

B. Tech. COMPUTER SCIENCE & ENGINEERING 2nd YEAR (SEMESTER – IV)

Choice Based Credit System Scheme of Studies & Examinations w.e.f. 2019-20: applicable to students admitted in 2018

Sl. No.	Course Code	Course Title	Teaching Schedule			Marks of Class work	Examination Marks		Total	Credits	Duration of Exam
			L	T	P		Theory	Practical			
1.	CSE202C	Web & Internet Technologies	3	0	0	25	75	0	100	3	3
2.	CSE204C	Operating Systems	3	0	0	25	75	0	100	3	3
3	CSE206C	Design & Analysis of Algorithms	3	0	0	25	75	0	100	3	3
4	CSE208C	Discrete Mathematics	3	0	0	25	75	0	100	3	3
5	MGT202C	Organizational Behaviour	3	0	0	25	75	0	100	3	3
6	CSE282C	Web & Internet Technologies Lab	0	0	4	25	0	75	100	2	3
7	CSE284C	Operating SystemsLab	0	0	4	25	0	75	100	2	3
8	CSE286C	Design & Analysis of Algorithms Lab	0	0	4	25	0	75	100	2	3
9	MC 203C OR MC 201C	Constitution of India (Gr-B) Environmental Science (Gr-A)	3	0	0	25	75	0	100	0	3
Total			21	00	12	225	450	225	900	21	27

Note: Students will be allowed to use non-programmable scientific calculator. However, sharing of calculators will not be permitted in the examinations

SYLLABUS: B Tech (CSE)

Department: Computer Science & Engineering – 4th Semester

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	-	-	3	25	75	3 hours	100

Subject: WEB & INTERNET TECHNOLOGIES (Theory)

Subject Code: CSE202C

UNIT-I

- Topic no.1: Introduction to the Internet,
- Topic no.2: The world wide web: The idea of hypertext and hyper media;
- Topic no.3: How the web works-HTTP, HTML and URLs;
- Topic no.4 How the browser works-MIME types, plugins and helper applications;
- Topic no.5: The standards-HTML, XML, XHTML and the W3C.
- Topic no.6: Hypertext markup language:
- Topic no.7: The anatomy of an HTML document;
- Topic no.8: Marking up for structure and style: basic page markup,
- Topic no.9: Absolute and relative links, ordered and unordered lists,
- Topic no.10: Embedding images and controlling appearance,
- Topic no.11: Table creation and use, frames, nesting and targeting.
- Topic no.12: Descriptive markup: Meta tags for common tasks,
- Topic no.13: semantic tags for aiding search, the doubling code and RDF.

UNIT-II

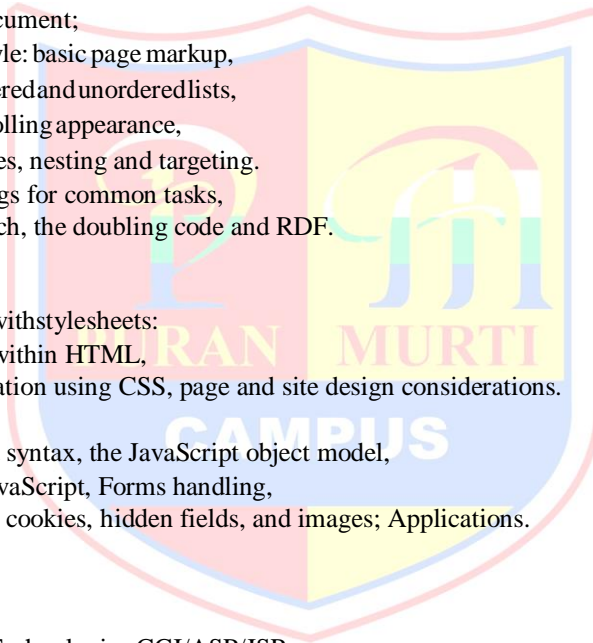
- Topic no.14: Separating style from structure with stylesheets:
- Topic no.15: Internal style specifications within HTML,
- Topic no.16: External linked style specification using CSS, page and site design considerations.
- Client side programming
- Topic no.17: Introduction to the JavaScript syntax, the JavaScript object model,
- Topic no.18: Event handling, Output in JavaScript, Forms handling,
- Topic no.19: Miscellaneous topics such as cookies, hidden fields, and images; Applications.

UNIT-III

- Server side programming:
- Topic no.20: Introduction to Server Side Technologies CGI/ASP/JSP.,
- Topic no.21: Programming languages for server Side Scripting,
- Topic no.22: Configuring the server to support CGI,
- Topic no.23: Applications; Input/ output operations on the WWW,
- Topic no.24: Forms processing, (using PERL/VBSCRIPT/JavaScript)

UNIT-IV

- :Other dynamic content Technologies:
- Topic no.25: Introduction to ASP & JSP,
- Topic no.26: Delivering multimedia over web pages,
- Topic no.27: The VRML idea,
- Topic no.28: The Java phenomenon-applets and servlets,
- Topic no.29: Issues and web development.
- Topic no.30: Introduction to Microsoft .
- Topic no.31: NET Technology and its comparison with the competing Technologies.



TEXT BOOKS:-

1. Beginning XHTML by Frank Boumpery, Cassandra Greer, Dave Raggett, Jenny Raggett, Sebastian Schnitzenbaumer& ted Wugofski, 2000, WROX press (Indian Shroff Publ. SPD) 1st edition
2. Web Technologies By Achyut S Godbole ,AtulKahate, 2003, T.M.H
3. Internet & World Wide Web How to program by P.J Deitel & H.M Deitel,Pearson

REFERENCE BOOKS:-

1. HTML & XHTML: The Definitive Guide by Chuck Musciano, Bill Kennedy, 2000, 4th Edi.
2. XHTML Black Book by Steven Holzner, 2000
3. CGI Programming on the World Wide Web. O'Reilly Associates.
4. Internet and Web Technologies – Raj Kamal, 2002, T.M.H

Note:

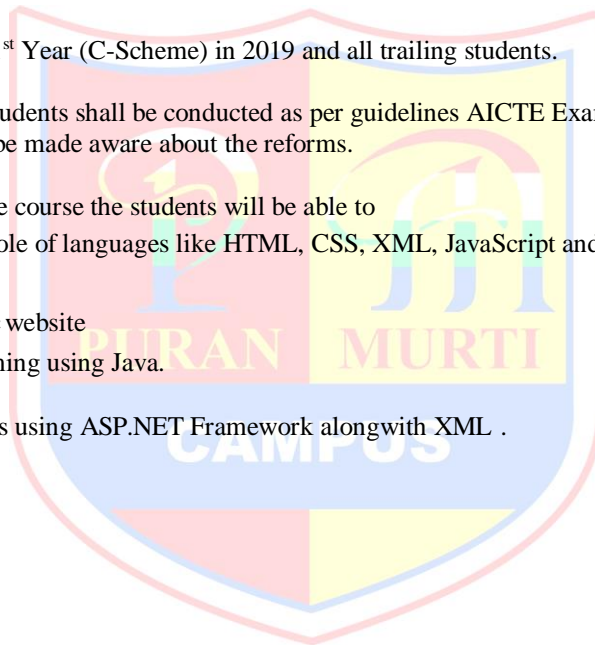
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For student admitted in B. Tech. 1st Year (C-Scheme) in 2019 and all trailing students.

Examinations and evaluation of students shall be conducted as per guidelines AICTE Examinations Reforms covering the entire syllabus. The students shall be made aware about the reforms.

Course Outcomes: Upon completion of the course the students will be able to

1. Understand, analyze and apply the role of languages like HTML, CSS, XML, JavaScript and protocols in the workings of web and web applications.
2. Create a good, effective and dynamic website
3. Understand about network programming using Java.
4. Develop interactive web applications using ASP.NET Framework alongwith XML .



Department: Computer Science & Engineering – 4th Semester

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	-	-	3	25	75	3 hours	100

Subject: Operating system (Theory)

Subject Code: CSE204C

UNIT-I

- Topic no:1: Introduction to Operating System
- Topic no:2:Concepts (including Multitasking, multiprogramming, multi user, Multithreading etc).,
- Topic no:3: Generations of operating systems
- Topic no:4:Types of Operating Systems:
- Topic no:5: Batch operating system, Time-sharing systems, Distributed OS, Network OS, Real Time OS;
- Topic no:6:Various Operating system services, architecture,
- Topic no:7:System programs and calls. Monolithic , microkernel operating systems,
- Topic no:8: Concept of virtual machine
- Topic no:9: Unix System And Windows NT Overview:
- Topic no:10: Unix system call for processes and file system management,
- Topic no:11: Shell interpreter, Windows NT architecture overview, Windows NT file system.

UNIT-II

Process Management

- Topic no:12:Process definition, different states of a process ,
- Topic no:13:Process state transitions, process control box(PCB), context switching
- Topic no:14: Thread: Definition, Various states, Benefits of threads,
- Topic no:15:Types of threads, Concept of multi threads,
- Topic no:16: Process scheduling, Foundation and Scheduling objectives,
- Topic no:17:Types of Schedulers, Scheduling criteria: CPU utilization, Throughput,
- Topic no:18: Turnaround Time, Waiting Time, Response Time;
- Topic no:19:Scheduling algorithms: Pre-emptive and Non pre-emptive, FCFS, SJF, RR;
- Topic no:20:Multiprocessor scheduling: Real Time scheduling: RM and EDF.

UNIT-III

Memory Management:

- Topic no:21: Logical & Physical Address Space,
- Topic no:22: Swapping, contiguous memory allocation,
- Topic no:23: Non-contiguous memory allocation, fixed and variable partitions –
- Topic no:24: Internal and external fragmentation and compaction;
- Topic no:25: Paging : principle of operation- page allocation – page allocation-
- Topic no:26: Hardware support for paging, Protection and sharing disadvantages of paging ,
- Topic no:27 Segmentation techniques, segmentation with paging;
- Topic no:28:Virtual Memory: basic concepts of VM,
- Topic no:29:Management - Demand Paging & Page-Replacement Algorithms; Demand Segmentation.

UNIT-IV

Process-Synchronization & Deadlocks:

- Topic no:30: Critical Section Problems, semaphores;
- Topic no:31:Methods for handling deadlocks-deadlock prevention,
- Topic no:32:Avoidance & detection; deadlock recovery.
- Topic no:33:I/O Systems: I/O Hardware, Application I/O Interface,
- Topic no:34:Kernel, Transforming I/O requests, Performance Issues.
- Topic no:35:File System: Different types of files and their access methods,
- Topic no:36:Directory structures, various allocation methods,
- Topic no:37: Disk scheduling and management and its associated algorithms,
- Topic no:38: Introduction to distributed file system.

TEXT BOOKS:

1. Operating System Concepts by Silberchatz et al, 5th edition, 1998, Addison-Wesley.
2. Modern Operating Systems by A. Tanenbaum, 1992, Prentice-Hall.
3. Operating Systems Internals and Design Principles by William Stallings, 4th edition, 2001, Prentice-Hall

REFERENCE BOOKS :

1. Operating System by Peterson, 1985, AW.
2. Operating System by Milankovic, 1990, TMH.
3. Operating System Incorporating With Unix & Windows By Colin Ritchie, 1974, TMH.
4. Operating Systems by Mandrik & Donovan, TMH
5. Operating Systems – Advanced Concepts By Mukesh Singhal, N.G. Shivaratri, 2003, T.M.H

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Course Outcomes:

After successful completion of the course students will learn the following:-

1. The mechanisms of OS to handle processes and threads and their communication
2. The mechanisms involved in memory management in contemporary OS
3. To gain knowledge on distributed operating system concepts that includes architecture, Mutual exclusion algorithms, deadlock detection algorithms and agreement protocols
4. To know the components and management aspects of concurrency management

Department: Computer Science & Engineering – 4th Semester

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	-	-	3	25	75	3 hours	100

Subject: Design & Analysis of Algorithms
Subject Code: CSE206C
UNIT-I: Introduction:

Topic no.1 Characteristics of algorithm. Analysis of algorithm:
 Topic no.2 Asymptotic analysis of complexity bounds – best, average and worst-case behavior
 Topic no.3: Performance measurements of Algorithm, Time and space trade-offs,
 Topic no.4: Analysis of recursive algorithms through recurrence relations:
 Topic no.5: Substitution method, Recursion tree method and Masters' theorem.

UNIT-II: Fundamental Algorithmic Strategies:

Topic no.6: Brute-Force, Greedy, Dynamic Programming,
 Topic no.7: Branch- and-Bound and Backtracking methodologies for the design of algorithms;
 Topic no.8: Illustrations of these techniques for Problem-Solving ,
 Topic no.9: Bin Packing, Knap Sack TSP.
 Topic no.10: Heuristics-characteristics and their application domains.

UNIT-III: Graph and Tree Algorithms:

Topic no.11: Traversal algorithms: Depth First Search (DFS) and Breadth First Search (BFS);
 Topic no.12: Shortest path algorithms,
 Topic no.13 Transitive closure, Minimum Spanning Tree,
 Topic no.14: Topological sorting,
 Topic no.15: Network Flow Algorithm.

UNIT-IV: Tractable and Intractable Problems:

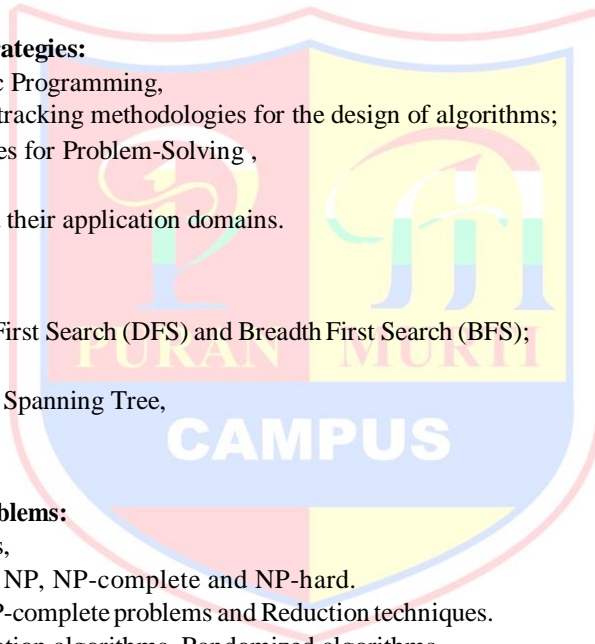
Topic no.16: Computability of Algorithms,
 Topic no.17: Computability classes – P, NP, NP-complete and NP-hard.
 Topic no.18: Cook's theorem, Standard NP-complete problems and Reduction techniques.
 Topic no.19: Advanced Topics: Approximation algorithms, Randomized algorithms,
 Topic no.20: Class of problems beyond NP – P SPACE

TEXT BOOKS:

1. Introduction to Algorithms, 4TH Edition, Thomas H Cormen, MIT Press/McGraw-Hill.
2. Fundamentals of Algorithms – E. Horowitz et al.

REFERENCE BOOKS:

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, MA.



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Course Outcomes:

After successful completion of the course students will learn to :-

1. Analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms.
2. Describe greedy, divide-and-conquer and dynamic-programming paradigm and explain when an algorithmic design situation calls for it. For a given problem develop the algorithms and analyze it to determine its computational complexity.
3. Model a given engineering problem using graph and write the corresponding algorithm to solve the problems.
4. Explain the ways to analyze randomized algorithms(expected running time, probability of error) and Explain what an approximation algorithm is. Compute the approximation factor of an approximation algorithm (PTAS and FPTAS).



SYLLABUS: B Tech (CSE)

Department: Computer Science & Engineering– 4th Semester

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	-	-	3	25	75	3 hours	100

Subject: Discrete Mathematics

Subject Code: Math208C

UNIT-I

Sets, Relation and Function:

- Topic no.1 Operations and Laws of Sets, Size of a Set, Finite and infinite Sets,
 - Topic no.2 Countable and uncountable Sets Cartesian Products,
 - Topic no.3 Disjunctive and Conjunctive Normal Form Binary Relation : representation of relations,
 - Topic no.4 Partial Ordering Relation, Equivalence Relation,
 - Topic no.5 Image of a Set, Function: Sum and Product of Functions,
 - Topic no.6 Bijective functions, Inverse and Composite
- Principles of Mathematical Induction:
- Topic no.7:The Well-Ordering Principle, Recursive definition,
 - Topic no.8:The Division algorithm: Prime Numbers,
 - Topic no.9:The Greatest Common Divisor: Euclidean Algorithm,
 - Topic no.10: The Fundamental Theorem of Arithmetic.

UNIT-II

Basic counting techniques-

- Topic no.11:Inclusion and exclusion, pigeon-hole principle,
 - Topic no.12: permutation and combination.
 - Topic no.13: Introduction to recurrence relations and generating functions.
- Propositional Logic:
- Topic no.14: Syntax, Semantics, Validity and Satisfiability,
 - Topic no.15: Basic Connectives and Truth Tables,
 - Topic no.16: Logical Equivalence: The Laws of Logic,
 - Topic no.17: Logical Implication, Rules of Inference, The use of Quantifiers.
 - Topic no.18: Proof Techniques: Some Terminology, Proof, Methods and Strategies,
 - Topic no.19: Forward Proof, Proof by Contradiction, Proof by Contraposition,
 - Topic no.20: Proof of Necessity and Sufficiency.

UNIT-III

Algebraic Structures and Morphism:

- Topic no.21: Algebraic Structures with one Binary Operation, Semi Groups,
- Topic no.22: Monoids, Groups, Free and Cyclic Monoids and Groups,
- Topic no.23:Permutation Groups, Substructures, Normal Subgroups,
- Topic no.24: Algebraic Structures with two Binary Operation, Rings,
- Topic no.25: Integral Domain and Fields. Boolean algebra and Boolean Ring,
- Topic no.26:Identities of Boolean Algebra, Duality, Representation of Boolean Function,



UNIT-IV

Graphs and Trees:

Topic no.27: Graphs and their properties, Degree,

Topic no.28: Connectivity, Path, Cycle, Sub Graph, Isomorphism,

Topic no.29: Eulerian and Hamiltonian Walks, Graph Colouring,

Topic no.30: Colouring maps and Planar Graphs,

Topic no.31: Colouring Vertices, Colouring Edges, List Colouring,

Topic no.32: Perfect Graph, definition properties and Example,

Topic no.33: Rooted trees, trees and sorting, weighted trees and prefix codes,

Topic no.34 Bi-connected component and Articulation Points, Shortest distances.

TEXT BOOKS:

1. Kenneth H. Rosen, Discrete Mathematics and its Applications, Tata McGraw – Hill
2. Susanna S. Epp, Discrete Mathematics with Applications, 4th edition, Wadsworth Publishing Co. Inc.
3. CL Liu and D P Mohapatra, Elements of Discrete Mathematics A Computer Oriented Approach, 3rd Edition by, Tata McGraw – Hill.

REFERENCE BOOKS:

1. J.P. Tremblay and R. Manohar, Discrete Mathematical Structure and It's Application to Computer Science", TMG Edition, Tata McGraw-Hill
2. Norman L. Biggs, Discrete Mathematics, 2nd Edition, Oxford University Press. Schaum's Outlines Series, Seymour Lipschutz, Marc Lipson,
3. Discrete Mathematics, Tata McGraw -Hill

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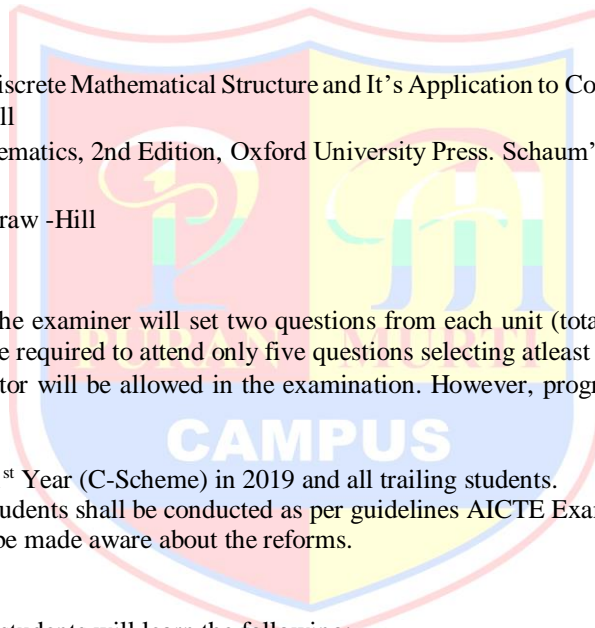
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Course Outcomes:

After successful completion of the course students will learn the following:-

1. For a given logic sentence, express it in terms of predicates, quantifiers, and logical connectives
2. For a given a problem, derive the solution using deductive logic and prove the solution based on logical inference
3. For a given a mathematical problem, classify its algebraic structure and evaluate Boolean functions and simplify expressions using the properties of Boolean algebra.
4. Develop the given problem as graph networks and solve with techniques of graph



Department: Computer Science & Engineering – 4th Semester

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	-	-	3	25	75	3 hours	100

Subject: Organizational Behavior

Subject Code: MGT202C

UNIT-I

Introduction

Topic no.1 Definition and concept of Organizational behaviour,

Topic no.2 Nature and scope of OB, elements of OB, contributing disciplines to OB,

Topic no.3 challenges for OB, evolution of OB.

UNIT-II

Individual processes

Topic no.4: Attitudes, Values; Perception – concept, process and applications;

Topic no.5:Personality -concept, determinants,

Topic no.6: Theories and applications;

Topic no.7: Learning – concept and theories of learning.

UNIT-III

Team processes:

Topic no.8: Motivation – concept and theories of motivation;

Topic no.9:Group behaviour – concept,

Topic no.10: Types of group, group development,

Topic no.11: Group dynamics;

Topic no.12: Teams - types, creating effective teams.

UNIT-IV

Organizational processes and Stress management: organizational structure –

Topic no.13: Elements of organizational structure;

Topic no.14: Organizational change

Topic no.15: Concept, resistance to change,

Topic no.16: Managing resistance to change,

Topic no.17:Lewin’s three- step model of change;

Topic no.18:Stress –sources,

Topic no.19:Consequences and management.

TEXT BOOKS:

1. Robbins Judge and Vohra, Organizational Behaviour, Pearson, New Delhi.
2. Khanka S S, Organizational Behavior, S.Chand& Company Pvt. Ltd., New Delhi.

REFERENCE BOOKS :

1. Greenberg Jerald, Behavior in Organizations, PHI, New Delhi.
2. Parikh and Gupta, Organisational Behaviour, Mc Graw Hill, New Delhi.
3. Pareek Udai, Understanding Organizational Behaviour, Oxford University Press, New Delhi.
4. Aswathappa K., Organisational Behaviour, Himalaya Publishing House, New Delhi.
5. Luthans, F. Organizational Behavior, McGraw Hill Education



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Course Outcomes: On completion of this course, the students will be able to

1. Demonstrate the applicability of the concept of organizational behavior to understand the behavior of people in the organization.
2. Demonstrate the applicability of analyzing the complexities associated with management of individual behavior in the organization.
3. Analyze the complexities associated with management of the group behavior in the organization.
4. Demonstrate how the organizational behavior can integrate in understanding the motivation behind behavior of people in the organization



Department: Computer Science & Engineering – 4th Semester

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
1	-	-	4	25	75	3 hours	100

List of practicals

- 1 A Simple HTML home page provide links to move to other pages like hobbies, educational info, personal info etc.
- 2 A HTML program to illustrate the use of frame and frameset tags of HTML.
- 3 A HTML Program which use a HTML controls to create a student information form to collect student's information like name, address, phone, email, sex, birth date, hobbies etc.
- 4 A HTML Program which demonstrates loops like for loop, do while, while in java script.
- 5 A HTML Program which demonstrates the use of functions in java script.
- 6 A HTML Program which demonstrates various events like on click, on focus, on blur, on change, on mouse over, on mouse over, window event, on load, on unload event.
- 7 A HTML Program to create various functions and subroutines to validate the data entered by user in form. Download
- 8 Create a program to illustrate the concept of associative array in PHP.
- 9 Create PHP program to implement the concept of Session management.
- 10 Create a PHP program to display student information in webpage. Student's data is stored in My SQL database.
11. Create a PHP program to insert student information from HTML form. Student's data is stored in My SQL database.

Note: More exercises based on CSE202C may be given by the teacher

Course Outcomes: After successful completion of the course , the students will be able to :

1. Develop web pages using mark up languages like HTML, DHTML and style sheets for making it more presentable to the user.
2. Develop dynamic web pages using client side programming and server side programming.
3. Develop interactive web applications using ASP.NET Framework.
4. Develop PHP programs for interactive web pages.

Department: Computer Science & Engineering –4th Semester

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
	-	4		25	75	3 hours	100

Subject: Operating Systems Lab**Subject Code: CSE284C**

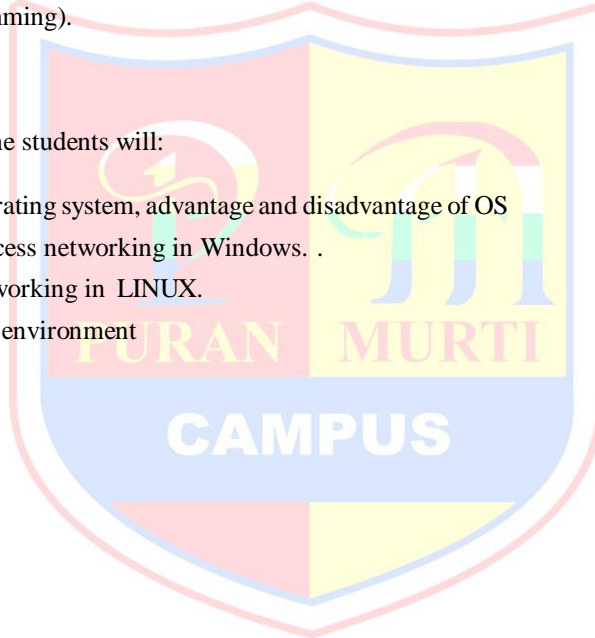
List of Practicals :-

- 1) Study of WINDOWS 2000 Operating System.
- 2) Administration of WINDOWS 2000 (including DNS,LDAP, Directory Services).
- 3) Study of LINUX Operating System (Linux kernel, shell, basic commands pipe & filter commands).
- 4) Administration of LINUX Operating System.
- 5) Writing of Shell Scripts (Shell programming).
- 6) AWK programming.

Course Outcomes:

On successful completion of the course, the students will:

1. Demonstrate the concepts of operating system, advantage and disadvantage of OS
2. Demonstrate the concepts of Process networking in Windows. .
3. Demonstrate the concepts of networking in LINUX.
4. Be able to work in different shell environment



Department: Computer Science & Engineering –4thSemester

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
	-	4		25	75	3 hours	100

Subject: Design & Analysis of Algorithms Lab

Subject Code: CSE286C

List of Programs:

1. Sort a given set of elements using the Quick sort method and determine the time required to sort the elements. Repeat the experiment for different values of n, the number of elements in the list to be sorted and plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator.
2. Implement a parallelized Merge Sort algorithm to sort a given set of elements and determine the time required to sort the elements. Repeat the experiment for different values of n, the number of elements in the list to be sorted and plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator.
3. a. Obtain the Topological ordering of vertices in a given digraph.
- b. Compute the transitive closure of a given directed graph using Warshall's algorithm.
4. Implement 0/1 Knapsack problem using Dynamic Programming.
5. From a given vertex in a weighted connected graph, find shortest paths to other vertices using Dijkstra's algorithm.
6. Find Minimum Cost Spanning Tree of a given undirected graph using Kruskal's algorithm.
7. a. Print all the nodes reachable from a given starting node in a digraph using BFS method.
 b. Check whether a given graph is connected or not using DFS method.
8. Find a subset of a given set $S = \{s_1, s_2, \dots, s_n\}$ of n positive integers whose sum is equal to a given positive integer d. For example, if $S = \{1, 2, 5, 6, 8\}$ and $d = 9$ there are two solutions $\{1, 2, 6\}$ and $\{1, 8\}$. A suitable message is to be displayed if the given problem instance doesn't have a solution.
9. Implement any scheme to find the optimal solution for the Traveling Salesperson problem and then solve the same problem instance using any approximation algorithm and determine the error in the approximation.
10. Find Minimum Cost Spanning Tree of a given undirected graph using Prim's algorithm.
11. Implement All-Pairs Shortest Paths Problem using Floyd's algorithm. Parallelize this algorithm, implement it using Open and determine the speed-up achieved.
12. Implement N Queen's problem using Back Tracking.

Note:

More exercises based on CSE 206-C may be given by the teacher

Course Outcomes: Upon successful completion of the course students will learn:-

1. To develop and code program for the algorithms and analyze it to determine its computational complexity.
2. To identify and analyze worst-case running times of algorithms.
3. To model given engineering problem using graph and write the corresponding algorithm to solve the problems.
4. To Design, develop and implement the specified algorithms for the following problems using C or C++ Language

Department: Computer Science & Engineering –4th Semester

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	100
	-	4		25	75	3 hours	

Subject: Constitution of India (Gr-A) / Environmental Science (Gr-B)

Subject Code: MC201

Course Objectives:

To make students conscious citizens of India and well equip them to explain and understand the importance of constitution of the country

Unit I:

Philosophy of Indian Constitution

Topic no.1 Ideological Basis and Salient Features of Indian Constitution

Topic no.2 Fundamental Rights & Duties of the Citizens

Topic no.3 Directive Principles of State Policy

Unit II:

Nature and Dynamics of Indian Federalism

Topic no.4 Federalism: Theory and Practice in India

Topic no.5 Federal Features of the Indian Constitution

Topic no.6 Legislative, Administrative and Financial Relations between the Union and the States

Unit III:

Union and State Legislature

Topic no.7 Parliament: Composition,

Topic no.8 Functions and Working of the Parliamentary system

Topic no.9 State Legislature

Topic no.10 Composition and Functions of Vidhan Sabha/ Vidhan Parishad

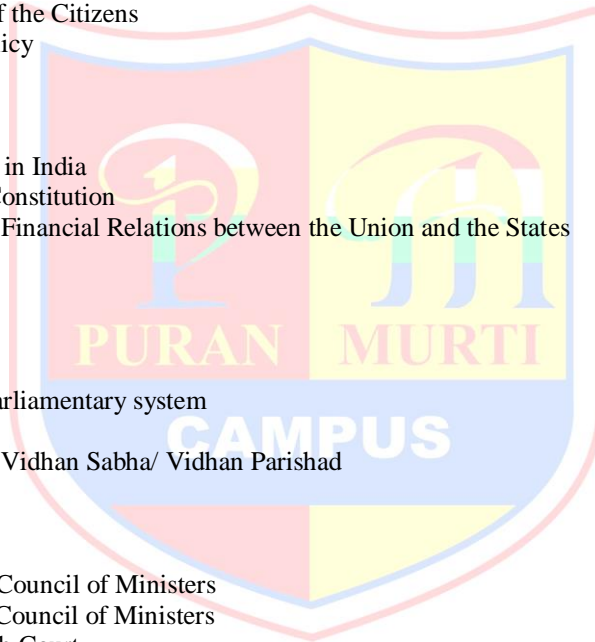
Unit IV:

Centre and State: Executive and Judiciary

Topic no.11 President, Prime Minister and Council of Ministers

Topic no.12 Governor, Chief Minister and Council of Ministers

Topic no.13 Judiciary: Supreme Court; High Court



Course Out comes: At the end of the course students will be able to

1. To understand basic features of the constitution and rights and duties of Indian citizens
2. To understand the basic structure of Centre and State Government
3. To get acquainted with the nature of parliamentary form of Government
4. To have knowledge of the executive and judiciary powers in Indian democratic set-up

Scheme of End Semester Examinations (Major Test):

1. The duration of examinations will be three hours.
2. Nine questions of 15 marks each will be set out of which the students will have to attempt five questions in all.
3. First question of 15 marks will be compulsory. It will cover all the four units of the syllabus. The nature of the questions in each unit will depend upon the nature of content therein. The questions may have sub-parts with marks assigned against each.
4. Question No 02 to 09 of 15 marks each will be set from the four units of the syllabus --- two from each unit.

5. In addition to first compulsory question the students will have to attempt four more questions, selecting one from each unit.

Recommended Readings:

1. Austin G., The Indian Constitution: Corner Stone of a Nation, New Delhi: Oxford University Press, 1966
2. Basu D.D., An Introduction to the Constitution of India, New Delhi: Prentice Hall, 1994
3. Kothari R., Politics in India, New Delhi: Orient Language, 1970
4. Siwach J.R., Dynamics of Indian Government and Politics, New Delhi: Sterling Publishers, 1985
5. Bhambhri C.P., The Indian State--FiftyYears, New Delhi: Shipra, 1997
6. Ghai U.R., IndianPoliticalSystem, Jalandhar: New Academic Publishing Company, 2010

Note:

1. In Semester Examinations, the examiner will set two questions from each unit (total 8 questions in all) covering the entire syllabus. The students will be required to attend only five questions selecting atleast one question from each unit.
2. The use of scientific calculator will be allowed in the examination. However, programmable calculator and cellular phone will not be allowed.

For student admitted in B. Tech. 1st Semester (C-Scheme) in 2019 and all trailing students, Examinations and evaluation of students shall be conducted as per guidelines AICTE Examinations Reforms covering the entire syllabus. The students shall be made aware about the reform





