



**COURSE OF STUDY AND SCHEME OF EXAMINATION OF B.TECH/B.ARCH/M.TECH/M.C.A.
NATIONAL INSTITUTE OF TECHNOLOGY, RAIPUR**

Branch- Computer science & Engineering

Course- B.Tech.(NIT Scheme)

Semester- IV

S.No.	Board of Studies	Sub. Code	Subject Name	Periods/week			Examination Scheme					Total Marks	Credits L+(T+P)/2
				L	T	P	TA	FE	SE	T.C.A	ESE		
1	Elex. & Tel.	ET20411(CS)	Micro Processor & Interface.	3	1	-	20	15	15	50	70	120	4
2	Comp. Sc. & Engg.	CS20412(CS)	Data Structure	3	1	-	20	15	15	50	70	120	4
3	Comp. Sc. & Engg.	CS20413(CS)	Object Oriented Concepts & Programming & C++	3	1	-	20	15	15	50	70	120	4
4	Mathematics	MA20414(CS)	Discrete Structure	3	1	-	20	15	15	50	70	120	4
5	Comp. Sc. & Engg.	CS20415(CS)	Computer System Architecture	3	1	-	20	15	15	50	70	120	4
6	Elex. & Tel.	ET20416(CS)	Principal of Communication System	4	1	-	20	15	15	50	70	120	5
7	Elex. & Tel.	ET20421(CS)	Micro Processor & Interface (Lab)	-	-	3	30	-	-	30	20	50	2
8	Comp. Sc. & Engg.	CS20422(CS)	Data Structure (Lab)	-	-	3	30	-	-	30	20	50	2
9	Comp. Sc. & Engg.	CS20423(CS)	Object Oriented Concepts & Programming & C++(Lab)	-	-	3	30	-	-	30	20	50	2
10	Humanities	EN20424(CS)	Personality Development	-	-	2	25	-	-	25	0	25	1
11	Comp. Sc. & Engg.	CS20425(CS)	Discipline	-	-	-	25	-	-	25	0	25	1
			Total	19	6	11	260	90	90	440	480	920	33

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SYLLABUS

Name of the Subject	Micro Processor & Interface	Subject Code	ET20411(CS)
Semester	B.Tech IV	Board of Studies	Elex.& Tel.
Maximum Marks	70	Minimum Marks	28
Lecture Periods/Week	Tutorial Periods/Week	Practical Periods/Week	Credits
3	1	-	4

UNIT – I Microprocessor Architecture

Introduction to Microprocessor and Microcomputer Architecture, Pins & Signals, Register Organization, Timing & Control Module, 8085 Instruction Timing & Execution, 8085 Interrupts. Elementary Concepts of Assemblers & Assembler Directive in 8085. Simple Assembly language Programs using Instruction of 8085.

UNIT – II Fundamentals of Device Interfacing with 8085, Memory Interfacing: - Interfacing EPROM & RAM memories. Address Decoding, Device Selection, Memory & I/O mapped I/O, Types of I/O. Programmable Interfaces: - 8155, 8255, 8251, 8253. Overview of DMA & DMA controller, Key & Display controller.

UNIT – III Intel 8086 (16 bit processor):-

8086 Architecture, Addressing Modes, Instruction Format, Pins & Signals, 8086 Basic System Concept, Interfacing with Memories, 8086 Interrupts. Simple Assembly language Programs using Instruction of 8086.

UNIT – IV Intel 80386:-

Introduction to 80386 Microprocessor, Architecture, Pins & Signals, Memory System, Registers, Memory Management in 80386, Paging Technique, Protected Mode Operation. Brief Introduction to 80387 Math Coprocessor. Pentium Processor (**Only Features**): Introduction to Pentium Processors, Memory System, Input /Output System, Branch Prediction Logic, Floating Point Module, Cache Structure, Superscalar Architecture.

UNIT – V Microcontroller (Architecture and Programming):-

Introduction to 8051 Microcontrollers Architecture, Pin Description), Interrupt of 8051, Assembly Language Programming (Jump, Loop, Call Instructions), I/O Port Programming, 8051 Addressing Modes, Arithmetic & Logic Instructions. Interfacing of Microcontroller with 8255.

TEXT BOOKS:

1. Microprocessor Architecture, Programming and Application by R. S. Gaonkar, Wiley Eastern.(Unit 1 & 2)
2. Advance Microprocessor and Peripherals (Architecture, Programming & Interfacing) by A. K.Roy & K. M. Bhurchandi – TMH (Unit 3 & 4)
3. The 8051 Microcontroller & Embedded System by Mazidi & Mazidi – Pearson / PHI publication. (Unit 5)

REFERENCES:

1. Microprocessor – Theory & Applications. (Intel & Motorola) by M. Rafiqzaman.
2. The Intel Microprocessor – (Architecture, Programming & Interfacing) by Barry B. Bery.
3. Microprocessors and Programmed Logic (2nd Edition), Pearson Education by Kenneth L. Short
4. The 8051 Microcontroller & Embedded Systems Using Assembly and C by Kenneth J. Ayala, Dhananjay V. Gadre, Cengage Learning India Publication.



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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING SYLLABUS

Name of the Subject	Data Structure	Subject Code	CS20412(CS)
Semester	B.Tech IV	Board of Studies	Comp.Sc.& Engg.
Maximum Marks	70	Minimum Marks	28
Lecture Periods/Week	Tutorial Periods/Week	Practical Periods/Week	Credits
3	1	-	4

Unit – I Introduction: Introduction to Data Structures, algorithm evaluation, Algorithm Complexity and Time-Space trade-off. Arrays:-

Array Definition, Representation and Analysis, Single and Multidimensional Arrays, address calculation, application of arrays, Array as Parameters, Sparse Matrices Representation and its Transpose Algorithm
Recursion: Recursive definition and processes, recursion in C, example of recursion, Tower of Hanoi Problem, simulating recursion, Backtracking, recursive algorithms, principles of recursion, tail recursion, removal of recursion.

UNIT – II Stacks:-

Array Representation and Implementation of stack, Operations on Stacks: Push & Pop, Array Representation of Stack, Operations Associated with Stacks, and Application of stack: Conversion of Infix to Prefix and Postfix Expressions, Evaluation of Postfix expression using stack. Queues: Array representation and implementation of queues, Operations on Queue: Create, Add, Delete, Full and Empty, Circular queues, D-queues and Priority Queues.

UNIT – III Linked list:-

Representation and Implementation of Singly Linked Lists, Two-way Header List, Traversing and Searching of Linked List, Overflow and Underflow, Insertion and deletion to/from Linked Lists, Insertion and deletion Algorithms, Doubly linked list, Linked List in Array, Polynomial representation and addition, Generalized linked list, Garbage Collection and Compaction. Linked Representation of Stack & Queues.

UNIT – IV Searching and Hashing:-

Sequential search, binary search, comparison and analysis, Hash Table, Hash Functions, Collision Resolution Strategies, Hash Table Implementation
Sorting: Insertion Sort, Bubble Sorting, Quick Sort, Selection sort, Merge sort, Heap sort, maxima and minima heap, Time complexity & memory requirements.

UNIT – V Graphs:-

Terminology & Representations, Graphs & Multi-graphs, Directed Graphs, Sequential Representations of Graphs, Adjacency Matrices, Path Matrix, Warshall's algorithm Traversal, Connected Component and Spanning Trees, Minimum Cost Spanning Trees, Topological Sorting. Trees: Basic terminology, Binary Trees, Binary tree representation, algebraic Expressions, Complete Binary Tree, Extended Binary Trees, Array and Linked Representation of Binary trees, Traversing Binary trees, Threaded Binary trees, Traversing Threaded Binary trees, Huffman algorithm.

Reference text books:

1. Data Structures using C/C++ by Langsam, Augenstein & Tananbaum (PHI)
2. Data Structure by Seymour Lipschutz & G. a. Vijayalaksmi Pai (Schaum's outlines)
3. Data Structures & Program Design by Robert L Kruse (PHI)

Supplementary reference books:

1. Horowitz and Sahani, "Fundamentals of data Structures", Galgotia Publication Pvt. Ltd., New Delhi.
2. An Introduction to Data Structures with Application by Tremblay & Sorenson (Tata Mc)
3. Classic Data Structure by D Samanata, Prentice-Hall of India



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SYLLABUS

Name of the Subject	Object Oriented Concepts & Programming Using C++	Subject Code	CS20413(CS)
Semester	B.Tech IV	Board of Studies	Comp.Sc.& Engg.
Maximum Marks	70	Minimum Marks	28
Lecture Periods/Week	Tutorial Periods/Week	Practical Periods/Week	Credits
3	1	-	4

UNIT I : Introduction:

Basic concepts of OOP, Benefits of OOP, Object Oriented Language, Structure of C++ Program, Compiling & Linking, Operators & Expressions, Looping Concepts, Arrays & Structures, functions.

UNIT II : Classes & Object:

Specifying a class, Define member function, Scope of class and its member, Nested Class, Data hiding & encapsulation, Friend function, Array within a Class, array of object as function argument, function returning object, static member.

UNIT III: Constructors and Destructors:

Constructor function, parameterized multiple constructor, default constructor, copy constructor, const and class, Data conversion between objects of different classes, Destructor function, Polymorphism, function overloading, Operator overloading.

UNIT IV: Inheritance, Pointer & Virtual function:

Define derived classes, single inheritance, multilevel inheritance, Hierarchical inheritance, Hybrid Inheritance, Pointers to objects, this pointer, Pointers to derived class, Virtual function, Pure Virtual function, Abstract classes.

UNIT V: File I/O & Templates:

files streams, opening & closing a file, read () & write() functions, detecting end-of-file, seekp(), seekg(), tellg(), tellp() function. Introduction to Templates & Exception, Creating and handling Templates and Exception in OOP, Standard template Library.

Name of Text Books

1. OOPS with C++ : E. Balagurusamy
2. OOP with C++: Robert Laphore.

Name of Reference Books

1. Object Oriented Programming in C++ : StroutStrups.
2. Programming with C++ : Venugopal .
3. Programming with C++ : D Ravichandran
4. Let us C++ : Yashwant Kanetkar.
5. C++ and OOPs Paradigm by Debasish Jana (PHI)
6. OOP-P Sengupta & B.B. Choudhari (PHI)
7. OOP with C++ by M.P. Bhawe & S. A. Patekar (Pearson Education)
8. OOP with C++ : Poonamchanda Sarang (PHI)



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SYLLABUS

Name of the Subject	Discrete Structures	Subject Code	MA20414(CS)
Semester	B.Tech IV	Board of Studies	Mathematics
Maximum Marks	70	Minimum Marks	28
Lecture Periods/Week	Tutorial Periods/Week	Practical Periods/Week	Credits
3	1	-	4

UNIT – I MATHEMATICAL LOGIC & BOOLEAN ALGEBRA

Basic concept of mathematical logic, Statements, Connectives, Conditional and biconditional statements, Logical equivalence, Logical implication & quantifiers, Basic concept of Boolean Algebra, Properties of Boolean Algebra, Boolean functions, Disjunctive & conjunctive normal forms of Boolean functions, Applications of Boolean Algebra in switching circuits & logic circuits, Karnaugh map method for simplification of Boolean expression.

UNIT –II RELATIONS, FUNCTIONS and Group

Relations, Properties of relation, Partial order and total order relations, Function, Properties of function, composition of function, Recursive functions, Group, Permutation Group, Cyclic group, Sub- group, Cosets, Lagrange's theorem, Some theorem, on subgroups, Homomorphism and isomorphism of group, Normal sub group, Quotient group

UNIT – III Ring, Field and Element of coding theory

Ring- Definition and examples, subring, integral domains, field –Definition and examples. Elements of coding theory, parity check code, Binary Symmetric channel, Hamming Weight and Distance, Group codes, Parity check and Generator Matrix, Decoding, Hamming Matrices, Coset Decoding, Hamming Codes.

UNIT – IV GRAPH AND LATTICE THEORY

Introduction to graph theory, Walks, Paths & Circuits, Types of graphs, Shortest path problems, Eulerian and Hamiltonian graphs, Basic concept of tree: spanning tree, minimal spanning tree, search tree, rooted binary tree, Cut sets, Network flow, Matrix representation of graph, Partially ordered set, Lattice, Lattice as Algebraic system, Sub lattices, Some Special Lattices.

UNIT – V COMBINATORICS

Permutation and combinations, Pigeon-hole principle, Multinomial Coefficients, Generating function, Recurrence relation, Generating function for combinations, Enumeration for permutations, Partition of an integer, Some special partition generating functions, The principle of inclusion and exclusion, General formula for number of objects having m properties out of r, Derangements, Permutations with restrictions on relative positions, The rook polynomials.

TEXT BOOKS: -

1. Elements of discrete mathematics by C.L. Liu, Tata McGraw-Hill, publications.
2. Discrete Mathematical structures, by Bernard Kolman, Robert C. Busby and Sharon Cutler Ross, Pearson Education.

REFERENCE BOOKS: -

1. A Text Book of Discrete Mathematics, Swapan Kumar Sarkar, S. Chand & Company Ltd.
2. Graph theory with applications to engineering and computer science, by Narsingh Deo, Prentice Hall of India.
3. Discrete mathematics for computer scientists and mathematicians, by J.L. Mott, A. Kandel and T.P. Baker, Prentice Hall of India.
4. Discrete Mathematical Structures with applications to computer science, by J.P. Tremblay and R. Manohar, Tata McGraw-Hill.



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SYLLABUS

Name of the Subject	Computer System Architecture	Subject Code	CS20415(CS)
Semester	B.Tech IV	Board of Studies	Mathematics
Maximum Marks	70	Minimum Marks	28
Lecture Periods/Week	Tutorial Periods/Week	Practical Periods/Week	Credits
3	1	-	4

Unit I: Processor Basics

CPU Organization, Fundamental and features, Data Representation - Basic formats, Fixed and Floating point representation, Instruction Sets, Formats, Types and Programming Considerations, Addressing modes.

Unit II: Datapath Design

Fixed-Point Arithmetic Multiplication Algorithms: Hardware algorithm, Booth Multiplication algorithm, Division algorithms: Hardware algorithm, Divide overflow algorithm, Combinational ALU and Sequential ALU, Floating point arithmetic operations.

Unit III: Control Design

Basic Concepts, Hardwired control, Microprogrammed Control, CPU control unit and Multiplier control unit, Pipeline Control: Instruction Pipelines, Pipeline performance, Superscalar Processing.

Unit IV: Memory Organization

Memory device characteristics, RAM technology and Serial access memories technology, Multilevel memory systems, Address translation and Memory allocation systems, Cache memory: Features, address mapping.

Unit V: System Organization

Communication Method: Basic concepts, Bus Control, Programmed I/O , DMA, Interrupts and IO Processors, Parallel Processing: Processor-level Parallelism, Multiprocessor and Fault tolerance system.

Name of Text Books

1. Computer Architecture and organization – John P Hayes, McGraw Hill Publication
2. Computer Organizations and Design- P. Pal Chaudhari, Prentice-Hall of India

Name of reference Books:

1. Computer System Architecture - M. Morris Mano, PHI.
2. Computer Organization and Architecture- William Stallings, Prentice-Hall of India
3. Architecture of Computer Hardware and System Software: An Information Technology Approach, 3rd Edition (Illustrated) – Iry Englander, John Wiley & Sons Inc
- 4 Structured Computer Organization Andrew S Tanenbaum, Prentice-Hall of India
- 5 Computer Systems Organization & Architecture – John D Carpinelli, Addison-Wesley



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SYLLABUS

Name of the Subject	Principles of Communication System	Subject Code	ET20416(CS)
Semester	B.Tech IV	Board of Studies	Elex. & Tel.
Maximum Marks	70	Minimum Marks	28
Lecture Periods/Week	Tutorial Periods/Week	Practical Periods/Week	Credits
3	1	-	5

UNIT – I : Amplitude Modulation System

Need for Modulation, Amplitude Modulation, Amplitude Modulation Index, Modulation Index for Sinusoidal AM, Frequency spectrum for Sinusoidal AM, Average power for Sinusoidal AM, Effective voltage and current for sinusoidal AM, Balanced Modulator, The Square law demodulator, Nonsinusoidal modulation, DSBSC Modulation, SSB modulation and generation, VSB, FDM.

UNIT – II : Angle Modulation System

Phase and frequency modulation and their relationship. Frequency deviation, spectrum of FM Signal, BW of FM Signal, Effect of modulation on BW, constant BW, FM phasor diagram, Narrow band F.M. Armstrong and Parameter variation methods of FM generation and FM demodulators.

UNIT – III : Digital Communication

Sampling theorem, Pulse Modulation: PAM, PPM, PWM. Quantization of Signals, Quantization error, Pulse Code Modulation (PCM) and the system, Time division multiplexing (TDM), DPCM, DM, ADM, PSK FSK and DEPSK.

UNIT – IV : Elements of Information Theory

Average Information, Entropy, Information Rate. Communication Channel. Discrete and Continuous channel, Shannon-Hartley Theorem and its Implications, Channel capacity, Gaussian channel. Bandwidth s/N trade off.

UNIT – V : Advanced Communication Techniques

Satellite Communication: Components and Block diagram of Satellite communication system, Transponders, Up-link and Down-link budget calculations. Fiber Optic Communication: Principles of light propagation in optical fiber, Losses in fibers, Dispersion, Connectors and splices, Fiber optic communication link.

Text Books:

1. Electronic Communications by Roddy & Coolen, PHI.
2. Electronic Communication System by Kenedy & Davis, TMH

Reference Books:

1. Principles of Communication system by H.Taub and K.L. Shiling.
2. An Introduction to the Principle of Communication Theory by J.C. Hancock, Mc -Graw Hill.
3. Signal Processing, Modulation and Noise-by Betts, English University Press, London.
4. Communication System-by A.B. Carlson ,Mc-Graw Hill.



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SYLLABUS

Name of the Subject	Micro Processor & Interface(Lab)	Subject Code	ET20421(CS)
Semester	B.Tech IV	Board of Studies	Elex. & Tel.
Maximum Marks		Minimum Marks	
Lecture Periods/Week	Tutorial Periods/Week	Practical Periods/Week	Credits
-	-	2	1

Programmes to be executed (but should not be limited to):

8085

0. Two Tutorial class on MASM assembler of 8085, 8085 simulator and assembler directive of 8085
1. REVERSING AN ARRAY: A Block of 16 bytes are residing at locations starting from BLOCK 1 WAP to transfer the block in reverse order at locations starting from BLOCK 2.
2. SORTING IN ASCENDING ORDER: A block (16 bytes are residing at locations starting from DATA: Write a program to arrange the word in the same location in ascending order.
3. BINARY ADDITION: 16 bytes are residing at location starting from DATA WAP: to add all bytes and store the result location SUM and SUM + 1
4. BCD ADDITION: 16 BCD NUMBER are residing at location starting from DATA WAP to add all bytes and store the result location SUM and SUM + 1
5. MULTIPLICATION: Two bytes are residing at location DATA 1 and DATA 2 Write a program to multiply the two bytes and store the result at location PROD 1 and PROD 2.
6. BINARY TO BCD: A binary number is residing at location BIN > WAP to convert the binary number in to its equivalent BCD and store the result at BCD and BCD + 1
7. BCD TO BINARY: A BCD number is residing at location BCD; Write a program to convert the BCD number into its equivalent binary and store the result at BIN
8. MULTIBYTE ADDITION: Two 10 bytes are residing at location starting from DATA 1 and DATA 2 respectively, Write a program two add them up and store the result at location starting from RESULT (result space 11 bytes)
9. MULTIBYTE BCD ADDITION: Two 6 digits BCD numbers are residing at location starting from DATA 1 and DATA 2 respectively. Write a program to add them up and store the result at locations starting from RESULT (Result space 7 bytes)
10. RST 6.5: A block of 16 bytes is residing at location starting from; DATA Reverse theblock and store the bytes at REVERSE whenever the RST 6.5 key is pressed.

8086

0. Two Tutorial class on MASM assembler of 8085, 8085 simulator and assembler directive of 8085
1. To write a program to perform Addition & Subtraction of two number X & Y where X and Y are two (i) 16 - bit (ii) 48 - bit numbers.
2. To write a program to multiply 4 and 5 in ASCII and store the result in memory location.
3. To find the largest number from a block of 15 bytes of data.
4. To write a program to add series of 20 bytes of data.
5. A block of 200-signed bytes is present in memory from address BA: EA add all the positive bytes and store 8 bit signed result in memory after this block.
6. To write a program to compare two data blocks.
7. To write a program to arrange a data block in ascending order.
8. To write a program to convert an 8 -bit BCD number into its equivalent binary.
9. To write a program to count the number of odd and even bytes in a data block.
10. To write an assembly language program to solve following arithmetic equation:
 $3AX+5DX+BP.$

List of Equipments/Machine Required:

MASM assembler, 8085 and 8086 simulator, PCs.

Recommended Books:

1. 8085 Microprocessor Programming & Interfacing – N.K. Srinath, PHI
2. The Intel 8086/8088 Microprocessor Architecture, Programming, Design and Interfacing – Bhupinder Singh Chhabra, Dhanpat Rai Publications.



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SYLLABUS

Name of the Subject	Data Structure Lab	Subject Code	CS20422(CS)
Semester	B.Tech IV	Board of Studies	Comp.Sc.& Engg.
Maximum Marks		Minimum Marks	
Lecture Periods/Week	Tutorial Periods/Week	Practical Periods/Week	Credits
-	-	2	1

1. Write a program to perform following in one dimensional array, Insertion, Deletion and Searching (Linear & Binary).
2. Write a program to implement stack and perform push pop operation.
3. Write a program to convert infix to postfix expression using stack.
4. Write a program to perform following operation in linear queue - addition, deletion, traversing
5. Write a program to perform following operation in circular queue - addition, deletion, traversing
6. Write a program to perform following operation of double ended queue - addition, deletion, traversing
7. Write a program to perform following operation in single link list.-creation, inversion, deletion
8. Write a program to perform following operation in double link list – creation, insertion, deletion.
9. Write a program to implement polynomial in link list and perform
 - a. Polynomial arithmetic
 - b. Evaluation of polynomial
10. Write programs to implement linked stack and linked queue
11. Write programs to perform Insertion, selection and bubble sort.
12. Write a program to perform quick sort.
13. Write a program to perform merge sort.
14. Write a program to perform heap sort
15. Write a program to create a Binary search tree and perform –insertion, deletion & traversal.
16. Write a program to traversal of graph (B.F.S, D.F.S)

Recommended Books :

1. “Data structure using C “ by Samir kumar Bandyopadhyay, Kashi nath Dey
2. “ C and Data structures “ Ashok K Kamthane Pearson Education.
3. An Introduction to Data Structures with Application by Tremblay & Sorenson (Tata Mc)
4. Fundamentals of Data Structure by Horowitz & Sahni (Galgotia)
5. Data Structures using C by ISRD Group (Tata Mc)
6. Data Structures using C/C++ by langsam, Augenstein & Tananbaum (PHI)
7. Data Structures & Program Design by Robert L Kruse (PHI)



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SYLLABUS

Name of the Subject	Object Oriented Concepts & Programming Using C++ Lab	Subject Code	CS20423(CS)
Semester	B.Tech IV	Board of Studies	Comp.Sc.& Engg.
Maximum Marks		Minimum Marks	
Lecture Periods/Week	Tutorial Periods/Week	Practical Periods/Week	Credits
-	-	2	1

1. Write a Program to check whether number is prime or not.
2. Write a Program to read number and to display the largest value between:
A. Two number B. Three Numbers C. Four number by using switch-case statements.
3. Write a Program to find sum of first natural numbers : sum= 1+2+3+4+..... 100 by using a. for loop b. while loop c. do-while loop
4. Write a Program to find sum of the following series using function declaration.
Sum= $x - (x)^3/3! + (x)^5/5! - \dots \dots \dots (x)^n/n!$
5. Write a Program to read the element of the given two matrix & to perform the matrix multiplication.
6. Write a Program to exchange the contents of two variable by using
(a) call by value (b) Call by reference.
7. Write a Program to perform the following arithmetic operations of a complex number using a structure
(a). Addition of the two complex number (b). Subtraction of the two complex number
(c). Multiplication of the two complex number (d). Division of the two complex number.
8. Write a Program to generate a series of Fibonacci Nos. using the constructor where the constructor member function had been defines (a). is the scope of class definition itself (b). out of the class definitions using the scope resolutions operator. Also make this program with the help of the copy constructor.
9. Write a Program to demonstrate how ambiguity is avoided using scope resolution operator in the following inheritance (a). Single inheritance (b). Multiple inheritance
10. Write a Program to perform the swapping of two data items of integer, floating point number and character type with the help of function overloading.
11. Write a Program to generate a Fibonacci series by overloading a. Prefix Operator b. Postfix Operator.
12. Write a Program to access the private data of a class by non-member function through friend function where the friend function is declared : (1). is the location of public category (2). is the location of private category (3). Within the scope of a class definition itself (4). Defined with inline code subtraction.
13. Write a Program to demonstrate how a pure virtual function defined declared and invoked from the object of derived class through the pointer of the base class.
14. Write a Program to Bubble Sort Using template function.
15. Write a Program for invoking for that Generate & Handle exception.

List of Equipment/Machine Required

Pentium IV machine, Turbo C++ compiler

Name of Text Books :

1. Programming with C++ : D Ravichandran
2. OOP's with C++ : E. Balaguruswamy .

Name of Reference Books:

1. Programming with C++ : Venugopal .
2. Object Oriented Programming in C++ : StroutStrups.
3. OOP with C++ : Robert Lafore
4. Let us C++ : Yaswant Kanetkar



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SYLLABUS

Name of the Subject	Personality Development	Subject Code	EN20424(CS)
Semester	B.Tech IV	Board of Studies	Humanities
Maximum Marks		Minimum Marks	
Lecture Periods/Week	Tutorial Periods/Week	Practical Periods/Week	Credits
-	-	2	1

Objective: The course is introduced to develop one's outer and inner personality tremendously and enrich the abilities to enable one to meet the challenges associated with different job levels. Personality Development is essential for overall development of an individual apart from gaining technical knowledge in the subject.

Unit – I Personality concepts:

- What is Personality – its physical and psychic aspects. How to develop a positive selfimage. How to aim at Excellence. How to apply the cosmic laws that govern life and personality. - How to improve Memory. How to develop successful learning skills. How to develop and effectively use one's creative power.
- How to apply the individual MOTIVATORS that make you a self-power personality.

Unit – II Interpersonal Skills:

- **Leadership:** Leaders who make a difference, Leadership: your idea, What do we know about leadership? If you are serious about Excellence. Concepts of leadership, Two important keys to effective leadership, Principles of leadership, Factors of leadership, Attributes.
- **Listening:** Listening skills, How to listen, Saying a lot- just by listening, The words and the music, How to talk to a disturbed person, Listening and sometimes challenging.
- **How to win friends** and influence people, How to get along with others. How to develop art of convincing others. How can one make the difference. How to deal with others particularly elders. Conflicts and cooperation.

Unit – III Attitudinal Changes:

- **Meaning of attitude**, benefits of positive attitudes, how to develop the habit of positive thinking.
- **Negative attitude and wining:** What is FEAR and how to win it. How to win loneliness. How to win over FAILURE. How to win over PAIN. How to win over one's ANGER and others anger. How to overcome CRITICISM. What is stress and how to cope up with it? What is crisis and how to manage it.
- How to apply the **character MOTIVATORS** that elevate you and your personality to the top, the art of self motivation.
- How to acquire **mental well-being**.
- How to acquire **physical well-being**.
- How to formulate effective **success philosophy**.

Unit –IV Decision Making:

How to make your own LUCK. How to plan goals/objectives and action plan to achieve them. How to make RIGHT DECISION and overcome problems. How to make a Decision. Decision making : A question of style. Which style, when ? People decisions : The key decisions. What do we know about group decision making ? General aids towards improving group decision making. More tips for decisions of importance.

Unit – V Communication Skills:

- **Public Speaking:** Importance of Public speaking for professionals. The art of Speaking - Forget the fear of presentation, Symptoms of stage fear, Main reason for speech failure, Stop failures by acquiring Information;

Preparation & designing of speech, Skills to impress in public speaking & Conversation, Use of presentation aids & media.

- **Study & Examination:** How to tackle examination, How to develop successful study skills.

- **Group discussions:** Purpose of GD, What factors contribute to group worthiness, Roles to be played in GD.

Reference Books:

1. How to develop a pleasing personality by Atul John Rego, Better yourself books, Mumbai, 2000.
2. How to Succeed by Brian Adams, Better Yourself books, Mumbai, 1969.
3. Basic Managerial skills for all by E. H McGrawth, Prentice Hall India Pvt Ltd, 2006.
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