SYLLABUS

Bachelor of Computer Applications

3rd SEMESTER

Session 2020 - 2021

Mission of SCS&IT, DAVV

To produce world-class professionals who have excellent analytical skills, communication skills, team building spirit and ability to work in cross cultural environment.

To produce international quality IT professionals, who can independently design, develop and implement computer applications.

Professionals who dedicate themselves to mankind, who are environment conscious, follow social norms and ethics.

School of Computer Science & IT,
Devi Ahilya Vishwa Vidyalaya, Indore
www.scs.dauniv.ac.in

Course Name BCA 3rd Semester
Subject Code: CS-2021
Subject Name: Digital Electronics

Aim of the Subject

To impart basic knowledge in digital logic and circuits and to introduce basic concepts of data communications.

Objectives

To review basic electronics concepts
To review data representation techniques
To introduce student to basic concepts of digital logic
To introduce students to the design of basic logic circuits
To introduce students to some commonly used combinational and sequential circuits

Learning Outcomes

To be able to understand Basic Digital Electronics Concept .
2. To be able to analyze Electronics circuits.
3. Understand and analyze circuits with Different Technologies.

Unit 1

Unit I
Introduction to Digital Computers, Difference between Analog and Digital Computer, number system. Binary codes and their representation. Computer Arithmetic: Binary representation of Negative Integers using 2's complement and Signed magnitude representation, Fixed point Arithmetic operations on Positive and Signed (Negative) Integers like addition, subtraction multiplication.

Unit 2

Signed multiplication, Booth algorithm for multiplication. Division of positive and negative binary numbers. Boolean Algebra and Logic Gates: Basic Definitions, Basic Theorems and properties of Boolean Algebra, Boolean Functions, Canonical and standard forms, Other Logic operations, Digital Logic gates, Integrated Circuits.

Unit 3

Gate-Level Minimization: The K-Map Method, 3 and 4 variable K-Map, Product of sums simplification, Sum of Products simplification, Don't care conditions, NAND and NOR implementations, Exclusive-OR function. Combinational Logic: Combinational Circuits, Analysis Procedure, Design Procedure, Binary half adder, binary full adder, binary full subtractor.

Unit 4

Binary parallel adder, carry propagation delay and Propagation delay calculation of various digital circuits. Fast adder, Decimal Adder, seven segment display, BCD to excess three code converter, Decoders, Encoders, Multiplexer, and Demultiplexers. Synchronous Sequential logic: Sequential circuits, Latches, Flip Flops: SR, D, JK, T.

Unit 5

Master Slave JK Flip flop. Characteristic equations and Excitation tables of flip-flops. Analysis of clocked sequential circuits: State diagrams, State equations for D, JK and T Flip flops. Shift Registers- Serial in Serial out, Serial in Parallel out, Parallel in Serial out and Parallel in Parallel, Designing of Asynchronous (Ripple) Counters, Design of Synchronous Counters. Various terms related to integrated circuits like: Noise margin, fan in, and Fan out, propagation delay, power dissipation Digital logic families like: TTL, CMOS, ECL, RTL, comparison between these families

Text Book(s)

1.Digital Design by M. Morris Mano. Publication: PHI Eastern economy edition, 2001.
2. Computer Architecture By Dr. Rajkamal. Publication: TMH Indian Special edition 2006.

Reference Material(s)

1.Computer Fundamentals – Architecture and Organization By B. Ram. Publication: PHI Fourth edition, 2003.
2 Principles of digital communication system & computer networks, K.V.K.K. Prasad
3 Computer organization and architecture by William Stallings. Publication : PHI Fifth edition, 1999.
4 Digital systems principal and Design by Dr. Rajkamal, Publication: PHI First impression, 2006.

Course Name BCA 3rd Semester
Subject Code: CS-2222
Subject Name: Data Structures and Algorithms

Aim of the Subject

To develop proficiency in the specification, representation, and implementation of Data Structures and apply the concepts for better program design.

Objectives

- To understand object oriented programming
- To understand abstract data types
- To implement various data structures and related algorithms used in computer science.
- Profiling of the algorithms used in specific data structures.
- To understand the complexity of a algorithm.
- Study of Searching and sorting algorithms

Learning Outcomes

- Outline basic object-oriented design concepts. i.e., Inheritance, Polymorphism, Dynamic Method Binding etc.
- Explain, implement the following data structures: Lists (unordered and ordered), Stacks, Queues
- Explain and use pointers, dynamic memory allocation, and linked structures for the above listed data structures.
- Write and test procedures with linked structures.
- Explain, implement and apply the following hierarchical data structures: Binary search trees, Heaps, Graphs etc.
- Analyses sorting and searching algorithms, and explain their relationship to data structures.
- Analyses time and space complexity of algorithms.
- Choose and implement appropriate data structures to solve an application problem.

Unit 1

Data structures: Definition & Classification, Abstract data type, Arrays: Definition, representation of One and Two dimensional arrays, Operations on Arrays.

Unit 2

Stacks: Definition, Implementation. Applications of Stack, Infix to Postfix Conversion, Queues: Operations on Queues, Queue Applications, Circular Queue, Double ended queue.

Unit 3

Singly Linked List: Implementation and Applications, Representation of a Polynomial, Polynomial Addition; Circular Linked List: Implementation and Applications, Doubly Linked List: Implementation and Applications.

Unit 4

Introduction to Trees, Binary Tree, Tree Traversals: Preorder, Inorder and Postorder, Binary Search Tree, Graph: Definition of Undirected Graph and Directed Graph, Graph representation, Graph Traversal: Breadth first Traversal, Depth first Traversal.

Unit 5

Algorithm, Concept of Algorithm analysis, Time and Space Complexity, Worst case Analysis, Searching algorithm: Linear Search and Binary Search, Sorting algorithms: Selection Sort, Bubble Sort, Insertion Sort, Hash Functions, Collision Resolution Techniques.

Text Book(s)

1. E. Horowitz, S. Shani: Fundamentals of Data Structures, Schuam Series.
2. T. H. Cormen, C. E. Leiserson, R. L. Rivest and C. Stein. Introduction to Algorithms, 2nd edition, MIT Press, 2001

Reference Material(s)

1. D.E. Knuth: The Art of Computer Programming, Vols. 1 to 3, Addison-Wesley, Massachusetts, 1973.
2. Aho Alfred V., Hopperoft John E., Ullman Jeffrey D., "Data Structures and Algorithms", AddisonWesley
3. Drozdek- Data Structures andAlgorithms,Vikas
4. Horowitz, S. Sahni, and S. Rajasekaran, Computer Algorithms, Galgotia Pub. Pvt. Ltd., 1998.
5. R. Kruse C.L. Tondo and B. Leung, Data Structures and Program design in C, PFU, 1997.

Course Name BCA 3rd Semester
Subject Code: CS-2111
Subject Name: Mathematics-III

Aim of the Subject

The aim of this course is to provide mathematical background to the students so that they can be able to solve any problem related to computer science. This course will enable them to analyse and understand any problem mathematically.

Objectives

1. Know Difference Operator, Interpolation, Numerical Differentiation & Integration, Numerical solution of differential equation and linear programming problems and Complex Variables.
2. Understand their applications.
3. Solve related simple numerical problems which enable them to understand the subject.

Learning Outcomes

Develop ability to apply knowledge of Mathematics and science in solving computational problems related with numerical Analysis: Difference operator, Interpolation, Inverse Interpolation, Numerical differentiation, Numerical Integration by using Simpson's method, Weddle's rule and Gauss Legendre open quadrate formula, Solutions of algebraic and transcendental equations (Regular false ,Newton- Raphson, Iterative, Graeffe's root squaring method), Solutions of simultaneous algebraic equations: Direct methods(Gauss Elimination Method ,Gauss Jordan Method), Iterative Methods (Jacobi Iterative Method, Gauss-Seidel Iterative Method) , Solutions of ordinary differential equation (Tailor's Series, Picard's Method, Modified Euler's Method, Runge- Kutta Method, Predictor-Corrector Method),Solution of Partial differential equation , Introduction to optimization by linear programming ,only two variable problems solutions by graphical and simplex method, concept of degeneracy and duality: simple three variable transport and assignment problems . Functions of complex variables: Analytic functions, Harmonic conjugate, Cauchy - Riemann Equations, Line integral, Cauchy's theorem, Cauchy's Integral formula, singular points, Poles and Residue, Residue theorem , Evaluation of Real Integral and Bilinear Transformation.

Unit 1

Numerical Analysis: Difference operators, Errors and Approximations, Interpolation, Inverse Interpolation, Numerical differentiation, Numerical Integration by using Simpson's method, Weddle's rule and Gauss Legendre open quadrate formula.

Unit 2

Solutions of algebraic and transcendental equations (Regular False, Newton-Raphson, Iterative, Graeffe's root squaring methods). Solutions of simultaneous algebraic equations: Direct methods (Gauss Elimination Method, Gauss-Jordan Method), Iterative Methods (Jacobi Iterative Method, Gauss-Seidel Iterative Method).

Unit 3

Solutions of ordinary differential equations (Tailor's Series, Picard's Method, Modified Euler's Method, Runge-Kutta Method, Predictor-Corrector Method), Solution of Partial differential equation.

Unit 4

Introduction to optimization by linear programming, only two variable problems solution by graphical and simplex method, concept of degeneracy and duality; simple three variable transport and assignment problems and modeling into LPP.

Unit 5

Functions of Complex Variables: Analytic functions, Harmonic Conjugate, Cauchy-Riemann Equations, Line integral, Cauchy's theorem, Cauchy's Integral formula, Singular points, Poles and Residues, Residue theorem, Evaluation of Real Integral, Bilinear Transformation.

Text Book(s)

Engineering Mathematics II, Dr. D. C. Agarwal, Fifth Edition, Published by Shree Sai Prakashan.

Reference Material(s)

1. Higher Engineering Mathematics – Dr.B.S Grewal, 36th edition, Khanna Publishers, 2001. ISBN: 8174091157, 9788174091154
2. Higher Engineering Mathematics – BV Ramana,Tata McGraw-Hill Education, 2006, ISBN: 007063419X, 978007063419

Course Name BCA 3rd Semester
Subject Code: CS-3207
Subject Name: Object oriented programming through C++ I

Aim of the Subject

To clear the concept and applications of object oriented programming language C++.

Objectives

1.To make the students understand the object oriented concepts.
2. To make the students aware of the basic syntax and the usage of C++.
3. To make the students implement the various concept of object orientation including data abstraction, data hiding, inheritance, polymorphism etc. practically.
4. This course will also prepare students with the necessary programming background for Data Structures using C/C++ and Java programming courses.

Learning Outcomes

1.Students should be able to understand the use and implement the following:

- Classes and Objects
- Function Overloading
- Operator Overloading
- Inheritance
- Virtual Functions and Polymorphism
- Templates
- File handling

2. Student should be able to write programs/projects using Object Oriented approach
3. Student will be prepared for the technical tests related to C++.

Unit 1

Introduction to OOP's Languages, Difference between procedure oriented and object oriented languages, characteristics of OOP's languages, application of OOP's, basic program structure, preprocessor directives. OOP's paradigm & concepts: Objects, Class, A sample C++ program with class, Defining member function, Introduction to- Data abstraction, Data encapsulation, Inheritance, polymorphism. Difference between structure and class.

Unit 2

Scope resolution operator, Constructors and Destructors, Types of constructors: Default, Parameterized, copy constructors. . Data types in C++, Data type conversion and casting, explicit and implicit type conversion, Block, Local and

Global variables, Qualifiers effecting scope and visibility of variables : Static, Auto, Extern and Register variables, Operators in C++, manipulators.

Unit 3

Access specifiers in C++ : Public, Private and Protected data member and member functions, Defining a member function of a class outside the class using scope resolution operator, inline functions, difference between macro, inline and simple function, Polymorphism: Function overloading, Operator overloading, Unary and Binary operator overloading, types of polymorphism : Compile time and Runtime Polymorphism,

Unit 4

Pointers, this pointer, pointer to object, Pointer Arithmetic, Pointer to object. Inheritance, types of inheritance : single, multiple , multilevel, hierarchical, hybrid inheritance, public, private and protected visibility in inheritance. Function overriding, pure virtual function Abstract class.

Unit 5

Templates: Function template and class templates. Working with Files: Introduction to Classes for File Stream Operation, Opening & Closing Files, Detection of End of File, Working with Files, Exception Handling.

Text Book(s)

Text book :

1.C++ : The Complete Reference by Herbert Schildt 4th Edition Mc-Graw Hill

Reference Books

1. Let Us C++ - 2nd edition by Yashavant Kanetkar – BPB Publications
2. Balaguruswamy Object Oriented Programming With C++ Fourth Edition Tata Mc-Graw Hill
3. The C++ Programming Language by Bjarne Stroustrup Addison-Wesley

Reference Material(s)

Uploaded on Google classroom

Course Name BCA 3rd Semester
Subject Code: IC-3913
Subject Name: Financial Accounting

Aim of the Subject

The objective of this course is to acquaint students with the accounting concepts, tools and techniques and preparation of accounts for certain businesses so that they can develop business application easily.

Objectives

The course is designed to make students:

1) Learn fundamental accounting concepts, elements of financial statements, and basic accounting vocabulary.

2) To give an in-depth knowledge of all business transactions and how they should be recorded, classified & interpreted to get a meaningful judgment of viability &
profitability of the industry.

3) Learn the concepts of journal, ledger, final accounts, Inventory Management, Break Even Point.

4) To develop an understanding of financial statements and the principles and concepts underlying them;

5) To lay foundation for developing the skills to interpret Financial Statements;

Learning Outcomes

Learning Outcome

The mission of the Accounting Program is to prepare students about a functional domain of accounting so that they can utilize it in technology.

1) Students will recognize commonly used financial statements, their components and how information from business transactions flows into these statements

2) Students will demonstrate progressive learning in the elements of managerial decision making, including planning, directing and controlling activities in a business environment.

3) Students will be able to understand tax issues.

4) Students will be able to demonstrate knowledge of preparation of Financial Statements and or financial schedules in accordance with Generally Accepted Accounting Principles through analysis and synthesis of information as well.

5) Students will be able to demonstrate knowledge in setting up a computerized set of accounting books for a “for profit “ entity.

6) Students will demonstrate progressive affective domain development of values, including but not limited to receiving and responding to: the role of

accounting in society, business ethics, environmental and global societal sustainability, and/or career opportunities.

7) Students will complete a Project/ Written Assignment that integrates career orientation and or professional development skills.

8) Students will be able to demonstrate knowledge of various advanced accounting issues related to Financial Accounting within a global and or ethical framework.

Unit 1

Introduction to book keeping: meaning, nature, development, objectives, merits and Difference
between book keeping and accountancy. Fundamentals of accounting: Accounting concepts and conventions. Brief introduction to GAAP and its importance. Accounting structure: the process of accounting –journal, ledger, subsidiary books.

Unit 2

Trial Balance based on Double Entry Book Keeping System.
Financial Systems and related concepts: Form and preparation of Income statements (P &L
A/C), Statement of Financial Position.

Unit 3

Methods of Depreciation – SLM Method and WDV method.
Financing Decisions : Tools of Financial Analysis : Financial Statement Analysis, Statement of
Financial position.

Unit 4

Break Even Analysis.
Leverages : operating , financial and combined. Accounting Package – Tally (Operations)

Unit 5

Inventory Management and Responsibility Accounting :
Methods of Inventory Management and Material Issues. Responsibility Accounting _ Meaning, Objectives and Importance.

Text Book(s)

1. Tulsian's Accountancy for Class XI, Financial Management by Khan & Jain.

Reference Material(s)

Reference books :
1. Financial Accounting by TS Grewal.
2. Financial Management by Khan and Jain.

3. NCERT Books on Accounting and FM for Class XI and X

Class Assignments: Digital Electronics

Assignment I (Week 1):

1) Write the first 20 decimal digits in base 4.
2) Write the first 20 decimal digits in base 3.
3) Add and multiply the following numbers in the given base without converting to decimal.
   (i) $(1230)_4$ and $(33)_4$
   (ii) $(130)_5$ and $(34)_5$
   (iii) $(230)_6$ and $(54)_6$
   (iv) $(130.4)_5$ and $(34.3)_5$
4) Write the first 100 decimal digits into binary.
5) Convert the following numbers into binary. (i) 123.56 (ii) 456.75
   (iii) 345.9 (iv) 890.9
   (v) 567.9 (vi) 668.7
6) Converts the following numbers into decimal.
   (i) 10101010 (ii) 101010110011
   (iii) 10110101.1111 (iv) 101010111.1101
   (v) 1011011010.101 (vi 111001100.1100
7) Perform the following conversion , without converting into decimal :
   (i) $(3674)_8$ to $(\ )_{16}$ to $(\ )_2$
   (ii) $(1001010101010)_2$ to $(\ )_{16}$ to $(\ )_8$
   (iii) $(AC4)_{16}$ to $(\ )_2$ to $(\ )_8$
   (iv) $(AAFF)_{16}$ to $(\ )_8$ to $(\ )_2$

Assignment II (Week 2, 3):

1) Represent the following numbers into sign magnitude representation.
   (i)-11
   (ii) –15
   (iii) 7
   (iv) 7
   (v) 13
   (vi) 31
   (vii) 32
2) Represent the following numbers into sign two's complement representation.
   (i) -11
   (ii) 15
   (iii) 15
   (iv) 7
   (v) 7
   (vi) 13
   (vii) 31
   (viii) 32
3) Perform the M-N and N-M using two's complement

method. (i) M= 101100101 and N = 111000110
(ii) M=110011001 and N = 1010101010 (iii) M= 110010101 and N= 0000101
(iv) M =101 and N = 110110
(v) M= 45 and N =90

4) Perform the multiplication of following numbers using two's complement method (i) 16 *-6
(ii) 23*-9
(iii) –12 *25
(iv) –12*-21
(v) –4 * -6

Assignment III (Week 4, 5):

1) Simplify the following Boolean functions to minimum number of literals

(i) AB+AB'+C'+ABC
(ii) ABC+ABC'+AB
(iii) AC+BC+ABC+BC'
(iv) ABC'+BC+AB
(v) ABC+ABCD+CD'+ABCD
(vi) AD + ABCD' +A'B'C'D' + ABC' + A'B'CD + ABC
(vii) A'CD + A'C'D' + A'B'C'D +ABC' +ABCD +A'B'C'D'

2) Simplify the problems of question no. 7 using karnaugh map.
3) Simplify the following functions using karnaugh map. (i) F=∑ (1,4, 7, 8)
(ii) F=∑ (3,4, 7)
(iii) F=∑ (0,1,2,4, 7, 8,10,15,)
(iv) F=∑ (1,4, 7, 8,10) and D=∑ (2,11,12)
(v) F=∑ (1,2,3,4,7,8,10,11,12) and D=∑ (6,9)
(vi) F=∑ (0,1,2,3,6,7,8,15) and D=∑ (13,14)
(vii) F=∑ (1,2,3,4,7,8,9,11,12,15)
(viii) F=∑ (1,4, 7, 8)

Assignment IV (week 6):

1) Implement the following function using AND and OR gate. (i) F=∑ (1,4, 7, 8)
(ii) F=∑ (3,4, 7)
(iii) F=∑ (0,1,2,4, 7, 8,10,15,)
(iv) F=∑ (1,4, 7, 8,10) and D=∑ (2,11,12)
(v) F=∑ (1,2,3,4,7,8,10,11,12) and D=∑ (6,9)

(vi) $F=\sum(0,1,2,3,6,7,8,15)$ and $D=\sum(13,14)$
(vii) $F=\sum(1,2,3,4,7,8,9,11,12,15)$
(viii) $F=\sum(1,4,7,8)$

2) Implement the following function using only NOR gate.
   (i) AB+AB'+C'+ABC
   (ii) ABC+ABC'+AB
   (iii) AC+BC+ABC+BC'
   (iv) ABC'+BC+AB
   (v) ABC+ABCD+CD'+ABCD
   (vi) AD + ABCD' +A'B'C'D' + ABC' + A'B'CD + ABC
   (vii) A'CD + A'C'D' + A'B'C'D +ABC' +ABCD
3) Implement the following function using only NOR gate.
   (i) AB+AB'+C'+ABC
   (ii) ABC+ABC'+AB
   (iii) AC+BC+ABC+BC'
   (iv) ABC'+BC+AB
   (v) ABC+ABCD+CD'+ABCD
   (vi) AD + ABCD' +A'B'C'D' + ABC' + A'B'CD + ABC

Assignment V:

1) Design a combinational circuit that accepts a three-bit number and generates an output binary number equal to the square of the input number.
2) Design a combinational circuit that accept BCD values and generate cube of That number.
3) Design a combinational circuit that generates 540321 weighted code for a BCD input.
4) Design a combinational circuit with four input lines that represent a decimal digit in BCD and four output lines that generate the 9's complement of the input number.
5) Implement a full subtractor with two half subtractor and one additional gate.
6) Design a combinational circuit that converts a BCD code to 8,4,-2,-1 code.
7) Design a excess 3 to BCD code converter using a four bit full adder MSI circuit.
8) Design a adder subtractor circuit using IC of full adder and some additional Gates.
9) Design a combinational circuit that accepts BCD input and multiply it by 3
10) Design a 4-bit circuit that generates booth multiplier for given multiplier.

Assignment VI:

1) A combinational circuit is defined by the following two functions.
   F1=x'y'+yz'
   F2=x'+y
   F3=xy+x'y'
   Design the circuit with a decoder and external gates.
2) Design an even parity generator.
3) Design 3 to 8 decoder by using two 2 to 4 decoder.

4) Design 4 to 16 decoder by using two 3 to 8 decoder.
5) Design 5 to 32 decoder by using four 3 to 8 decoder.
6) Implement the following function by using decoder and some external gates. a. $F(A,B,C) = \sum (1,4,5,7)$
   b. $F(A,B,C,D) = \sum (1,4,5,7,9,10)$
   c. $F(A,B,C) = \sum (1,4,5,6)$
   d. $F(A,B,C, D) = \sum (1,4,5,7,13,15)$
   e. $F(A,B,C,D,E) = \sum (1,4,5,7,8,9,12,14,16,17,27,30)$

Assignment VII:

1) Derive the excitation table of all flip-flops with their truth table.
2) Design an asynchronous UP counter.
3) Design a synchronous down counter.
4) Write the various application of asynchronous and synchronous transmission.

Assignment VII:

1) Write comparison between TTL and CMOS.
2) Write comparison between ECL and TTL.
3) Write various features of CMOS.
4) Write various features of TTL.
5) Write various features of ECL.

CS-2222: Data Structure and Algorithms
Lab Manual

1. Write a Program to construct stack of integers and to perform the following operations on it:
   a. Push
   b. Pop
   c. Display
   The program should print appropriate messages for stack overflow, stack underflow, and stack empty.

2. Write a Program to simulate the working of a queue of integers using an array. Provide the following operations:
   a. Insert
   b. Delete
   c. Display

3. Write a Program to simulate the working of a Circular queue and Deque of integers using an array. Provide the following operations:
   a. Insert
   b. Delete
   c. Display

4. Write a Program to construct a singly linked list and to perform the following operations on it:
   a) The insertion operation
      i. At the front of a list
      ii. At the back of the list
      iii. At any position in the list

   b) The deletion operation
      i. At the front of a list
      ii. At the back of the list
      iii. At any position in the list

   c) Displaying all the nodes in the list

5. Write a Program to construct a stack of integers using singly linked list and to perform the following operations:
   a. Push
   b. Pop
   c. Display
   The program should print appropriate messages for stack overflow and stack empty.

6. Write a program to construct a queue of integers using singly linked list and to perform the

following operations:

a. Insert

b. Delete

c. Display

7. Write a Program to construct a doubly linked list and to perform the following operations on it:
   a) The insertion operation
      i. At the front of a list
      ii. At the back of the list
      iii. At any position in the list

   b) The deletion operation
      i. At the front of a list
      ii. At the back of the list
      iii. At any position in the list

   c) Displaying all the nodes in the list

8. Write a Program to construct a Circular (Singly & Doubly) linked list and to perform the following operations on it:
   a) The insertion operation
      i. At the front of a list
      ii. At the back of the list
      iii. At any position in the list

   b) The deletion operation
      i. At the front of a list
      ii. At the back of the list
      iii. At any position in the list

   c) Displaying all the nodes in the list

9. Write a program to create and display a polynomial.

10. Write a program to print the middle element of a given linked list (There is an odd number of elements in list).

11. Write a program to Count the number of nodes of a given linked.

12. Write a program to Sort the element of linked list.

13. Write a program to Search a particular data in a singly linked list.

14. Write a Program:
    a. To construct a binary search tree of integers.
    b. To traverse the tree using all the methods i.e., inorder, preorder and postorder.
    c. To display the elements in the tree.

15. Implement Linear search algorithm.

16. Implement Binary search algorithm.

17. Implement Selection sort algorithm.

18. Implement Bubble sort algorithm.

19. Implement Quick sort algorithm.

20. Implement Insertion sort algorithm.

CS-3207: Object Oriented Programming through C++ I

Assignment 1:

Write and execute all the programs related to all the topics mentioned in the syllabus. Write these programs in assignment copy and submit. For reference download the file uploaded on Google classroom named CPP_Programs.zip.

Assignment 2:

Design and develop a project in C++ using the object oriented concepts. This will be a minor project that can be done in a team of 3 members. Project report and code must be submitted 15 days before final examination date.