I YEAR I SEMESTER

S.No	Course Code	Course Title	Hours Per Week			Credits
			L	T	P	
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		Total Credits	[illegible]	[illegible]	[illegible]	[illegible]

ORDINARY DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS

B.Tech. I Year II Sem. L T/P/C
4 1/4

Pre-requisites: Mathematical Knowledge at pre-university level

Course Objectives: To learn

1. Methods of solving the differential equations of first order.
2. Methods of solving the differential equations of higher order.
3. Concept, properties of Laplace transforms. Solving ordinary differential equations using Laplace transform techniques.
4. The physical quantities involved in engineering field related to vector valued functions.
5. The basic properties of vector valued functions and their applications to line, surface and volume integrals.

Course Outcomes: After learning the contents of this paper the student must be able to

1. Identify whether the given differential equation of first order is exact or not.
2. Solve higher differential equations and apply the concept of differential equation to real world problems.
3. Use the Laplace transforms techniques for solving ODE's.
4. Evaluate the line, surface and volume integrals.
5. Convert the line, surface and volume integrals from one to another.

Unit I: First Order ODE

Exact differential equations, Equations reducible to exact differential equations, Linear and Bernoulli's equations, Orthogonal Trajectories, Newton's Law of Cooling, Law of natural growth and decay.

Unit II: Ordinary Differential Equations of Higher Order

Second order linear differential equations with constant coefficients, Non-homogeneous terms of the type e^{ax}, $\sin ax$, $\cos ax$, polynomials in x, $e^{ax}V(x)$ and $xV(x)$, method of variation of parameters, Equations reducible to linear ODE with constant coefficients, Equations of the form $x^2y'' + pxy' + qy = f(x)$, Cauchy-Euler equation, Applications: Electrical Circuits.

Unit III: Laplace transforms

Laplace Transforms, Laplace Transforms of standard functions, First shifting theorem, Second shifting theorem, Unit step function, Dirac delta function, Laplace transforms of functions when they are multiplied and divided by t, Laplace transforms of derivatives and integrals of functions, Evaluation of integrals by Laplace transforms, Laplace transform of periodic functions, Inverse Laplace transforms by different methods, convolution theorem (without proof), Applications: solving initial value problems by Laplace transform method.

Unit IV: Vector Differentiation

Vector point functions and scalar point functions, Gradient, Divergence and Curl, Directional derivatives, Tangent plane and normal line, Vector Identities, Scalar potential functions, Solenoidal and Irrotational vectors.

Unit V: Vector Integration

Line, Surface and Volume Integrals. Theorems of Gauss, Green and Stokes (without proofs) and their applications.

Text Books:

1. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 44th Edition, 2018.
2. B.S. Jain and S.R.K. Iyengar, Advanced Engineering Mathematics, Narosa Publications, 5th Edition, 2016.

Reference Books:

1. Erwin Kreyszig, Advanced Engineering Mathematics, 9th Edition, John Wiley & Sons, 2006.
2. G.B. Thomas and R.L. Finney, Calculus and Analytic geometry, 9th Edition, Pearson, Reprint, 2002.
3. H. K. Dass and Er. Rajnish Verma, Higher Engineering Mathematics, S. Chand and Company Limited, New Delhi.
4. N.P. Bali and Manish Goyal, A text book of Engineering Mathematics, Laxmi Publications, Reprint, 2008.

ENGINEERING CHEMISTRY

B.Tech. (Year II Sem.) L T P C
3 1 0 4

Course Objectives:

1. To bring awareness to new developments in Engineering Chemistry and to acquire the skills required to become a perfect engineer.
2. To know the importance of water and its treatment in domestic and industrial usage.
3. To acquire fundamental aspects of Corrosion chemistry, Applications of corrosion for control to protect the structures.
4. To gain knowledge in the preparation and engineering applications of materials like polymers, cement, wood materials, Lubricants etc.,
5. To acquire required knowledge on the basic concepts of petroleum and its products.

Course Outcomes:

1. They can predict potential applications of chemistry and practical ability in order to become good engineers and entrepreneurs.
2. The students are able to understand the basic requirements of water and its usage in domestic and industrial purposes.
3. Students will acquire the basic knowledge of battery technology and electrochemical procedures related to corrosion and its control.
4. They can learn the fundamentals and general properties of polymers and other engineering materials.
5. Students will be able to understand the mechanism of combustion for solving problems related to combustion.

Unit-I: Water and its treatment

Introduction to hardness of water – Indication of hardness of water by complexometric method and related numerical problems. Potable water and its specifications. Steps involved in the treatment of potable water – Disinfection of potable water by chlorination and break – point chlorination. Defluoridation

– Determination of P^H use by ion selective electrode method.

Boiler troubles: Sludge, Scales and Caustic embrittlement. Internal treatment of Boiler feed water – Colloidal conditioning – Phosphate conditioning – Calgon conditioning. External treatment methods – Softening of water by ion exchange processes. Desalination of water – Reverse osmosis.

Unit-II: Battery Chemistry & Corrosion

Introduction – Classification of batteries: primary, secondary and reserve batteries with examples. Basic requirements for commercial batteries. Construction, working and applications of Zn-air and Lithium ion batteries. Applications of Lithium battery in electrical vehicles. Fuel Cells: Difference between conventional cell and fuel cell. Classification and applications of Hydrogen-Oxygen fuel cell and Solid oxide fuel cell. Introduction and applications of Solar cells.

Corrosion: Causes and effects of corrosion – Theories of chemical and electrochemical corrosion – mechanism of electrochemical corrosion. Types of corrosion: Galvanic, water line and pitting corrosion. Factors affecting rate of corrosion. Corrosion control methods: Cathodic protection – Sacrificial anode and Impressed Current methods.

Unit- III Polymeric materials

Introduction – Classification of polymers with examples – Types of polymerization – addition (free radical addition) and condensation polymerization with examples – Nylon 6/6, Terylene, Plastics: Definition and characteristics – thermoplastic and thermosetting plastics. Preparation, Properties and engineering applications of PVC and Bakelite. Teflon, Fiber reinforced plastics (FRP). **Rubbers:** Natural rubber and its vulcanization.

Elastomers: Characteristics, preparation – properties and applications of Buna-S, Buna-N and Thiokol rubbers.

Conducting polymers: Characteristics and Classification with examples – mechanism of conduction in trans-polyacetylene and applications of conducting polymers

Biodegradable polymers: Concept and advantages – Polylactic acid and poly vinyl alcohol and their applications.

Unit- IV Energy Sources

Introduction, Calorific value of fuel – HCV, LCV, Dulong's formula and Numerical. Classification of solid fuels, coal – analysis of coal – proximate and ultimate analysis and their significances. Liquid fuels – petroleum and its refining, cracking types – moving bed catalytic cracking. Knocking – octane and cetane rating, synthetic petrol – Bergius process. Gaseous fuels – composition and uses of natural gas, LPG and CNG. Biodiesel – Transesterification, advantages. Combustion – Calculation of air quantities (Theoretical).

Unit- V Engineering Materials

Cements: Portland cement, its composition, setting and hardening.

Smart materials and their engineering applications:

Shape memory materials: Nitinol, Piezoelectric materials, Polyacrylonitrile (PAN) and its applications.

Lubricants: Classification of lubricants with examples. Characteristics of a good lubricant – viscosity and viscosity index (Dash Pot, Redwood and Saybolt viscometers), principles of lubrication – viscous, boundary, fluid film, hydrodynamic and thin film.

Text Books:

1. Engineering Chemistry by P.C. Jain and M. Jain, Dhanpat rai Publishing Company, 2015
2. Engineering Chemistry by Suma Tirth, Venkata Ramana Reddy and Vani, Cengage learning, 2015
3. A text book of Engineering Chemistry by M. Thirumala Chary, E. Laxminarayana and K. Sheshikala, Pearson Publications, 2021
4. Textbook of Engineering Chemistry by Jaya Shree Anireddy, Wiley Publications.

Reference Books:

1. Engineering Chemistry by Shikha Agarwal, Cambridge University Press, Delhi (2015)
2. Engineering Chemistry by Shashi Chawla, Dhanpat rai and Company (P) Ltd, Delhi (2015)

(DIPLOMA IN MECHANICAL ENGINEERING)

II Semester

L T P/C
1 0 4 3

Course Objectives:

- To develop the ability of visualization of different objects through technical drawings
- To acquire computer drafting skill for communication of concepts, ideas in the design engineering profession

Course Outcomes: At the end of the course, the student will be able to:

- Apply computer aided drafting tools to create 2D and 3D objects
- sketch curves and different types of solids
- Appreciate the need of the latest issues of safety and Development of working models
- Read and interpret engineering drawings
- Conversion of orthographic projections to isometric views and vice versa manually and by using computer aided drafting

Unit I: Introduction to Engineering Graphics

Introduction to Engineering Graphics: Principles of Engineering Graphics and their Significance, Scales – Plain & Diagonal Scales. Curves used in Engineering Practice: Conic Sections by the Eccentricity Method – General method only. Cycloid, Epicycloid and Hypocycloid, Introduction to Computer aided drafting – views, commands and errors

Unit II: Orthographic Projections

Orthographic Projections: Principles of Orthographic Projections – Conventions – Projections of Points and Lines, Projections of Plane regular geometric figures. Auxiliary Planes. Computer aided orthographic projections – points, lines and planes

Unit III: Projections of Regular Solids

Projections of Regular Solids – Auxiliary Views – Sections or Sectional views of Right Regular Solids – Prism, Cylinder, Pyramid, Cone – Auxiliary views. Computer aided projections of solids – sectional views

Unit IV: Development of Surfaces of Right Regular Solids

Development of Surfaces of Right Regular Solids – Prism, Cylinder, Pyramid and Cone. Development of surfaces using computer aided drafting

Unit V: Isometric Projections

Principles of Isometric Projection – Isometric Scale – Isometric Views – Conventions – Isometric Views of Lines, Plane Figures, Simple and Compound Solids – Isometric Projections of objects having non-isometric lines. Isometric Projection of Spherical Parts. Conversion of Isometric Views to Orthographic Views and Vice-versa –Conventions. Conversion of orthographic views to isometric views using computer aided drafting.

Text Books:

1. Engineering Drawing N.D. Bhatt / Charotar
2. Engineering Drawing and Graphics Using AutoCAD Third Edition, T. Jeyapoovan, Vikas Publishing House Pvt. Ltd.

Reference Books:

1. Engineering Drawing, Sawant Agarwal and C.M. Agarwal, Third Edition McGraw Hill
2. Engineering Graphics and Design, WILEY, Edition 2020
3. Engineering Drawing, N. D. Bhatt, B.C. Kane / Charotar
4. Engineering Drawing, N. S. Parthasarathy and Vela Murali, Oxford
5. Computer Aided Engineering Drawing, K Balaveera Reddy et al. CBS Publishers

Note: - External examination to conducted in conventional mode and internal evaluation to be done by both conventional as well as using computer aided drafting.

BASIC ELECTRICAL ENGINEERING

B.Tech. I Year II Sem.

L T P C
3 1 0 4

Prerequisites: (Mathematics)

Course Objectives:

- To understand DC and Single & Three phase AC circuits
- To study and understand the different types of DC, AC machines and Transformers.
- To impart the knowledge of various electrical installations and the concept of power, power factor and its improvement.

Course Outcomes: After learning the contents of this paper the student should be able to

- Understand and analyze basic Electrical circuits
- Study the working principles of Electrical Machines and Transformers
- Describe the components of Low Voltage Electrical installations
-

Course Objectives	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
To understand DC and Single & Three phase AC circuits	3	3	3		3	0	0	1	2	0	3	3
To study and understand the different types of DC, AC machines and Transformers	3	3	3	3	3	0	0	2	2	0	3	3
To impart the knowledge of various electrical installations and the concept of power, power factor and its improvement	3	3	0		3	0	0	1	2	0	3	3

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Understand and analyze basic Electrical circuits	3	3	3	0	3	0	0	0	2	0	3	3
Study the working principles of Electrical Machines and Transformers	3	3	3	0	3	3	0	2	2	0	3	3
Describe the components of Low Voltage Electrical Installations	3	3	3	3	3	0	0	0	2	0	3	3

Unit-I D.C Circuits

D.C Circuits: Electrical circuit elements (R, L and C), voltage and current sources, KVL&KCL, analysis of simple circuits with dc excitation. Superposition, Thevenin's and Norton's Theorems. Time domain analysis of first order RL and RC circuits

Unit-II A.C Circuits

A.C. Circuits: Representation of sinusoidal waveforms, peak and rms values, phasor representation, real power, reactive power, apparent power, power factor. Analysis of single phase ac circuits consisting of R, L, C, RL, RC, RLC combinations (series and parallel), resonance in series RLC circuit. Three phase balanced circuits, voltage and current relations in star and delta connections.

Unit- III Transformers

Transformers: Ideal and practical transformer, equivalent circuit, losses in transformers, regulation and efficiency. Auto transformer and three phase transformer connections.

Unit- IV Electrical Machines

Electrical Machines: Construction and working principle of dc machine, performance characteristics of dc shunt machine, Generation of rotating magnetic field, Construction and working of a three phase induction motor, Significance of torque-slip characteristic. Single-phase induction motor, Construction and working, Construction and working of synchronous generator.

Unit- V Electrical Machines

Electrical Installations: Components of LT Switchgear: Switch Fuse Unit (SFU), MCB, ELCB, MCCB, Types of Wires and Cables, Earthing, Types of Batteries, Important Characteristics for Batteries. Elementary calculations for energy consumption, power factor improvement and battery backup.

TEXT BOOKS:

1. D.P. Kothari and I.J. Nagrath, "Basic Electrical Engineering", Tata McGraw Hill, 4th Edition, 2014
2. DC Kulshreshtha, "Basic Electrical Engineering", McGraw Hill, 1st Edition, 2009

REFERENCE BOOKS:

1. P. Ravindra, M. Surendrakumar, G. S. Chandrasekhar, "Basic Electrical Engineering", S. Chand, 4th Edition, 2015.
2. D.C. Kulshreshtha, "Basic Electrical Engineering", McGraw Hill, 2009
3. M. S. Naidu, S. V. Kamakshaiah, "Basic Electrical and Electronics Engineering", (Volume), 1st Edition, 2011.
4. Abhijit Chakrabarti, Sudipta Debnath, Chandan Kumar Chanda, "Basic Electrical Engineering", 2nd Edition, McGraw Hill, 2021
5. L.S. Bobrow, "Fundamentals of Electrical Engineering", Oxford University Press, 2011.
6. E. Hughes, "Electrical and Electronic Technology", Pearson, 2010.
7. V.D. Toro, "Electrical Engineering Fundamentals", Prentice Hall India, 1989

DIGITAL ELECTRONICS

[illegible] Year B.Tech.

[illegible]
[illegible]

Course Objectives:

This course aims at through understanding of binary number system, logic gates, combinational logic and its minimization and sequential logic.

Unit I BOOLEAN ALGEBRA AND LOGIC GATES

Digital Systems, Binary Numbers, Number base conversions, Octal and Hexadecimal Numbers, complements, Signed binary numbers, Binary codes, Binary Storage and Registers, Binary logic, Basic Definitions, Axiomatic definition of Boolean Algebra, Basic theorems and properties of Boolean algebra, Boolean functions, canonical and standard forms, other logic operations, Digital logic gates.

Unit II GATE - LEVEL MINIMIZATION

The map method, Four-variable map, Five-Variable map, product of sums simplification, Don't-care conditions, NAND and NOR implementation, other Two-level implementations, Exclusive - OR functions.

Unit III COMBINATIONAL LOGIC

Combinational Circuits, Analysis procedure, Design procedure, Binary multiplier, Magnitude Comparator, Decoders, Encoders, Multiplexers, HDL for combinational circuits.

Unit IV SEQUENTIAL LOGIC

Sequential circuits, Latches, Flip-Flops, Analysis of clocked sequential circuits, state Reduction and Assignment, Design Procedure, Registers, shift Registers, Ripple counters, synchronous counters, other counters.

Unit V MEMORY AND ASYNCHRONOUS SEQUENTIAL LOGIC

Introduction, Random-Access Memory, Memory Decoding, Error Detection and correction, Read-only memory, Programmable logic Array, programmable Array logic, Sequential Programmable Devices, Introduction, Analysis Procedure, Circuits with Latches, Design Procedure.

Text Books:

1. Digital Design - Third Edition, M. Morris Mano, Pearson Education/PHI.
2. Digital Principles and Applications, Albert Paul Malvino, Donald P. Leach, TATA McGraw Hill Edition.
3. Fundamentals of Logic Design, Sixth Edition, Thomson.

Reference Books:

1. Switching and Finite Automata Theory, by Zvi Kohavi, Tata McGraw Hill.
2. Switching and Logic Design, C.V.S. Rao, Pearson Education.
3. Digital Principles and Design - Donald D.Givone, Tata McGraw Hill, Edition.
4. Fundamentals of Digital Logic and Microcomputer Design, 5th Edition, M. Rafiquzzaman, John Wiley.

ENGINEERING CHEMISTRY LABORATORY

B.Tech. / Year II Sem. L T P C
0 0 2 1

Course Objectives:

The course consists of experiments related to the principles of chemistry required to engineering students. The students will learn:

- Estimation of hardness of water to check its suitability for drinking purpose
- Students are able to perform estimations of acids and bases using conductometric, potentiometric and pH metric methods
- Students will learn to prepare polymers such as Thiokol rubber and nylon-6 in the laboratory
- Students will learn skills related to the lubricant properties such as viscosity of oils
- Students will learn the causes of corrosion in metals like mild steel.

Course Outcomes: The experiments will make the students gain skills on

- Determination of parameters like hardness of water and rate of corrosion of mild steel in various conditions.
- Ability to perform methods such as conductometry, potentiometry and pH metry in order to find out the concentrations or equivalence points of acids and bases.
- Students are able to prepare polymers like bakelite and nylon-6.
- Applications saponification value, Acid no. Iodine and viscosity of lubricant oils.

List of Experiments:

i. Volumetric Analysis: Estimation of Hardness of water by EDTA (Complexometric method)

ii. Conductometry: Estimation of the concentration of an acid by Conductometry

iii. Potentiometry: Estimation of the concentration of Fe by Potentiometry

iv. pH Metry: Determination of an acid concentration using pH meter

v. Preparations:

1. Preparation of Bakelite

2. Preparation Nylon – 6

vi. Lubricants:

1. Estimation of acid value of given lubricant oil.

2. Estimation of Viscosity of lubricant oil using Ostwald's Viscometer

vii. Corrosion: Determination of rate of corrosion of mild steel in the presence and absence of inhibitors

viii. Virtual Lab experiments:

1. Construction of Fuel cell and its working.
2. Smart materials for Biomedical applications
3. Batteries for electrical vehicles.
4. Functioning of solar cell and its applications.

Reference Books:

1. Lab manual for Engineering chemistry by B. Sreedhar and P. Aparna, N.Gopal Publications, New Delhi (2022)
2. Vogel's text book of practical organic chemistry 5th edition
3. Inorganic Quantitative analysis by A.I. Vogel, ELBS Publications
4. College Practical Chemistry by V.K. Ahluwalia, Universities Publications (P) Ltd. New Delhi (2005)

[illegible]

[illegible] Year B.Tech.

[illegible]
[illegible]

Prerequisites: Basic Electrical Engineering

Course Objectives:

- To measure the electrical parameters for different types of DC and AC circuits using conventional and electronic approach
- To study the transient response of basic series R, L and C circuits using different excitations
- To determine the performance of different types of DC, AC machines and Transformers

Course Outcomes: After learning the contents of this paper the student must be able to

- Verify the basic Electrical circuits laws and different experiments
- Evaluate the performance calculations of Electrical Machines and Transformers through various testing methods
- Analyze the transient responses of R, L and C circuits for different input conditions

Course Objectives	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
To measure the electrical parameters for different types of DC and AC circuits using conventional and Electronic approach	3	2	2		2	0	0	2	2	3	2	2
To study the transient responses of basic series R, L and C circuits using different excitations	3	2	2	2	2	0	0	0	2	3	2	2
To determine the performance of different types of DC, AC machines and Transformers	3	2	2		2	0	0	0	2	3	2	2

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Verify electrical Circuits and different experiments	3	2	2	3	2	0	0	2	2	3	2	2
Evaluate the performance calculations of Electrical Machines and Transformers through various testing methods	3	2	2	3	3	2	0	2	2	3	2	2
Analyze the transient responses of R, L and C circuits for different input conditions	3	2	2	2	3	2	0	2	2	3	2	2

List of experiments/ demonstrations:

PART- A (compulsory)

1. Verification of KVL and KCL
2. Verification of Thevenin's and Norton's theorem
3. Transient Response of Series RL and RC circuits for DC excitation
4. Resonance in series RLC circuit.
5. Calculation and Verification of Impedance and Current of RL, RC and RLC series circuits
6. Measurement of Voltage, Current and Real Power in primary and Secondary Circuits of a Single Phase Transformer
7. Performance Characteristics of a DC Shunt Motor
8. Load test on a Three phase Induction Motor.

PART-B (any two experiments from the given list)

1. Verification of Superposition theorem.
2. Three Phase Transformer: Verification of Relationship between Voltages and Currents (Star-Delta, Delta-Delta, Delta-star, Star-Star)
3. Load Test on Single Phase Transformer (Calculate Efficiency and Regulation)
4. Measurement of Active and Reactive Power in a balanced Three phase circuit.
5. No Load Characteristics of a Three phase Alternator

TEXT BOOKS:

1. D.P. Kothari and I. J. Nagrath, "Basic Electrical Engineering", Tata McGraw Hill, 4th Edition, 2019
2. M. Vasdev and S. Ganesh Kumar, "Basic Electrical Engineering", Tata McGraw Hill, 3rd Edition, 2018

REFERENCE BOOKS:

1. P. Ramana, M. Suryakalavathi, G.T. Chandrashekhar, "Basic Electrical Engineering", S. Chand, 2nd Edition, 2019
2. D.C. Kulshreshtha, "Basic Electrical Engineering", McGraw Hill, 2009
3. M. S. Naidu, S. V. Kamakshaiah, "Basic Electrical and Electronics Engineering", I.K. International, 2012
4. Abhijit Chakrabarthy, Sudipta Debnath, Chandan Kumar Chanda, "Basic Electrical Engineering", 3rd Edition, McGraw Hill, 2021
5. L. S. Bobrow, "Fundamentals of Electrical Engineering", Oxford University Press, 2011
6. V. Hughes, "Electrical and Electronics Technology", Pearson, 2019

PYTHON PROGRAMMING LABORATORY

B.E (odd) / Hour/Week.

I.T P.C.
PAGE:

Course Objectives:

- To introduce and teach the Python scripting
- To learn control structures
- To Understand Lists, Dictionaries in python
- To Handle strings and Files in Python

Course Outcomes: After completion of the course, the student should be able to

- Develop the applications specific codes using python
- Understand the strings, Lists, Tuples and Dictionaries in Python
- Modify programs using modular approach like OOP, Python standard library
- Implement Digital Systems using Python

Note: The lab experiments will be like the following experiments examples

Week -1

1. a) Use a web browser to go to the Python website http://www.python.org. This page contains information about Python and links to Python-related pages, and it gives you the ability to search the Python documentation.

b) Start the Python interpreter and type help() to start the online help utility.

2. Start a Python interpreter and use it as a Calculator.
   a) Write a program to calculate compound interest when the principal, rate and number of periods are given.
   b) Given coordinates (x1, y1) (x2, y2) find the distance between two points
3. Read name, address, email and phone number of a person through keyboard and print the details

Week - 2

1. Print the below triangle using
   for loop.
   *
   * *
   * * *
   * * * *
   * * * * *
2. Write a program to check whether the given input is digit or lowercase character or uppercase character or a special character (use 'if-else-if' ladder)
3. Python Program to Print the Fibonacci sequence using while loop
4. Python program to print all prime numbers in a given interval (use break)

Week - 3

1. a) Write a program to convert a list and tuple in two ways.
   b) Write a program to find common values between two lists in two ways.
2. Write a function called gcd that takes parameters a and b and returns their greatest common divisor.
3. Write a function called palindrome that takes a string argument and returns True if it is a palindrome and False otherwise. Remember that you can use the built-in function len to check the length of a string.

Week - 6

1. Write a function called is_sorted that takes a list as a parameter and returns True if the list is sorted in ascending order and False otherwise.
2. Write a function called has_duplicates that takes a list and returns True if there is any element that appears more than once. It should not modify the original list.

   i) Write a function called remove_duplicates that takes a list and returns a new list with only the unique elements from the original. Hint: they don't have to be in the same order.

   ii) The wordlist I provided, words.txt, doesn't contain single letter words. So you might want to add "I", "a", and the empty string.

   iii) Write a python code to read dictionary values from the user. Construct a function to accept dictionary (i.e. keys should be values and values should be keys.

3. i) Add a comma between the characters if the given word is 'Apple' it should become 'A,p,p,l,e'

   ii) Reverse the given word in all the places in a string?

   iii) Write a function that takes a sentence as an input parameter and capitalizes the first letter of every word while the corresponding upper case letters and the rest of the letters in the word by corresponding letters in lower case without using a built-in function?

4. Write a recursive function that generates all binary strings of a n-bit length.

Week - 7

1. i) Write a python program that defines a matrix and prints

   ii) Write a python program to perform addition of two square matrices

   iii) Write a python program to perform multiplication of two square matrices

2. How do you create a module? Give an example of construction of a module using different parameters and operations as how to do functions.
3. Use the structure of exception handling all general purpose exceptions

Week-8

1. a. Write a function called draw_rectangle that takes a Canvas and a Rectangle as arguments and draws a representation of the Rectangle on the Canvas.

   b. Add an attribute named color to your Rectangle objects and modify draw_rectangle so that uses the color attribute as the fill color.

   c. Write a function called draw_point that takes a Canvas and a Point as arguments and draws a representation of the Point on the Canvas.

   d. Define a new class called Circle with appropriate attributes and instantiate a few Circle objects. Write a function called draw_circle that draws circles on the canvas.

2. Write a Python program to demonstrate the usage of Method Resolution Order (MRO) in multiple levels of inheritance.
3. Write a python code to read a phone number and email-id from the user and validate it for correctness.

Week- 9

1. Write a Python code to merge two given file contents into a third file.
2. Write a Python code to open a given file and construct a histogram that gives a count of how many times each word appears in it. Store the histogram in a dictionary and display it on the screen.
3. Write a Python code to read text from a text file, find the word with most number of occurrences.
4. Write a function that reads a file file1 and displays the number of words, number of vowels, blankspaces, lower case letters and uppercase letters.

Week - 8

1. Install numpy, Pandas and matplotlib and explore their functionalities
2. Install SciPy packages with pip and explore it
3. Write a program to implement Digital Logic Gates - AND, OR, NOT, XOR, NOR
4. Write a program to implement Half Adder, Full Adder, Full Subtractor and Parallel Adder
5. Write a GUI program to create a window with two text labels, two text fields and two pushbuttons labeled Add and Clear.

TEXT BOOKS:

1. Supercharged Python: Take your scripts to the next level, 1st edition
2. Learning Python, 4th Edition, O'Reilly

REFERENCE BOOKS:

1. Python Programming: A Modern Approach, Vamis Publications, Pearson
2. Python Programming: A Modular Approach with Graphics, Database, Mobile, and Web Applications, Sheetal Taneja, Sreenivas Kumar, Pearson
3. Programming with Python, A User's Book, Michael Dawson, Cengage Learning, India Edition
4. Think Python, Allen Downey, Green Tea Press
5. Core Python Programming, W. Chun, Pearson
6. Introduction to Python, Kenneth A. Lambert, Cengage

IT WORKSHOP

B.Tech. I Year II Sem. L T P C

0 0 2 1

Course Objectives: The IT Workshop for engineers is a training lab course spread over 40 hours. The modules include training on PC Hardware, Internet & World Wide Web and Productivity tools including Word, Excel, PowerPoint and Publisher.

Course Outcomes:

- Perform Hardware troubleshooting
- Understand Hardware components and inter dependencies
- Safeguard computer systems from viruses/worms
- Document/ Presentation preparation
- Perform calculations using spreadsheets

PC Hardware

Task 1: Identify the peripherals of a computer, components in a CPU and its functions. Draw the block diagram of the CPU along with the configuration of each peripheral and submit to your instructor.

Task 2: Every student should disassemble and assemble the PC back to working condition. Lab instructors should verify the work and follow it up with a Viva. Also students need to go through the video which shows the process of assembling a PC. A video would be given as part of the course content.

Task 3: Every student should individually install MS windows on the personal computer. Lab instructor should verify the installation and follow it up with a Viva.

Task 4: Every student should install Linux on the computer. This computer should have windows installed. The system should be configured as dual boot with both Windows and Linux. Lab instructors should verify the installation and follow it up with a Viva

Internet & World Wide Web

Task1: Orientation & Connectivity Boot Camp: Students should get connected to their Local Area Network and access the Internet. In the process they configure the TCP/IP setting. Finally students should demonstrate, to the instructor, how to access the websites and email. If there is

LaTeX and WORD

Task 1 – Word Orientation: The mentor needs to give an overview of LaTeX and Microsoft (MS) office or equivalent (FOSS) tool word: Importance of LaTeX and MS office or equivalent (FOSS) tool Word as word Processors, Details of the four tasks and features that would be covered in each, Using LaTeX

and word – Accessing, overview of toolbars, saving files, Using help and resources, rulers, format painter in word.

Task 2: Using LaTeX and Word to create a project certificate. Features to be covered:- Formatting Fonts in word, Drop Cap in word, Applying Text effects, Using Character Spacing, Borders and Colors, Inserting Header and Footer, Using Date and Time option in both LaTeX and Word.

Task 3: Creating project abstract Features to be covered:-Formatting Styles, Inserting table, Bullets and Numbering, Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check, Track Changes.

Task 4: Creating a Newsletter: Features to be covered: Table of Contents, Newspaper columns, Images from clips and clipart, Drawing toolbar and Word Art, Formatting Images, Textboxes, Paragraphs and Word Margins in word.

Excel :

Excel Orientation: The learner needs to: Identify the components of MS-Office or equivalent (OOo) and Excel as a Spreadsheet tool, give the details of the Commands and features that would be covered in each, Taking Excel – the training environment as facilities are improved time, Taking Safety and awareness.
Task 1: Creating a Spreadsheet – Features to be covered: Guidelines, Practical Lists, Formulae and fill, Formatting Text

Task 2: Calculating LPA : Features to be covered: Cell Referencing, Formulae in excel – average, std. deviation, Charts, Referencing and Naming worksheets, Hyperlinking, Count functions, VLOOKUP, HLOOKUP
Task 3: Split cells, freeze panes, groups and outlines, Sorting, Borders and Logical operators, Conditional formatting

Power point:

Task 1: Handouts will be working on basic power point activities and tools which help them create basic presentation presentations. MS Orientation, Slide Layouts, Inserting Text, Word Art, Formatting Text, Bullets and Numbering, Auto Shapes, Elevated Arrowcon, PowerPoint

Task 2: Interactive presentations – Hyperlinks, Inserting – Images, Clip Art, Audio, Video, Objects, Tables and Charts

Task 3: Master Layouts (slide, templates, and notes), Types of Views (basic, presentation, slide sorter, notes etc), and Inserting – Header and, footers etc, Design Templates, Slideshow slides.

REFERENCE BOOKS:

1. Computer Information Technology: a complete text (All Other Courses, MS), IT Department
2. The Complete Computer upgrade and repair book, 3rd edition (Excel, a Network), PHI/IT Department
3. Introduction to Information Technology, ITL Education Solutions Limited, Pearson Education
4. PC Hardware – A Handbook – Kate J. Chase PHI (Microsoft)
5. LaTeX Companion – Leslie Lamport, PHI/Pearson
6. IT Essentials PC Hardware and Software Companion Guide Third Edition By David Anfinrud and Bill Quinnies – CISCO Press, Pearson Education
7. IT Essentials PC Hardware and Software Lab and Study Guide Third Edition by Patrick Regan – CISCO Press, Pearson Education

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S.No.	Course Code	Course Title	L	T	P	Credits
1		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3		Database Management Systems	[illegible]	[illegible]	[illegible]	[illegible]
4		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5		Object Oriented Programming through Java	[illegible]	[illegible]	[illegible]	[illegible]
6		Database Management Systems Lab	[illegible]	[illegible]	[illegible]	[illegible]
7		Java Programming Lab	[illegible]	[illegible]	[illegible]	[illegible]
8		Internship/ Research Project/ Field Based Research Project	[illegible]	[illegible]	[illegible]	[illegible]
9		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		Total	14	[illegible]	11	[illegible]

DISCRETE MATHEMATICS

B.Tech. II Year I Sem.

L	T	P	C
3	0	0	3

Course Objectives:

- Introduces the elementary discrete mathematics for computer science and engineering.
- Topics include formal logic notation, methods of proof, induction, sets, relations, algebraic structures, elementary graph theory, permutations and combinations, counting principles; recurrence relations and generating functions.

Course Outcomes:

- Ability to understand and construct precise mathematical proofs
- Ability to use logic and set theory to formulate precise statements
- Ability to analyze and solve counting problems on finite and discrete structures
- Ability to describe and manipulate sequences
- Ability to apply graph theory in solving computing problems

UNIT - I

Mathematical logic: Introduction, Statements and Notation, Connectives, Normal Forms, Theory of Inference for the Statement Calculus, The Predicate Calculus, Inference Theory of the Predicate Calculus.

UNIT - II

Set theory: Introduction, Basic Concepts of Set Theory, Representation of Discrete Structures, Relations and Ordering, Functions.

UNIT - III

Algebraic Structures: Introduction, Algebraic Systems, Semi groups and Monoids, Lattices as Partially Ordered Sets, Boolean Algebra.

UNIT - IV

Elementary Combinatorics: Basis of Counting, Combinations and Permutations, Enumeration of Combinations and Permutations, Enumerating Combinations and Permutations with Repetitions, Enumerating Permutation with Constrained Repetitions, Binomial Coefficient, The Binomial and Multinomial Theorems, The Principle of Exclusion.

UNIT - V

Graph Theory: Basic Concepts, Isomorphism and Subgraphs, Trees and their Properties, Spanning Trees, Directed Trees, Binary Trees, Planar Graphs, Euler's Formula, Multi-graphs and Euler Circuits, Hamiltonian Graphs, Chromatic Numbers, The Four Color Problem.

TEXT BOOKS:

1. Discrete Mathematical Structures with Applications to Computer Science: J.P. Tremblay, R. Manohar, McGraw Hill. 1st ed.
2. Discrete Mathematics for Computer Scientists & Mathematicians: Joe l. Mott, Abraham Kandel, Teodore P. Baker, Prentis Hall of India, 2nd ed.

REFERENCE BOOKS:

1. Discrete and Combinatorial Mathematics - an applied introduction: Ralph.P. Grimald, Pearson education, 5th edition.
2. Discrete Mathematical Structures: Thomas Koshy, Tata McGraw Hill publishing co.

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B. Tech. II Year II Sem. L T P C

3 0 0 3

Prerequisites: Nil

Course Objectives:

- To introduce the fundamental concepts of formal languages, grammars and automata theory.
- To understand deterministic and non deterministic machines and the differences between deterministic and non-deterministic.
- Knowledge on the basic concepts of recognition and languages and design and construct the knowledge of equivalence of NFA and PDA and Turing machines.
- Topics include aspects of computer science, decision theory, natural language processing, computer vision, machine learning, and other fields dealing with agent behavior. Deterministic model, agent model.

Course Outcomes:

- Able to understand the basic concepts of formal languages and automata theory.
- Able to design automata for given language and to differentiate between deterministic and non-deterministic machines.
- Able to identify the differences between decidability and undecidability.
- Able to design context free grammars for formal languages.
- Able to design Turing machines to solve problems.

UNIT – I

Introduction to Finite Automata: Structural Representations, Automata and Complexity, the Central Concepts of Automata Theory – Alphabets, Strings, Languages, Problems.

Nondeterministic Finite Automata: Formal Definition, an application, Text search, Finite Automata with Epsilon Transitions.

Deterministic Finite Automata: Definition of DFA, How a DFA Process Strings, The Language of DFA, Conversion of NFA with ε-transitions to NFA without ε-transitions, Conversion of NFA to DFA.

UNIT – II

Regular Expressions: Finite Automata and Regular Expressions, Applications of Regular Expressions, Algebraic Laws for Regular Expressions, Conversion of Finite Automata to Regular Expressions.

Pumping Lemma for Regular Languages: Statement of the pumping lemma, Applications of the Pumping Lemma.

Context-Free Grammars: Definition of Context-Free Grammars, Derivations Using a Grammar, Leftmost and Rightmost Derivations, Parse Trees, Ambiguity in Grammars and Languages.

UNIT – III

Push Down Automata: Definition of the Pushdown Automata, the Languages of a PDA, Equivalence of PDA's and CFG's, Acceptance by final state.

Turing Machines: Introduction to Turing Machine, Formal Description, Instantaneous description, The language of a Turing machine.

Decidability: Undecidability, A Language that is Not Recursively Enumerable, An Undecidable Problem That is RE, Undecidable Problems about Turing Machines.

UNIT – IV

Introduction: The structure of a compiler.

Lexical Analysis: The Role of the Lexical Analyzer, Input Buffering, Recognition of Tokens, The Lexical Analyzer Generator Lex.

Syntax Analysis: Introduction, Context-Free Grammars, Writing a Grammar, Top-Down Parsing, Bottom-Up Parsing, Introduction to LR Parsing: Simple LR, More Powerful LR Parsers.

UNIT - V

Syntax-Directed Translation: Syntax-Directed Definitions, Evaluation Orders for SDDs, Syntax-Directed Translation Schemes, Implementing L-Attributed SDDs.

Intermediate Code Generation: Variants of Syntax Trees, Three Address Code.

Run Time Environments: Stack Allocation of Space, Access to Nonlocal Data on the Stack, Heap Management.

TEXT BOOKS:

1. Introduction to Automata Theory, Languages, and Computation, 3rd Edition, John E. Hopcroft, Rajeev Motwani, Jeffrey D. Ullman, Pearson Education.
2. Theory of Computer Science – Automata languages and computation, Mishra and Chandrashekaran, 2nd Edition, PHI.

REFERENCE BOOKS:

1. Compilers: Principles, Techniques and Tools, Alfred V. Aho, Monica S. Lam, Ravi Sethi, Jeffrey D. Ullman, 2nd Edition, Pearson.
2. Introduction to Formal Languages Automata Theory and Computation, Kamala Krithivasan, Rama R, Pearson.
3. Introduction to Languages and The Theory of Computation, John C Martin, TMH.
4. lex & yacc – John R. Levine, Tony Mason, Doug Brown, O'reilly. Compiler Construction, Kenneth C. Louden, Thomson. Course Technology.

[illegible] MANAGEMENT SYSTEMS

[illegible] Hours per Week: Theory L T P C 3 0 0 3

Prerequisites: [illegible] Data Structures

Course Objectives

- To understand the basic concepts and the application of database systems
- To master the basics of SQL and construct queries using SQL
- To become familiar with database design, entity-relationship model, relational algebra, normalization, indexing, security, object-oriented and special purpose databases

Course Outcomes

- Gain knowledge of fundamentals of DBMS, database design and application interfaces
- Master the basics of SQL and develop queries using SQL
- Be acquainted with the basics of transaction processing and concurrency control
- Familiarize with database design tools such as E-R model, normalization

UNIT - I

Database System Applications: A Historical Perspective, File Systems versus a DBMS, the Data Model, Levels of Abstraction in a DBMS, Data Independence, Structure of a DBMS

Introduction to Database Design: Database Design and ER Diagrams, Entities, Attributes, and Entity Sets, Relationships and Relationship Sets, Additional Features of the ER Model, Conceptual Design With the ER Model

UNIT - II

Introduction to the Relational Model: Integrity constraints over relations, enforcing integrity constraints, querying relational data, logical database design: mapping ER model to relational model, destroying/altering tables and views.

Relational Algebra: Syntax, semantics of the operators, extended operators

UNIT - III

SQL: QUERIES, CONSTRAINTS, TRIGGERS: form of basic SQL query, UNION, INTERSECT, and EXCEPT, Nested Queries, aggregation operators, NULL values, complex integrity constraints in SQL, triggers and active databases.

Schema Refinement: Problems caused by redundancy, decompositions, problems related to decomposition, reasoning about functional dependencies, First, Second, Third normal forms, BCNF, lossless-join decomposition, multivalued dependencies, Fourth normal form, Fifth normal form

UNIT - IV

Transaction Concept, Transaction State, Implementation of Atomicity and Durability, Concurrent Executions, Serializability, Recoverability, Implementation of Isolation, Testing for serializability, Lock Based Protocols, Timestamp Based Protocols, Validation Based Protocol, Multiple Granularity, Recovery and Atomicity, Log-Based Recovery, Recovery with Concurrent Transactions

UNIT - V

Data on External Storage: File Organization and Indexing, Cluster Indexes, Primary and Secondary Indexes, Index data Structures, Hash Based Indexing, Tree based Indexing, Comparison of File Organizations, Indexes, Overview for Implementing, Indexed Sequential Access Methods (ISAM), [illegible]

TEXT BOOKS

1. Database System Concepts, Silberschatz, Korth, McGraw-hill, V edition. [illegible]

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REFERENCE BOOKS:

1. [illegible]
2. [illegible]
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B.Tech. (I Year) & (II Sem.)

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Prerequisite: Knowledge on Data Structures

Course Objectives

- To learn the distinction between optimal reasoning Vs optimal behavior
- To understand the concepts of state space representation, exhaustive search, heuristic search together with the time and space complexities
- To learn different knowledge representation techniques
- To understand the applications of AI, namely game playing, theorem proving, and machine learning

Course Outcomes

- Learn the distinction between optimal reasoning Vs optimal rule reasoning and formulate an efficient problem space for a problem expressed in natural language. Also select a search algorithm for optimality and estimate the time and space complexities
- Apply, for a given problem, the suitable search algorithm (uninformed or informed)
- Learn different knowledge representation techniques
- Understand the concepts of state space representation, exhaustive search, heuristic search together with the time and space complexities
- Comprehend the applications of Probabilistic Reasoning and Bayesian Reasoning
- Analyze Expert Systems and Learning Decision Trees

UNIT –I

Introduction to AI: Intelligent Agents, Problem Solving Agents.

Searching for Solutions: Uninformed search Strategies, Informed search strategies, Local search and Optimization Problems, Adversarial search, Constraint Satisfaction Problems.

UNIT-II

Logics: Knowledge Representation, First Order Logic, Inference in First Order Logics, Forward Chaining, Backward Chaining, Resolution, Logic Programming.

UNIT-III

Planning: Definition of Classical Planning, Algorithms for Planning with State-Space Search, Planning Graphs, other Classical Planning Approaches, Analysis of Planning Approaches, Hierarchical Planning.

UNIT-IV

Probabilistic Reasoning

Acting under Uncertainty: Basic Probability Notation, Review: Probability, Inference using Full Joint Distributions, Independence, Bayes' Rule and Its Use, Probabilistic Reasoning, Representing Knowledge in an Uncertain Domain, The Semantics of Bayesian Networks, Efficient

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TEXT BOOK

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REFERENCE BOOKS

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B.Tech II Year II Sem

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Course Objectives

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Course Outcomes

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UNIT - I

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UNIT - III

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UNIT – V

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DATABASE MANAGEMENT SYSTEMS LAB

B.Tech. II Year II Sem. L T P C
0 0 2 1

Prerequisites: "Database Management Systems"

Course Objectives:

- Introduce ER data model, database design and normalization
- Learn SQL basics for data definition and data manipulation

Course Outcomes:

- Design database schema for a given application and apply normalization
- Acquire skills in using SQL commands for data definition and data manipulation.
- Develop solutions for database applications using procedures, cursors and triggers

List of Experiments:

1. Concept design with E-R Model
2. Relational Model
3. Normalization
4. Practicing DDL commands
5. Practicing DML commands
6. A. Querying (using ANY, ALL, UNION, INTERSECT, JOIN, Constraints etc.)
   B. Nested, Correlated subqueries
7. Queries using Aggregate functions, GROUP BY, HAVING and Creation and dropping of Views.
8. Triggers (Creation of insert trigger, delete trigger, update trigger)
9. Procedures
10. Usage of Cursors

TEXT BOOKS:

1. Database Management Systems, Raghurama Krishnan, Johannes Gehrke, Tata Mc Graw Hill, 3rd Edition
2. Database System Concepts, Silberschatz, Korth, McGraw Hill, V edition.

REFERENCE BOOKS:

1. Database Systems design, Implementation, and Management, Peter Rob & Carlos Coronel 7th Edition.
2. Fundamentals of Database Systems, Elmasri Navrate, Pearson Education
3. Introduction to Database Systems, C.J. Date, Pearson Education
4. Oracle for Professionals, The X Team, S. Shah and V. Shah, SPD.
5. Database Systems Using Oracle: A Simplified guide to SQL and PL/SQL, Shah, PHI.
6. Fundamentals of Database Management Systems, M. L. Gillenson, Wiley Student Edition.

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List of Programs:

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   D. [illegible]
   E. [illegible]

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3. Write a program to [illegible]

4. WAP to [illegible]

5. Write a program to [illegible]

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7. Write a program to [illegible]

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Examples:

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REFERENCE BOOK:

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[illegible] SEMESTER

Sl. No.	Course Code	Course Title	L	T	P	Credits
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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B.Tech. (IT Year II Sem.) [illegible]

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Course Objectives:

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Course Outcomes:

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UNIT - I

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UNIT - V

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Text Books:

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Prerequisites:

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Course Objectives:

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Course Outcomes:

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UNIT- I

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UNIT- V

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TEXT BOOKS:

1. [illegible]

REFERENCE BOOKS:

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Prerequisite(s)
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Course Objectives
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Course Outcomes
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TEXT BOOK(S)
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TEXT BOOKS:

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REFERENCE BOOKS:

1. [illegible]
2. The Robotics primer, Maja J Mataric, MIT Press [illegible]
3. [illegible]

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Course Objectives:

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Course Outcomes:

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UNIT - I

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UNIT - V

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TEXT BOOKS:

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[illegible] DATA ANALYTICS LAB

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L T P C
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Course Objectives:

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Course Outcomes:

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List of Experiments:

1. Data Preprocessing
   a. [illegible]
   b. [illegible]
   c. [illegible]
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TEXT BOOKS:

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REFERENCE BOOKS:

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NATURAL LANGUAGE PROCESSING LAB

[illegible]

L T P C

[illegible]

Prerequisites

1. [illegible]

Course Objectives

- [illegible]

Course Outcomes

- [illegible]
- [illegible]
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List of Experiments

1. [illegible]
   a) [illegible] b) [illegible]
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   a) [illegible]
   b) [illegible]
   c) [illegible]
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TEXT BOOKS:

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REFERENCE BOOKS:

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UNIT - I

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UNIT - II

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UNIT - III

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UNIT - IV

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UNIT - V

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TEXT BOOKS

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REFERENCE BOOKS

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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Programme name

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Course Objectives

- [illegible]
- [illegible]
- [illegible]

Course Outcomes

- [illegible]
- [illegible]
- [illegible]

UNIT- I

[illegible]

UNIT- II

[illegible]

UNIT- III

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UNIT- IV

[illegible]

UNIT- V

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TEXT BOOK(S)

1. [illegible]

REFERENCE BOOK(S)

1. [illegible]
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UNIT - I

[illegible]

UNIT - II

[illegible]

UNIT - III

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UNIT - IV

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UNIT - V

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[illegible]

Course Objectives

- [illegible]
- [illegible]

Course Outcomes

- [illegible]
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UNIT I

[illegible]

UNIT II

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UNIT III

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UNIT IV

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UNIT V

[illegible]

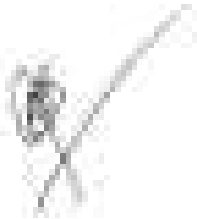
Arabic Text Practice of Secure Text Reading and Voice Tracking, Arabic Template, Arabic Handwriting

Text Exercise

1. Implementing Reading Procedures & Practical Text Interpretation Techniques in Educational Environments (1st Edition). [Publication Info Illegible].
2. Voice Reading Exercises (1st Edition). [Publication Info Illegible], [Year Illegible].

Bibliography (Illegible)

1. [Illegible] (Illegible Publication Info).
2. [Illegible] (Illegible Publication Info).
3. [Illegible] (Illegible Publication Info).
4. [Illegible] (Illegible Publication Info).
5. [Illegible] (Illegible Publication Info).
6. [Illegible] (Illegible Publication Info).



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B.Tech. IV Year I Sem.

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Course Objectives:

- Give an Overview of information security
- Give an overview of Access control of relational databases

Course Outcomes: Students should be able to

- Understand the Web architecture and applications
- Understand client side and service side programming
- Understand how common mistakes can be bypassed and exploit the application
- Identify common application vulnerabilities

UNIT - I

The Web Security, The Web Security Problem, Risk Analysis and Best Practices. Cryptography and the Web: Cryptography and Web Security, Working Cryptographic Systems and Protocols, Legal Restrictions on Cryptography, Digital Identification

UNIT - II

The Web's War on Your Privacy, Privacy-Protecting Techniques, Backups and Antitheft, Web Server Security, Physical Security for Servers, Host Security for Servers, Securing Web Applications

UNIT - III

Database Security: Recent Advances in Access Control, Access Control Models for XML, Database Issues in Trust Management and Trust Negotiation, Security in Data Warehouses and OLAP Systems

UNIT - IV

Security Re-engineering for Databases: Concepts and Techniques, Database Watermarking for Copyright Protection, Trustworthy Records Retention, Damage Quarantine and Recovery in Data Processing Systems, Hippocratic Databases: Current Capabilities and

UNIT - V

Future Trends Privacy in Database Publishing: A Bayesian Perspective, Privacy-enhanced Location-based Access Control, Efficiently Enforcing the Security and Privacy Policies in a Mobile Environment

TEXT BOOKS:

1. Web Security, Privacy and Commerce Simson GArfinkel, Gene Spafford, O'Reilly.
2. Handbook on Database security applications and trends Michael Gertz, Sushil Jajodia

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Prerequisites

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2. [redacted]
3. [redacted]

Course Objectives

1. [redacted]
2. [redacted]
3. [redacted]

Course Outcomes

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2. [redacted]
3. [redacted]

UNIT - I

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UNIT - II

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UNIT - III

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UNIT - IV

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UNIT - V

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TEXT BOOKS

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REFERENCE BOOKS

1. [redacted]
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B.Tech IV Year II Sem

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Course Objectives:

1. [illegible]

Course Outcomes:

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2. [illegible]
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UNIT I

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UNIT III

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UNIT V

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Text Book(s):

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Reference Book(s):

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UNIT I

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Prerequisites: [illegible]

Course Objectives:

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Course Outcomes:

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UNIT I

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TEXT BOOKS

1. [illegible]

REFERENCE BOOKS

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B. Tech. (IT Year / Sem) [illegible]

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Course Objectives:

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Course Outcomes:

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UNIT-I [illegible]

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UNIT-II [illegible]

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UNIT-III [illegible]

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UNIT-IV [illegible]

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UNIT-V [illegible]

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TEXT BOOKS:

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REFERENCE BOOKS:

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B.Tech. V Year II Sem. L T P C
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Prerequisites: [illegible]

Course Objectives:

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Course Outcomes:

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2. [illegible]
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4. [illegible]

UNIT-I

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UNIT-II

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UNIT-III

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UNIT-IV

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UNIT-V

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