

II B.TECH II SEMESTER SYLLABUS

DIGITAL ELECTRONICS AND COMPUTER ORGANIZATION

II B. TECH- II SEMESTER

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P		C	CIE	SEE
A5EC72	ESC	3	1	-	4	30	70	100

COURSE OBJECTIVES:

The course should enable the students to:

1. Understand different number systems.
2. Design combinational and sequential logic circuits
3. Understand concepts of register transfer logic and arithmetic operations.
4. Learn different types of addressing modes and memory organization

COURSE OUTCOMES:

1. Able to solve from one number to another number.
2. Able to combinational and sequential logic circuits
3. Identify basic components and design of the CPU: the ALU and control unit.
4. Compare various types of IO mapping techniques
5. Critique the performance issues of cache memory and virtual memory

UNIT - I

NUMBER THEORY and BOOLEAN ALGEBRA

CLASSES: 12

Representation of numbers of different radix, conversion of numbers from one radix to another radix, r-1's complement and r's complement. 4-bit codes. Basic Theorems and Properties of Boolean algebra, Canonical and Standard Forms, Digital Logic Gates, Universal Logic Gates. K- Map Method.

UNIT - II

COMBINATIONAL and SEQUENTIAL LOGIC CIRCUITS

CLASSES: 14

Design of Half adder, full adder, half subtractor, full subtractor. Decoder, Encoder, Multiplexer, Demultiplexer and comparator. basic flip-flops, truth tables and excitation tables (NAND RS latch, NOR RS latch, RS flip-flop, JK flip-flop, T flip-flop, D flip-flop with preset and clear terminals). Classification of sequential circuits (synchronous and asynchronous);

UNIT - III

DESIGN

CLASSES: 16

Conversion of flip-flops to other flip-flops. Design of Ripple counters, design of synchronous counters, Johnson counter, ring counter, shift register, bi-directional shift register, universal shift register. Instruction codes, Computer Registers, Computer Instructions and Instruction cycle. Timing and Control Memory-Reference Instructions, Input-Output and interrupt.

UNIT - IV

REGISTER TRANSFER AND MICRO-OPERATIONS:

CLASSES: 16

Central processing unit: Stack organization, Instruction Formats, Addressing Modes, Data Transfer and Manipulation, Complex Instruction Set Computer (CISC) Reduced Instruction Set Computer (RISC), Register Transfer Language, Register Transfer, Bus and Memory Transfers, Arithmetic Micro-Operations, Logic Micro-Operations, Shift Micro-Operations, Arithmetic logic shift unit

UNIT - V

MEMORY SYSTEM

CLASSES: 16

INPUT OUTPUT: I/O interface, Programmed IO, Memory Mapped IO, Interrupt Driven IO, DMA.
MULTIPROCESSORS: Characteristics of multiprocessors, Interconnection structures, Inter Processor Arbitration, Inter processor Communication and Synchronization, Cache Coherence

TEXT BOOKS

1. Switching and Finite Automata Theory- Zvi Kohavi & Niraj K. Jha, 3rd Edition, Cambridge.
2. Digital Design- Morris Mano, PHI, 3rd Edition.
3. M. Morris Mano (2006), Computer System Architecture, 3rd edition, Pearson/PHI, India.
4. John P. Hayes (1998), Computer Architecture and Organization, 3rd edition, Tata McGrawHill

REFERENCE BOOKS:

1. Introduction to Switching Theory and Logic Design – Fredriac J. Hill, Gerald R. Peterson, 3rd Ed, John Wiley & Sons Inc.
2. William Stallings (2010), Computer Organization and Architecture- designing for performance, 8th edition, Prentice Hall, New Jersey.
3. Anrew S. Tanenbaum (2006), Structured Computer Organization, 5th edition, Pearson Education Inc,

BUSINESS ECONOMICS AND FINANCIAL ANALYSIS

II B. TECH- II SEMESTER

Course Code	Category	Hours / Week			Credit s	Maximum Marks		
		L	T	P		C	CIE	SEE
A5HS06	HSMC	3	-	-	3	30	70	100

COURSE OBJECTIVES:

To enable the student to understand and appreciate, with a particular insight, the importance of certain basic issues governing the business operations namely; demand and supply, production function, cost analysis, markets, forms of business organizations, capital budgeting and financial accounting and financial analysis.

COURSE OUTCOMES:

At the end of the course, the student will

1. Understand the market dynamics namely, demand and supply, demand forecasting, elasticity of demand and supply, pricing methods and pricing in different market structures.
2. Gain an insight into how production function is carried out to achieve least cost combination of inputs and cost analysis.
3. Develop an understanding of
4. Analyse how capital budgeting decisions are carried out.
5. Understanding the framework for both manual and computerised accounting process
6. Know how to analyse and interpret the financial statements through ratio analysis.

UNIT - I		CLASSES: 10
Introduction & Demand Analysis: Definition, Nature and Scope of Managerial Economics. Demand Analysis: Demand Determinants, Law of Demand and its exceptions. Elasticity of Demand: Definition, Types, Measurement and Significance of Elasticity of Demand. Demand Forecasting, Factors governing demand forecasting, methods of demand forecasting.		
UNIT - II		CLASSES: 10
Production & Cost Analysis: Production Function - Isoquants and Isocosts, MRTS, Least Cost Combination of Inputs, Cobb-Douglas Production function, Laws of Returns, Internal and External Economies of Scale. Cost Analysis: Cost concepts. Break-even Analysis (BEA)-Determination of Break-Even Point (simple problems) - Managerial Significance.		
UNIT - III		CLASSES: 10
Markets & New Economic Environment: Types of competition and Markets, Features of Perfect competition, Monopoly and Monopolistic Competition. Price-Output Determination in case of Perfect Competition and Monopoly. Pricing: Objectives and Policies of Pricing. Methods of Pricing. Business: Features and evaluation of different forms of Business Organisation: Sole Proprietorship, Partnership, Joint Stock Company, Public Enterprises and their types, New Economic Environment: Changing Business Environment in Post-liberalization scenario.		
UNIT - IV		CLASSES: 10

Capital Budgeting: Capital and its significance, Types of Capital, Estimation of Fixed and Working capital requirements, Methods and sources of raising capital - Trading Forecast, Capital Budget, Cash Budget. Capital Budgeting: features of capital budgeting proposals, Methods of Capital Budgeting: Payback Method, Accounting Rate of return (ARR) and Net Present Value Method (simple problems).		
UNIT - V		CLASSES: 08
Introduction to Financial Accounting & Financial Analysis: Accounting concepts and Conventions - Introduction IFRS - Double - Entry Book Keeping, Journal, Ledger, Trial Balance - Final Accounts (Trasing Account, Profit and Loss Account and Balance Sheet with simple adjustments). Financial Analysis: Analysis and Interpretation of Liquidity Ratios, Activity Ratios, and Capital structure Ratios and Profitability ratios. Du Pont Chart.		
TEXT BOOKS:		
<ol style="list-style-type: none"> 1. Varshney & Maheswari: Managerial Economics, Sultan Chand, 2009. 2. S.A. Siddiqui & A.S. Siddiqui, Managerial Economics and Financial Analysis, New Age international Publishers, Hyderabad 2013. 3. M. Kasi Reddy & Saraswathi, Managerial Economics and Financial Analysis, PHI New Delhi, 2012. 		
REFERENCE BOOKS:		
<ol style="list-style-type: none"> 1. Ambrish Gupta, Financial Accounting for Management, Pearson Education, New Delhi, 2012. 2. H. Craig Peterson & W. Cris Lewis, Managerial Economics, Pearson, 2012. 3. Lipsey & Chrystel, Economics, Oxford University Press, 2012. 4. Domnick Salvatore: Managerial Economics In a Global Economy, Thomson, 2012. 5. Narayanaswamy: Financial Accounting - A Managerial Perspective, Pearson, 2012. 6. S.N. Maheswari & S.K. Maheswari, Financial Accounting, Vikas, 2012. 7. Truet and Truet: Managerial Economics: Analysis, Problems and Cases, Wiley, 2012. 8. Dwivedi: Managerial Economics, Vikas, 2012. 9. Shailaja & Usha: MEFA, University Press, 2012. 10. Aryasri: Managerial Economics and Financial Analysis, TMH, 2012. 11. Vijay Kumar & Appa Rao, Managerial Economics & Financial Analysis, Cengage 2011. 12. J.V. Prabhakar Rao & P.V. Rao, Managerial Economics & Financial Analysis, Maruthi Publishers, 2011. 		

OBJECT ORIENTED PROGRAMMING

II B. TECH- II SEMESTER

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P		C	CIE	SEE
A5IT01	PCC	3	1	-	4	30	70	100

COURSE OBJECTIVES:

1. Understand the basic object oriented programming concepts and apply them in problem solving.
2. Illustrate inheritance and polymorphism concepts for reusing the program.
3. Demonstrate on the exception handling mechanism
4. Demonstrate on the multi-tasking by using multiple threads.
5. Develop data-centric applications using JDBC.
6. Understand the basics of java collection framework

COURSE OUTCOMES:

1. Use object oriented programming concepts to solve real world problems.
2. Demonstrate the user defined exceptions by exception handling keywords (try, catch, throw, throws and finally).
3. Use multithreading concepts to develop inter process communication.
4. Develop java application to interact with database by using relevant software component (JDBC Driver).
5. Solve real world problems using Collections.

UNIT - I

JAVA BASICS

CLASSES: 15

JAVA BASICS: Review of Object oriented concepts, History of Java, Java buzzwords, JVM architecture, Data types, Variables, Scope and life time of variables, arrays, operators, control statements, type conversion and casting, simple java program, constructors, methods, Static block, Static Data, Static Method String and String Buffer Classes, Using Java API Document

UNIT - II

INHERITANCE , POLYMORPHISM, PACKAGES AND INTERFACES

CLASSES: 15

INHERITANCE AND POLYMORPHISM: Basic concepts, Types of inheritance, Member access rules, Usage of this and Super key word, Method Overloading, Method overriding, Abstract classes, Dynamic method dispatch, Usage of final keyword.

PACKAGES AND INTERFACES: Defining package, Access protection, importing packages, Defining and Implementing interfaces, and Extending interfaces.

UNIT - III

EXCEPTION HANDLING AND FILES

CLASSES: 12

EXCEPTION HANDLING: Exception types, Usage of Try, Catch, Throw, Throws and Finally keywords, Built-in Exceptions, Creating own Exception classes.

I / O STREAMS AND FILES: Concepts of streams, Stream classes- Byte and Character stream, Reading console Input and Writing Console output, File Handling.

UNIT - IV

MULTITHREADING AND JDBC

CLASSES: 12

MULTI THREADING: Concepts of Thread, Thread life cycle, creating threads using Thread class and Runnable interface, Synchronization, Thread priorities, Inter Thread communication.

JDBC-Connecting to Database - JDBC Type 1 to 4 drives, connecting to a database, querying a database and processing the results, updating data with JDBC.

UNIT - V

COLLECTION FRAMEWORK

CLASSES: 10

COLLECTION FRAMEWORK: Introduction to Java Collections, Overview of Java Collection frame work, Generics, Commonly used Collection classes- Array List, Vector, Hash table, Stack, Enumeration, Iterator, String Tokenizer, Random, Scanner, calender and Properties

TEXT BOOKS:

1. Herbert Schildt and Dale Skrien, "Java Fundamentals – A comprehensive Introduction", McGraw Hill, 1st Edition, 2013.
2. Herbert Schildt, "Java the complete reference", McGraw Hill, Osborne, 7th Edition, 2011.
3. T.Budd, "Understanding Object- Oriented Programming with Java", Pearson Education, Updated Edition (New Java 2 Coverage), 1999.

REFERENCE BOOKS:

1. P.J.Dietel and H.M.Dietel , "Java How to program", Prentice Hall, 6th Edition, 2005.
2. P.Radha Krishna , "Object Oriented programming through Java", CRC Press, 1st Edition, 2007.
3. S.Malhotra and S. Choudhary, "Programming in Java", Oxford University Press, 2nd Edition, 2014.

DESIGN AND ANALYSIS OF ALGORITHMS

II B. TECH- II SEMESTER

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P		C	CIE	SEE
A5CS08	PCC	3	1	-	4	30	70	100

COURSE OBJECTIVES:

The course should enable the students to:

1. To demonstrate performance of algorithms with respect to time and space complexity.
2. To explain graph and tree traversals.
3. To explain the concepts greedy method and dynamic programming. Applying for several applications like knapsack problem, job sequencing with deadlines, and optimal binary search tree, TSP and so on respectively.
4. To illustrate the methods of backtracking and branch bound techniques to solve the problems like n-queens problem, graph colouring and TSP respectively.
5. To familiarize the concepts of deterministic and non-deterministic algorithms.

COURSE OUTCOMES:

At the end of this course students will be able to:

1. Identify various Time and Space complexities of various algorithms
2. Understand Tree Traversal method and Greedy Algorithms
3. Apply Dynamic Programming concept to solve various problems
4. Apply Backtracking, Branch and Bound concept to solve various problems
5. Implement different performance analysis methods for non deterministic algorithms

UNIT - I	INTRODUCTION	CLASSES: 10
Characteristics of algorithm. Analysis of algorithm: Asymptotic analysis of complexity bounds – best, average and worst-case behavior; Performance measurements of Algorithm, Time and space trade-offs, Analysis of recursive algorithms through recurrence relations: Substitution method, Recursion tree method and Masters' theorem.		
UNIT - II	FUNDAMENTAL ALGORITHMIC STRATEGIES – Part I	CLASSES: 12
DIVIDE AND CONQUER: General method, applications-analysis of binary search, quick sort, merge sort, AND OR Graphs. GREEDY METHOD: Heuristics –characteristics, Applications-job sequencing with deadlines, 0/1 knapsack problem, minimum cost spanning trees, Single source shortest path problem.		
UNIT - III	FUNDAMENTAL ALGORITHMIC STRATEGIES – Part II	CLASSES: 16
DYNAMIC PROGRAMMING: General method, applications - optimal binary search trees, 0/1 knapsack problem, All pairs shortest path problem, Travelling sales person problem, Reliability design. BACKTRACKING: Heuristics –characteristics, Applications- n-queen problem, Sum of subsets problem, Graph coloring, 0/1 knapsack problem, and Hamiltonian cycles. BRANCH AND BOUND: General method, applications - travelling sales person problem, 0/1 knapsack problem- LC branch and bound solution, FIFO branch and bound solution.		
UNIT - IV	GRAPH AND TREE ALGORITHMS	CLASSES: 12

GRAPHS (Algorithm and Analysis): Breadth first search and traversal, Depth first search and traversal, Spanning trees, connected components and bi-connected components, Articulation points, Shortest path algorithms, Transitive closure, Topological sorting, Network Flow Algorithm.		
UNIT - V	TRACTABLE AND INTRACTABLE PROBLEMS	CLASSES: 10
Computability of Algorithms, Computability classes – P, NP, NP-complete and NP-hard. Cook's theorem, Standard NP-complete problems and Reduction techniques, Approximation algorithms, Randomized algorithms.		
TEXT BOOKS:		
<ol style="list-style-type: none"> 1. Introduction to Algorithms, 4TH Edition, Thomas H Cormen, Charles E Lieserson, Ronald L Rivest and Clifford Stein, MIT Press/McGraw-Hill. 2. Fundamentals of Algorithms – E. Horowitz et al. 		
REFERENCE BOOKS:		
<ol style="list-style-type: none"> 1. Algorithm Design, 1ST Edition, Jon Kleinberg and Éva Tardos, Pearson. 2. Algorithm Design: Foundations, Analysis, and Internet Examples, Second Edition, Michael T Goodrich and Roberto Tamassia, Wiley. 3. Algorithms -- A Creative Approach, 3RD Edition, Udi Manber, Addison-Wesley, Reading, 		
WEB REFERENCES:		
<ol style="list-style-type: none"> 1. https://www.hackerrank.com/domains/algorithms 2. https://discuss.codechef.com/questions/48877/data-structures-and-algorithms 2. http://openclassroom.stanford.edu/MainFolder/CoursePage.php?course=IntroToAlgorithms 3. https://www.tutorialspoint.com/design_and_analysis_of_algorithms/design_and_analysis_of_algo_rithms_tutorial.pdf 4. http://nptel.ac.in/courses/106101060/ 		
E-TEXT BOOKS:		
<ol style="list-style-type: none"> 1. http://www.trips-to-morocco.com/introduction-to-algorithms-3rd-edition-mit-press-english.pdf 2. https://comsciers.files.wordpress.com/2015/12/horowitz-and-sahani-fundamentals-of-computer-algorithms-2nd-edition.pdf 3. https://doc.lagout.org/science/0_Computer%20Science/2_Algorithms/Algorithm%20Design_%20Foundations%2C%20Analysis%2C%20and%20Internet%20Examples%20%5BGoodrich%20%26%20Tamassia%202001%5D.pdf 		
MOOC COURSE:		
<ol style="list-style-type: none"> 1. https://onlinecourses.nptel.ac.in/noc17_cs27/preview 2. https://www.coursera.org/courses?languages=en&query=Algorithm+design+and+analysis 		

ADVANCED DATA STRUCTURES

II B. TECH- II SEMESTER								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P		C	CIE	SEE
A5CS09	PCC	3	1	-	4	30	70	100
<p>COURSE OBJECTIVES:</p> <ol style="list-style-type: none"> 1. Impart the basic concepts of data structures. 2. Understand concepts of Dictionary ADT and Hash Table. 3. Understand basic concepts of Trees and Priority Queues 4. Understand basic concepts of Graphs and traversal techniques 5. Familiarize with concepts of search trees like BST, AVL, B-Tree, Red-Black Tree and Splay Tree. 6. Understand the different text processing algorithms. <p>COURSE OUTCOMES</p> <p>At the end of the course, student will be able to:</p> <ol style="list-style-type: none"> 1. Design and implement Hash Table and Dictionary using Linked List. 2. Construct and implement Tree and Heap Data Structure. 3. Construct a graph and traverse using BFS and DFS 4. Construct and analyse Search Trees. 5. Solve search problems using Text Processing Algorithms. 								
UNIT - I	DATA STRUCTURES & HASHING						CLASSES: 10	
<p>Data Structures- Definition, Linear and non linear data structures, Abstract Data Type (ADT) concept, Overview of basic data structures - the list ADT, stack ADT, queue ADT, array and linked implementation.</p> <p>Hashing- Dictionaries, linear list representation, operations- insertion, deletion and searching. Hashing-hash table representation, hash functions, collision resolution-separate chaining, open addressing-linear probing, quadratic probing, double hashing, rehashing.</p>								
UNIT - II	TREE & PRIORITY QUEUE						CLASSES: 10	
<p>Trees – Terminology, Representation of Trees, Binary tree ADT, Properties of Binary Trees, Binary Tree Representations-array and linked representations, Binary Tree traversals, Threaded binary trees,</p> <p>Priority Queue-ADT-implementation-Max Heap & Min Heap-Definition, Insertion into a Heap, Deletion from a Heap.</p>								
UNIT - III	GRAPHS & SEARCH TREES (PART-I)						CLASSES: 10	
<p>Graphs- Introduction, Definition, Terminology, Graph ADT, Graph Representations- Adjacency matrix, Adjacency lists, Graph traversals- DFS and BFS.</p> <p>Search Trees (Part I) : Binary search trees, definition, ADT, implementation, operations-searching, Insertion and deletion, balanced search trees- AVL trees, definition, height of an AVL tree, representation, operations-insertion and searching.</p>								
UNIT - IV	SEARCH TREES (PART-II)						CLASSES: 10	
<p>Search Trees (Part II) : B-Trees, Definition, B-Tree of order m, height of a B-Tree, insertion, deletion and searching, Comparison of Search Trees. Introduction to Red-Black and Splay Trees(Elementary treatment-only Definitions and Examples), Comparison of Search Trees.</p>								
UNIT - V	TEXT PROCESSING						CLASSES: 08	

Text Processing-Pattern matching algorithms-Brute force, Knuth Morris-Pratt algorithm, Tries-Standard Tries, Compressed Tries, and Suffix tries.

TEXT BOOKS:

1. E. Balagurusamy, "Programming in ANSI C", McGraw Hill Education, 6th Edition, 2012.
2. "Fundamentals of Data Structures", Illustrated Edition by Ellis Horowitz, Sartaj Sahni, Computer Science Press.
3. Data Structures using C, R.Thareja 2nd Edition, Oxford Press.

REFERENCE BOOKS:

1. Algorithms, Data Structures, and Problem Solving with C++", Illustrated Edition by Mark Allen Weiss, Addison-Wesley Publishing Company
2. "How to Solve it by Computer", 2nd Impression by R. G. Dromey, Pearson Education

WEB REFERENCES:

1. <https://hackr.io/tutorials/learn-data-structures-algorithms>
2. <https://www.geeksforgeeks.org/fundamentals-of-algorithms/>
3. <https://www.udemy.com/introduction-to-algorithms-and-data-structures-in-c/>
4. <https://leetcode.com>

E-TEXT BOOKS:

1. <http://www.freetechbooks.com/algorithm-analysis-and-design-t1030.html>
2. <http://www.freetechbooks.com/algorithmic-problem-solving-t373.html>
3. <http://www.freetechbooks.com/algorithms-and-data-structures-the-basic-toolbox-t871.html>

MOOC COURSE

1. <https://www.coursera.org/specializations/data-structures-algorithms>
2. https://onlinecourses.nptel.ac.in/noc16_cs06/preview

ADVANCED DATA STRUCTURES LAB

II B. TECH- II SEMESTER

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P		C	CIE	SEE
A5CS10	PCC	-	-	3	1.5	30	70	100

COURSE OBJECTIVES:

The course should enable the students to:

1. Ability to identify the appropriate data structure for given problem.
2. Effectively use compilers include library functions, debuggers and trouble shooting.
3. Write and execute programs using data structures such as arrays, linked lists to implement stacks, queues.
4. Write and execute programs in C to implement various sorting and searching.

COURSE OUTCOMES:

The course should enable the students to:

1. Use appropriate data structure for given problem.
2. Use compilers include library functions, debuggers and trouble shooting.
3. Execute programs in C to implement Linked List.
4. Execute programs to implement Dictionary and HashTable.
5. Execute programs using data structures such as Trees & Graphs.
6. Execute programs in C to implement text processing algorithms.

LIST OF EXPERIMENTS

WEEK - 1 SINGLE LINKED LIST

Write a C program that uses functions to perform the following:

- a. Create a singly linked list of integers.
- b. Delete a given integer from the above linked list.
- c. Display the contents of the above list after deletion.

WEEK - 2 DICTIONARY

Write a C program to implement Dictionary ADT using Linked List.

WEEK - 3 HASH TABLE

Write a C program to implement Collision Resolution Techniques:

- a. Linear Probing
- b. Chaining

WEEK - 4 BINARY TREES USING RESURSION

Write a C program that uses functions to perform the following:

- a. Create a binary tree of integers
- b. Traverse the above Binary tree recursively in PreOrder, InOrder and PostOrder.

WEEK - 5	BINARY TREES USING NON-RESURSION
Write a C program that uses functions to perform the following: <ul style="list-style-type: none"> a. Create a binary tree of integers. b. Traverse the above Binary tree non-recursively in PreOrder, InOrder and PostOrder. 	
WEEK - 6	PRIORITY QUEUE
<ul style="list-style-type: none"> a. Write a C program to implement Priority Queue ADT b. Write a C Program to sort given list of integers using Heap Sort. 	
WEEK - 7	GRAPH
Write C programs to implement Graph Representations <ul style="list-style-type: none"> a) Adjacency Matrix b) Adjacency List 	
WEEK - 8	GRAPH TRAVERSAL ALGORITHMS
Write C programs for implementing the following graph traversal algorithms: <ul style="list-style-type: none"> a) Depth first traversal b) Breadth first traversal 	
WEEK - 9	BINARY SEARCH TREE USING RESURSION
Write a C program that uses functions to perform the following: <ul style="list-style-type: none"> a. Create a binary tree of integers b. Traverse the above Binary tree recursively in PreOrder, InOrder and PostOrder. 	
WEEK - 10	BINARY SEARCH TREE USING NON-RESURSION
Write a C program that uses functions to perform the following: <ul style="list-style-type: none"> a. Create a binary tree of integers. b. Traverse the above Binary tree non-recursively in PreOrder, InOrder and PostOrder. 	
WEEK - 11	AVL TREE
Write a C program to perform the following operations on AVL: <ul style="list-style-type: none"> a. Insertion into an AVL. b. Display elements of AVL Tree 	
WEEK - 12	TEXT PROCESSING
Write a C Program to implement KMP Algorithm.	
TEXT BOOKS:	
<ol style="list-style-type: none"> 1. C and Data Structures, Prof. P.S.Deshpande and Prof. O.G. Kakde, Dreamtech Press. 2. Data structures using C, A.K.Sharma, 2nd edition, Pearson. 3. Data Structures using C, R.Thareja, Oxford University Press. 	
WEB REFERENCES:	
<ol style="list-style-type: none"> 1. http://www.sanfoundry.com/data-structures-examples 2. http://www.geeksforgeeks.org/c 3. http://www.cs.princeton.edu 	

OBJECT ORIENTED PROGRAMMING LAB

II B. TECH- II SEMESTER

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P		C	CIE	SEE
A5IT02	PCC	-	-	3	1.5	30	70	100

COURSE OBJECTIVES:

1. Practice object-oriented programs and build java applications.
2. Implement java programs for establishing interfaces.
3. Implement sample programs for developing reusable software components.
4. Create database connectivity in java and implement GUI applications.

COURSE OUTCOMES:

1. Implement Object Oriented programming concept using basic syntaxes of control Structures, strings and function for developing skills of logic building activity.
2. Understand the use of different exception handling mechanisms and concept of multithreading for robust and efficient application development.
3. Understand and implement concepts on file streams and operations in java programming for a given application programs.
4. Develop java application to interact with database by using relevant software component (JDBC Driver).

LIST OF EXPERIMENTS

WEEK - 1 JAVA BASICS

- a. Write a java program that prints all real solutions to the quadratic equation $ax^2+bx+c=0$. Read in a, b, c and use the quadratic formula.
- b. The Fibonacci sequence is defined by the following rule. The first two values in the sequence are 1 and 1. Every subsequent value is the sum of the two values preceding it. Write a java program that uses both recursive and non recursive functions.

WEEK - 2 ARRAYS

- a. Write a java program to sort given list of integers in ascending order.
- b. Write a java program to multiply two given matrices.

WEEK - 3 STRINGS

Write a java program to check whether a given string is palindrome.

- a. Write a java program for sorting a given list of names in ascending order.

WEEK - 4 OVERLOADING & OVERRIDING

Write a java program to implement method overloading and constructors overloading.

- a. Write a java program to implement method overriding.

WEEK - 5 INHERITANCE

Write a java program to create an abstract class named Shape that contains two integers and an empty method named print Area (). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contains only the method print Area () that prints the area of the given shape.

WEEK - 6 INTERFACES

- a. Write a program to create interface A in this interface we have two method meth1 and meth2. Implements this interface in another class named MyClass.

b. Write a program to give example for multiple inheritance in Java.	
WEEK - 7	EXCEPTION HANDLING
Write a program that reads two numbers Num1 and Num2. If Num1 and Num2 were not integers, the program would throw a Number Format Exception. If Num2 were zero, the program would throw an Arithmetic Exception Display the exception.	
WEEK - 8	I/O STREAMS
a. Write a java program that reads a file name from the user, and then displays information about whether the file exists, whether the file is readable, whether the file is writable, the type of file and the length of the file in bytes.	
b. Write a java program that displays the number of characters, lines and words in a text file.	
WEEK - 9	MULTI THREADING
Write a java program that implements a multi-thread application that has three threads. First thread generates random integer every 1 second and if the value is even, second thread computes the square of the number and prints. If the value is odd, the third thread will print the value of cube of the number	
WEEK - 10	GENERICS
a. Write a Java program to swap two different types of data using Generics.	
b. Write a Java program to find maximum and minimum of two different types of data using Generics.	
WEEK - 11	COLLECTIONS
Create a linked list of elements.	
a. Delete a given element from the above list.	
b. Display the contents of the list after deletion	
WEEK - 12	CONNECTING TO DATABASE
Write a java program that connects to a database using JDBC and does add, delete, modify and retrieve operations.	
TEXT BOOKS:	
1. P. J. Deitel, H. M. Deitel, "Java for Programmers", Pearson Education, PHI, 4 th Edition, 2007.	
2. P. Radha Krishna, "Object Oriented Programming through Java", Universities Press, 2 nd Edition, 2007	
3. Bruce Eckel, "Thinking in Java", Pearson Education, 4 th Edition, 2006.	
4. Sachin Malhotra, Saurabh Chaudhary, "Programming in Java", Oxford University Press, 5 th Edition, 2010.	

GENDER SENSITIZATION

II B. TECH- II SEMESTER								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
A5HS03	HSMC	L	T	P	C	CIE	SEE	Total
		-	-	2	-	30	70	100
Contact Classes: 16	Tutorial Classes: 0	Practical Classes: 00			Total Classes: 16			
<p>COURSE OBJECTIVES:</p> <ol style="list-style-type: none"> To provide a critical perspective on the socialization of men and women. To introduce students to information about some key biological aspects of genders. To expose the students to debates on the politics and economics of work. To help students reflect critically on gender violence. To expose students to more egalitarian interactions between men and women. <p>COURSE OUTCOMES:</p> <ol style="list-style-type: none"> Develop a better understanding of important issues related to gender in contemporary India. Sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender Attain a finer grasp of how gender discrimination works in our society and how to counter it Men and Women students and professionals will be better equipped to work and live together as equals. reate a sense of appreciation of women in all walks of life. 								
UNIT - I	UNDERSTANDING GENDER						CLASSES: 03	
Introduction: Introduction to Gender, What is Gender, Why should we study it.. Socialization: Making Women, Making Men - Preparing for Womanhood. Growing up Male. First lessons in Caste: Different Masculinities.								
UNIT - II	GENDER ROLES AND RELATIONS						CLASSES: 03	
Two or Many? -Struggles with Discrimination- Missing Women-Sex Selection and Its Consequences Declining Sex Ratio. Demographic Consequences- Gender Spectrum: Beyond the Binary								
UNIT - III	GENDER AND LABOUR						CLASSES: 03	
Valuation of Labour-Housework: The Invisible Labor- "My Mother doesn't Work." "Share the Load."-Work: Its Politics and Economics -Fact and Fiction. Unrecognized and Unaccounted work. Additional Reading: Wages and Conditions of Work.								
UNIT - IV	GENDER - BASED VIOLENCE						CLASSES: 04	
Sexual Harassment: Say No! -Sexual Harassment, not Eve-teasing- Coping with Everyday Harassment- Further Reading: "Chupulu". Domestic Violence: Speaking Out Is Home a Safe Place? -When Women Unite [Film]. Rebuilding Lives. Thinking about Sexual Violence Blaming the Victim-"I Fought for my Life...." Additional Reading: The Caste Face of Violence.								
UNIT - V	GENDER AND COEXISTENCE						CLASSES: 03	
Gender Issues- Just Relationships: Being Together as Equals Mary Kom and Onler. Love and Acid just do not Mix. Love Letters. Mothers and Fathers. Rosa Parks The Brave Heart.								

TEXT BOOKS:

1. All the five Units in the Textbook, "Towards a World of Equals: A Bilingual Textbook on Gender" written by A. Suneetha, Uma Bhrugubanda, Duggirala Vasanta, Rama Melkote, Vasudha Nagaraj, Asma Rasheed, Gogu Shyamala, Deepa Sreenivas and Susie Tharu and published by Telugu Akademi, Hyderabad, Telangana State in the year 2015.

REFERENCE BOOKS:

1. Menon, Nivedita. Seeing like a Feminist. New Delhi: Zubaan-Penguin Books, 2012
2. Abdulali Sohaila. "I Fought For My Life...and Won." Available online at: <http://www.thealternative.in/lifestyle/i-fought-for-my-lifeand-won-sohaila-abdulal/>

WEB REFERENCES:

1. <http://www.thealternative.in/lifestyle/i-fought-for-my-lifeand-won-sohaila-abdulal/>

E-TEXT BOOKS:

1. Abdulali Sohaila. "I Fought For My Life...and Won." Available online at: <http://www.thealternative.in/lifestyle/i-fought-for-my-lifeand-won-sohaila-abdulal/>