and deployment.
2. Understand the software engineering concepts.
3. Learn and differentiate software development methodologies.
4. Identify, analysis and design real life problem.
5. Demonstrate to use the techniques and tools necessary for engineering practice

Topics/Contents	No. of Hours
Unit 1: Introduction to Software Engineering	**(06 Hr)**

1.1 Definition of Software

1.2 Characteristics of Software

1.3 Definition of Software Engineering

1.4 Need for Software Engineering

1.5 A Generic view of process-

  1.5.1 Software engineering layered technology

  1.5.2 A process Framework

  1.5.3 Capability maturity model integration

  1.5.4 process technology

  1.5.5 Product and Process

Unit 2: Software Models **(08 Hr)**

2.1 Prescriptive Process Models

2.2 Waterfall Model

2.3 Incremental Process Models

    2.3.1 Incremental Model

    2 .3.2 RAD Model

2.4 Evolutionary Process Models

    2.4.1 Prototyping Model

    2.4.2 Spiral Model

2.5 An Agile view of Process

  2.5.1 What is Agility?

  2.5.2 Features of Agile Process Model

  2.5.3 Extreme Programming

  2.5.4 Scrum Model

  2.5.5 Adaptive Software Development

Unit 3: Requirement Engineering **(06** Hr)

3.1 Introduction
3.2 Requirement Elicitation
3.3 Requirement Elaboration
3.4 Requirement Gathering
3.5 Feasibility study
3.6 Fact Finding Techniques
3.7 SRS Format 5

Unit 4: Analysis and Design Tools **(10 Hr)**

4.1 Decision Tree and Decision Table

4.2 Data Flow Diagrams (DFD) (Up to 2nd level)

4.3 Data Dictionary

4.4 Elements of DD

4.5 Advantages and Disadvantages of DD

4.6 Input and Output Design

4.7 Structured Design Concepts

4.8 Structure Chart

4.9 Coupling and Cohesion

4.10 Compulsory Case Studies on above topics

Unit 5: Software Testing and Maintenance (08 Hr)

5.1 Definition

5.2 Software Testing Process

5.3 Unit Testing

5.4 Integration Testing

5.5 System Testing

5.6 Maintenance Definition and Types

Unit 6: Use-Case Driven Object-Oriented Analysis (10 Hr)

6.1. Introduction to OOPS Concepts

6.1.1. Class and object

6.1.2. Abstraction and encapsulation

6.1.3. Method and messages

6.1.4. Interface, Inheritance and polymorphism

6.1.5. Structural Diagram-Class Diagram and Object diagram

6.1.6. Associations and links

6.1.7. Aggregation, Composition and Generalization

6.1.8. Inheritance, Sub Types and IS-A hierarchy

6.2. Behavioral Diagram

6.2.1. Use case Diagram

6.2.1.1 Identify Actors

6.2.1.2 Identify Use cases: describing how the user will use the system

6.2.1.3 Develop Use-Case Model

6.2.1.4 Description of Use case Diagram.

6.2.2 Activity Diagram

6.2.3 Sequence diagram

6.2.4 Collaboration Diagram.

6.2.5 Component Diagram

6.2.6 Deployment Diagram

6.2.7 State Transition Diagram Case studies should be

covered on the above topic

Reference Books:

1. Software Engineering-Rogers. Pressman.
2. SADSE (System Analysis Design)-Prof. Khalkarand Prof. Parthasarathy.

Website Reference Link:

1. Software Engineering Tutorial for Beginners: https://www.guru99.com/software-engineering-tutorial.html
2. Software Engineering Tutorial: https://www.javatpoint.com/software-engineering- tutorial
3. Software Engineering Tutorial: https://www.tutorialspoint.com/software_engineering/index.htm

Academic Year 2022-2023

Class: F.Y.BBA (C.A.) (Semester - II)
Paper Code: UBCA124   Title of Paper: Technical Report Writing
Credit: 3   No. of. Hours: 48

A) Learning Objectives:

1. Write clearly and in the correct style for your readers.
2. Use correct language and grammar.
3. Use layout, typography and illustrations to help get your message across.
4. Check & edit your own drafts

B) Learning Outcomes:

Student should be able to:

1. Produce a documentation plan, including estimates and schedules
2. Design and structure a document by analyzing the readership and selecting the right information.
3. Understand the basics of technical communication.
4. Use correct language and grammar.

Topics/Contents	No. of Hours
Unit 1: Introduction to Technical Communication	**(03 Hr)**

1.1 Basics of Technical Communication
1.2 Components
1.3 Process

Unit 2: Elements of Style	**(06 Hr)**

2.1 Definition of Style
2.2 Choice of Words and Phrases
2.3 Sentence and Paragraphs Constructions and Length

Unit 3: Business and Technical Report	**(10 Hr)**

3.1 Characteristic
3.2 Importance
3.3 Types of Reports
   3.3.1 Oral Report
   3.3.2 Written Report-
      3.3.2.1 Informal Report
      3.3.2.2 Formal Report - Informational, Interpretive, Routine Report
3.4 Routine Report
   3.4.1 Progress Report
   3.4.2 Laboratory Report
   3.4.3 Inspection report
   3.4.4 Inventory Report
   3.4.5 Annual Confidential Report on Employee

(10 Hr)

Unit 4: Planning and Preparation

4.1 Preparatory Steps
4.2 Sources of Data
   4.2.1 Internal Records
   4.2.2 Library
   4.2.3 Internet
4.3 Methods of Data Collection
   4.3.1 Personal Observation
   4.3.2 Telephone Interview
   4.3.3 Personal Interview
   4.3.4 Questionnaires
4.4 Mail Questionnaires

Unit 5: Structure and Layout   **(08 Hr)**

5.1 Element of Structure
   5.1.1 Front Matter
   5.1.2 Main Body
   5.1.3 Back Matter

Unit 6: Use of Illustrations   **(06 Hr)**

6.1 Purpose
6.2 Characteristics of Good Illustrations
6.3 Types
   6.3.1 Tables
   6.3.2 Graphs
   6.3.3 Drawings

Unit 7: Report Writing   **(05 Hr)**

7.1 Rough Draft
7.2 Process of Writing
7.3 Order of Writing
7.4 The Final Draft
7.5 Check-List for Reports
7.6 Communication Core

Reference Books:

1. Business Correspondence and ReportWriting,4e-by R C Sharma Krishna Mohan Hand book of Technical)
2. Technical communication principles and practice-by Raman, Meenakshi and Sangeeta Sharma

Website Reference Link:

1. Report Writing -https://www.tutorialspoint.com/business_writing_skills/report_writing.htm
2. Introduction of Technical Report - https://www.geeksforgeeks.org/introduction-of-technical- report/

Class: F.Y.BBA (C.A.) (Semester - II)

Paper Code: UBCA125   Title of Paper: Digital Marketing

Credit: 3   No. of. Hours: 48

A] Learning Objectives:
1. To give knowledge about using digital marketing in and as business.
2. To make SWOT analysis, SEO optimization and use of various digital marketing tools.
3. To create a measurable and goal oriented website or marketing plan.

B] Learning Outcome:
Student should be able to
1. Explain why we get a huge list of webpages as a result of a search.
2. Examine why a certain webpage is ranked higher compared to others.
3. Organize how we can ethically boost the ranking of our webpage.
4. Describe some of the latest technologies used in Digital Marketing.

Unit No.	Topic	No. of Hours
Unit 1	**Introduction**	**(04Hr)**
	1.1 Understanding Internet Marketing	
	1.2 Search Engine Optimization	
	1.3 Search Engine Marketing	
	1.4 Email Marketing	
	1.5 Digital Display Marketing	
Unit 2	**Introduction to New Age Media (Digital) Marketing**	**(04Hr)**
	2.1 What is Digital Marketing	
	2.2 Digital vs. Real Marketing	
	2.3 Digital Marketing Channels	
	2.4 Types of Digital Marketing(Overview)-Internet Marketing ,Social Media Marketing, Mobile Marketing	
Unit 3	**Creating Initial Digital Marketing Plan**	**(04Hr)**
	3.1 Content management	
	3.2 SWOT analysis: Strengths, Weaknesses, Opportunities, andThreats	
	3.3 Target group analysis EXERCISE: Define a target group	
Unit 4	**Marketing using Web Sites**	**(04Hr)**
	4.1 Web design	
	4.2 Optimization of Web sites	
	4.3 MS Expression Web EXERCISE: Creating web sites, MSExpression	
Unit 5	**Search Engine Optimization**	**(04Hr)**
	5.1 SEO Optimization	
	5.2 Writing the SEO content EXERCISE: Writing the SEOContent	
Unit 6	**Customer Relationship Management**	**(04Hr)**
	6.1 Introduction to CRM	
	6.2 CRM platform	

6.3 CRM models EXERCISE: CRM strategy

Unit 7 Social Media Marketing (20 Hr)

7.1 Understanding Social Media Marketing

7.2 Social Networking (Facebook, Linkedin, Twitter, etc.)
SocialMedia (Blogging, Video Sharing - Youtube,
Photosharing – Instagram, Podcasts)

7.3 Web analytics - levels

7.4 Modes of Social Media Marketing

7.4.1 Creating a Facebook page Visual identity of a
Facebookpage , Types of publications, Facebook Ads ,
Creating Facebook Ads , Ads Visibility

7.4.2 Business opportunities and Instagram options
Optimizationof Instagram profiles , Integrating Instagram
with a Web Site and other social networks ,Keeping up
with posts

7.4.3 Business tools on LinkedIn Creating campaigns
onLinkedIn , Analyzing visitation on LinkedIn

7.4.4 Creating business accounts on YouTubeYouTube
,Advertising , YouTube Analytics

7.4.5 E-mail marketing E-mail marketing plan , E-
mailmarketing campaign analysis , Keeping up
with conversions

Digital Marketing tools: Google Ads, FaceBook Ads, Google
Analytic, Zapier, Google Keyword Planner EXERCISE: Social
Media Marketing plan. EXERCISE: Making a Facebook page
and Google Ads

Unit 8 Digital Marketing Budgeting (04 Hr)

8.1 Resource planning

8.2 Cost estimating

8.3 Cost budgeting

8.4 Cost control

Reference Books:

1) Digital Marketing for Dummies By Ryan Deiss and Russ Hennes berry
2) Advertising and Promotion: An Integrated Marketing Communications Perspective, George
Belch, San Diego University Michael Belch, San Diego University
3) Advertising Management :Rajeev Batra, John G. Myers, David A. Aaker
4) Belch: Advertising & Promotions (TMH)
5) The Social Media Bible: Tactics, Tools, &Strategies for Business Success by Lon Safko
6) Web Analytics2.0–Avinash Kaushik

Website Reference Link:

1) Digital Marketing Tutorial -
https://www.tutorialspoint.com/digital_marketing/index.htm
2) Digital Marketing Tutorial - https://www.javatpoint.com/digital-marketing
3) Digital Marketing Tutorial for Beginners-
https://www.simplilearn.com/tutorials/digital- marketing-tutorial

SYLLABUS (CBCS) FOR F.Y.BBA (C.A.) (w. e. from June, 2022)
Academic Year 2022-2023

Class: F.Y.BBA (C.A.) (Semester - I)

Paper Code: UBCA126   Title of Paper: Computer Laboratory I

[Based on UBCA121]

Credit: 2   No. of. Hours: 30

A) Learning Objectives:
1. To introduces object oriented programming concepts using the C++ language.
2. To introduces the principles of data abstraction, inheritance and polymorphism
3. To introduces exception handling, formatted I/O and Unformatted I/O

B) Learning outcomes:

Student should be able to:

1. To develop applications for a range of problems using OOP's techniques

Topics/Contents

Assignments on Basics programs of C++ without Class

Assignments on functions- call by value, call by reference, default argument and constant argument

Assignments on inline function

Assignments on basic programs using Class

Assignments on Array of object, object as a function argument

Assignments on Friend function

Assignments on Constructor, destructor

Assignments on Inheritance

Assignment on polymorphism- function overloading, operator overloading

Assignments on File Handling

Assignments on Template- class template, function template

SYLLABUS (CBCS) FOR F.Y.BBA (C.A.) (w. e. from June, 2022) Academic Year 2022-2023

Class: F.Y.BBA (C.A.) (Semester - I)
Paper Code: UBCA127   Title of Paper: Computer Laboratory I [Based on UBCA122]

Credit: 2   No. of. Hours: 30

A) Learning Objectives:
1. To study basic concepts of web technology
2. To develop and understanding of how CSS can enhance the design of the webpage.
3. To understand how to develop web based applications using JavaScript.

B) Learning outcomes:

Student should be able to:
1. Implement the given HTML program.
2. Able to create and apply CSS styling.
3. Use JavaScript concept.

<div align="center">Topics/Contents</div>

Assignments on Basic HTML Tags

Assignments on Creating List, Tables through HTML

Assignments on Styling HTML with CSS

Assignments on JavaScript

Assignments on form Validation