Course Outcomes (COs)

and Mapping with

Program Outcomes (POs)

("2", "1" and "blank" indicate strong (above40%) moderate (below 40%) and no correlation respectively.)

Program Outcomes (POs):B. Tech-Computer Science and Engineering: I, II, III & IV years

B. Tech I Semester I

Subject Name:- Engineering Physics ; Subject Code:- KAS101T

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO1. To solve the classical and wave mechanics problems.	1	2	1	2		1						1
CO2. To develop the understanding of laws of thermodynamics and their application in various processes.2	2	1	1	1	2	1						
CO3. To formulate and solve the engineering problems on Electromagnetism & Electromagnetic Field Theory.	2	1				1						
CO4. To aware of limits of classical physics & to apply the ideas in solving the problems in their parent streams.	2	2		2				1		1		

Subject Name:- Engineering Mathematics-I; Subject Code:- KAS103T

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO1. Remember the concept of matrices and apply for solving linear Simultaneous equations.	2	2	2	2	2	2	2		2	1	2	2
CO2. Understand the concept of limit , continuity and differentiability and apply in the study of Rolle,s , Lagrange,s and Cauchy mean value theorem and Leibnitz theorems.	2	2	1	2	1		1					2
CO3. Identify the application of partial differentiation and apply for evaluating maxima, minima, series and Jacobians.	2	2	2	2	1		1				2	2
CO4. Illustrate the working methods of multiple integral and apply for finding area, volume, centre of mass and centre of gravity.	2	2	1	1		1	1				2	2
CO5. Remember the concept of vector and apply for directional derivatives, tangent and normal planes. Also evaluate line, surfaceand volume integrals.	2	1	1		1		1				1	1

Subject Name:- Basic Electrical Engineering; Subject Code:- KEE101T												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Apply the concepts of KVL/KCL and network theorems in solving DC circuits.	2	2	2			1						2
CO2. Analyze the steady state behavior of single phase and three phase AC electrical circuits.	2	2	2									
CO3. Identify the application areas of a single phase two winding transformer as well as an auto transformer and calculate their efficiency. Also identify the connections of a three phase transformer.	2	1		2	1							2
CO4. Illustrate the working principles of induction motor, synchronous machine as well as DC machine and employ them in different area of applications.	2	1	2			1						
CO5. Describe the components of low voltage electrical installations and perform elementary calculations for energy consumption.	2	1		2								1
Subject Name:- Programming for Problem Solving; Subject Code:- KCS101T												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. To develop simple algorithms for arithmetic and logical problems.	2	2	2						2		1	2
CO2. To translate the algorithms to programs & execution (in C language).	2	2	2						2		1	2
CO3. To implement conditional branching, iteration and recursion.	2	2	2						2			
CO4. To decompose a problem into functions and synthesize a complete program using divide and conquer approach.	2	2	2						2			
CO5. To use arrays, pointers and structures to develop algorithms and programs.	2	2	2						2			2

Subject Name:- Engineering Physics Lab; Subject Code:- KAS151P												
Courese Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. To determine the wavelength of sodium light by Newton‟s ring	1	2	1	2		1				1		1

experiment.												
CO2. To determine the wavelength of sodium light with the help of Fresnel‟s bi-prism.	2	1	1	1	2	1			1			
CO3. To determine the variation of magnetic field with the distance along the axis of a current carrying coil and estimate the radius of the coil.	2	1				1						
CO4. To draw hysteresis (B-H curve) of a specimen in the form of a transformer and to determine its hysteresis loss.	2	2		2				1		1		

Subject Name:- Basic Electrical Engineering Lab; Subject Code:- KEE151P

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Conduct experiments illustrating the application of KVL/KCL and network theorems to DC electrical circuits.	1	2	2			1		1				2
CO2. Demonstrate the behavior of AC circuits connected to single phase AC supply and measure power in single phase as well as three phase electrical circuits.	2	2	1									
CO3. Perform experiment illustrating BH curve of magnetic materials.	2	1		2	1							2
CO4. Calculate efficiency of a single phase transformer and DC machine.	2	1	2			1						
CO5. Perform experiments on speed measurement and reversal of direction of three phase induction motor and Identify the type of DC and AC machines based on their construction.	2	1		2								1

Subject Name:- Programming for Problem Solving Lab; Subject Code:- KCS151P

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Able to implement the algorithms and draw flowcharts for solvingMathematical and Engineering problems.	2	2	2	1	2	1			2			2
CO2. Demonstrate an understanding of computer programming language concepts.	2	2	2		2				2			2
CO3. Ability to design and develop	2	2	2	1	2	1			2			2

Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage.												
CO4. Able to define data types and use them in simple data processing applications also he/she must be able to use theconcept of array of structures.	2	2	2	2	2				2			2
CO5. Develop confidence for self education and ability for life-longlearning needed for Computer language.	2	2	2					2	2		1	2

Subject Name:- Engineering Graphics and Design Lab ; Subject Code:- KCE151P

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO1. Understanding of the visual aspects of engineering design.	2				2	1				2		1
CO2. Understanding of engineering graphics standards and solid modeling.	2	2			1							
CO3. Effective communication through graphics.	2	2			1					2		
CO4. Applying modern engineering tools necessary for engineering practice.	2	2			2							
CO5. Appling computer-aided geometric design.	2	2	2							2		
CO6. Analysis of Isometric views.	2	2								2		1
CO7. Creating working drawings.	2		2							2		2

Subject Name:- AI For Engineering ; Subject Code:- KMC101

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO1. Understand the evolution and various approaches of AI.	2	2	2	2	1						1	2
CO2. Understand data storage, processing, visualization, and its usein regression, clustering etc.	2		1		2					2	1	
CO3. Understand natural language processing and chatbots.	2	2	2									1
CO4. Understand the concepts of neural networks.	2		1		2					1		
CO5. Understand the concepts of face, object, speech recognition andRobots.	2	2										1

Subject Name:- Soft Skills-I ; Subject Code:- KNC101												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Students will be enabled to understand the correct usage of grammar.	2	2	2	2	1						2	2
CO2. Students will apply the fundamental inputs of communication skills in making speech delivery, individual conference, and group communication.	2		1		2		1			2	1	
CO3. Students will evaluate the impact of interpersonal communication on their performance as a professional and in obtaining professional excellence at the workplace.	2	2	2				2					1
CO4. Skills and techniques of persuasion and negotiation would enhance the level of students at multifarious administrative and managerial platforms.	2		1		2					1		
CO5. Student will be able to equip with basics of communication skills and will apply it for practical and oral purposes by being honed up in presentation skills and voice-dynamics.	2	2					2					1

B. Tech I Semester II												
Subject Name:- Engineering Chemistry ; Subject Code:- KAS202T												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Use of different analytical instruments.	2	2		2	2	2	2	2		2	1	2
CO2. Measure molecular/ system properties such as surface tension, viscosity, conductance of solution, chloride and iron content in water.	2	1	1					2	2		1	2
CO3. Measure hardness of water.	2	2	2	2	2	2		1	2	2	2	2
CO4. Estimate the rate constant of reaction.	2	1	2	2				2		1	1	1

Subject Name:- Engineering Mathematics-II ; Subject Code:- KAS203T												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. The effective mathematical tools for the solutions of differential equations that model physical processes.	2	2	2	2	2	2	2		2	2	2	2
CO2. To apply integral calculus in various field of engineering. Apart from some other applications students will have a basic understanding of Beta and Gamma functions.	2	2	2								2	2
CO3. The tool of Fourier series for learning advanced Engineering Mathematics.	2	2	2								2	2
CO4. The tools of differentiation of functions of complex variables that are used in various techniques dealing with engineering problems.	2	2	2		2						2	2
CO5. The tools of integration of functions of complex variables that are used in various techniques dealing with engineering problems.	2	2	2		2						2	2

Subject Name:- Emerging Domain in Electronics Engineering ; Subject Code:- KEC201T												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Understand the concept of PN Junction and devices	2	2	1									
CO2. Understand the concept of BJT, FET and MOFET.	2	2										
CO3. Understand the concept of Operational amplifier	2	2	2						1			
CO4. Understand the concept of measurement instrument.	2	2			1							
CO5. Understand the working principle of different type of sensor and their uses.	2	2										
CO6. Understand the concept of IoT system & Understand the component of IoT system.	2	2			2					2		
Subject Name:- Fundamentals of Mechanical Engineering and Mechatronics; Subject Code:- KME201T												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**

CO1. Understand the concept of stress and strain, factor of safety, beams.	2	2		2		2				2		1
CO2. Understand the basic component and working of internal combustion engines, electric and hybrid vehicles, refrigerator and heat pump, air conditioning.	2	2		2	2	1	1		1			2
CO3. Understand fluid properties, conservation laws, hydraulic machinery used in real life.	2			2		2				2		1
CO4. Understand the working principle of different measuring instrument with the knowledge of accuracy, error and calibration, limit, fit, tolerance and control system.	2	2		2	2	2			1			2
CO5. Understand concept of mechatronics with their advantages, scope and Industrial application, the different types of mechanical actuation system, the different types of hydraulic and pneumatic systems.	2	2	2	2	1	2			1			1
CO6. Apply concepts of strength of material for safe design, refrigeration for calculation of COP, concepts of fluid mechanics in real life.	2	2	2			1				1		1

Subject Name:- Engineering Chemistry Lab ; Subject Code:- KAS252P

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Use of different analytical instruments.	2	2				2		1	2	2	2	2
CO2. Measure molecular/system properties such as surface tension, viscosity etc.	2		2		1	2		1	2			
CO3. Measure conductance of solution, chloride and iron content in water, hardness of water.	2		2		2	2		2			2	
CO4. Estimate the rate constant of reaction.	2	2	1		1	2	2	1	2		2	2

Subject Name:- Electronics Engineering Lab ; Subject Code:- KEC251P

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Distinguish between analog and digital systems.		2			1					1		
CO2. Identify the various digital ICs and understand their operation.		2		1			2		1			
CO3. Apply Boolean laws to simplify the digital circuits.		2		2								

CO4. Design simple logic circuits.		2					1				1	
Subject Name:- English Language Lab ; Subject Code:- KAS254P												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. To facilitate software based learning to provide the required English Language proficiency to students.		2		1			2	1				2
CO2. To acquaint students with specific dimensions of communication skills i.e. Reading,Writing, Listening, Thinking and Speaking.							2	1				2
CO3. To train students to use the correct and error-free writing by being well versed in rules of English grammar.		1		1			2					1
CO4. To cultivate relevant technical style of communication and presentation at their work place and also for academic uses.							1	1				2
CO5. To enable students to apply it for practical and oral presentation purposes by being honed up in presentation skills and voice-dynamics.	1	2					1					2
Subject Name:- Mechanical Workshop Lab; Subject Code:- KWS251P												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Use various engineering materials, tools, machines and measuring equipments.	2			2	2							2
CO2. Perform machine operations in lathe and CNC machine.	2			2	2	1			2	1		
CO3. Perform manufacturing operations on components in fitting and carpentry shop.	2		2	2	2	1			2	2		1
CO4. Perform operations in welding, moulding, casting and gas cutting.	2		2	2	2	2						1
CO5. Fabricate a job by 3D printing manufacturing technique.	2	2	2	2		2			1	2	1	2
Subject Name:- Emerging Technology for Engineering ; Subject Code:- KMC202												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Understand the concepts of internet of things, smart cities and industrial internet of things.	2	2				2				2	2	1

CO2. Understand the concepts of cloud computing.	2	2	2	2								
CO3. Understand the concepts of block chain, cryptocurrencies, smart contracts.												
CO4. Understand design principles, tools, trends in 3 D printing and drones.	2	2	2	2	2	2			2	2		1
CO5. Understand augmented reality (AR), virtual reality (VR), 5G technology, brain computer interface and human brain.	2	2	2	2	2				2	1	2	1
Subject Name:- Soft Skill II; Subject Code:- KNC201												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Students will be able to converse well with effective LSRW skills in English.	2	2		2	1						2	2
CO2. Students will evaluate the importance of conversation in their personal and professional domain and apply it for extending their professional frontiers.	2		1		2		1			2	1	
CO3. Students will learn to apply motivation skills for their individual and professional excellence.	2	2	2				2					1
CO4. Students will utilize their teamwork and their interpersonal communication skills to survive and excel at their work-place.			1		2					1		
CO5. Students will learn to evaluate creativity for their professional innovation and critical thinking for their competence.	2	2					2					1
B. Tech II Semester III												
Subject Name: -Data Structure; Subject Code: - KCS301												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1: Describe how arrays, linked lists, stacks, queues, trees, and graphs are represented in memory, used by the algorithms and their common applications.	2	2	2	2	2	2		1			2	2
CO2: Discuss the computational efficiency of the sorting and searching algorithms.	2	2	2	2	2	1						2
CO3: Implementation of Trees and Graphs and perform various operations on these	2	2	2	1	2	1						2

data structure.												
CO4: Understanding the concept of recursion, application of recursion and its implementation and removal of recursion	2	2	2	1	2	1						2

Subject Name:- Discrete Structures & Theory of Logic; Subject Code:- KCS303

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO1: Write an argument using logical notation and determine if the argument is or is not valid.	2	2	2	1	2	1			2			2
CO2: Understand the basic principles of sets and operations in sets	2	1	2	1	2	1			2			2
CO3: Demonstrate an understanding of relations and functions and be able to determine their properties.	2	2	2	1	2	1			2		1	2
CO4: Demonstrate different traversal methods for trees and graphs.	2	2	2	1	2	1			2			2
CO5: Model problems in Computer Science using graphs and trees.	2	2	2	1	2	1			2		2	

Subject Name:- Computer Organization and Architecture; Subject Code:- KCS302

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO 1: Understand the principles of semiconductor Physics	2	1	2		2	1						1
CO 2: Analysis of the design of arithmetic & logic unit and understanding of the fixed point and floating-point arithmetic operations.	2	2	2	1	2	1			2			2
CO 3: Implementation of control unit techniques and the concept of Pipelining.	2	1	2	1	1	2			2		2	2
CO 4: Understanding the hierarchical memory system, cache memories and virtual memory.	2	1	2	1	1	2			2		2	2
CO 5: Understanding the different ways of communicating with I/O devices and standard I/O interfaces	2	1	2	1	1	2			2		2	2

Subject Name:- Discrete Structures & Theory of Logic lab; Subject Code:- KCS353

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO1: Apply mathematical logic to solve problems.	2	2	2	1	2	1			2		1	2

CO2: Understand sets, relations, functions, and discrete structures.	2	1	2	1	2	1			2			2
CO3: Use logical notation to define and reason about fundamental mathematical concepts such as sets, relations, and functions.	2	2	2	1	2	1			2		1	2
CO4: Formulate problems and solve recurrence relations.	2	2	2	1	2	1			2			2
CO5: Model and solve real-world problems using graphs and trees.	2	2	2	1	2	1	1	1	2		2	

Subject Name:- Computer Organization Lab; Subject Code:- KCS352

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO 1: Implementing HALF ADDER, FULL ADDER using basic logic gates	2	1	2	2	2						1	2
CO 2: Implementing Binary -to -Gray, Gray -to -Binary code conversions. Implementing 3-8 line DECODER. Implementing 4x1 and 8x1 MULTIPLEXERS.	2	2	2	1	2	1			2			2
CO3: Verify the excitation tables of various FLIP-FLOPS. Design of an 8-bit Input/ Output system with four 8-bit Internal Registers.	2	2	2	2								2
CO 4: Design the data path of a computer from its register transfer language description.	2	2	2	2	2	1			1		2	2
CO 5: Design the control unit of a computer using either hardwiring or microprogramming based on its register transfer language description. Implement a simple instruction set computer with a control unit and a data path.	2	2	2	2	2		1		2		2	2

Subject Name:- Data Structure using C Lab; Subject Code:- KCS351

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO1: Sorting Algorithms-Non-Recursive and Recursive.	2	2	1	2	2						1	2
CO2: Searching Algorithm.	2	2	1	2	2						1	2
CO3: Implementation of Circular Queue using Linked List.	2	2	2	2	2						1	2
CO4: Implementation of Tree Structures, Binary Tree, Tree Traversal, Binary Search Tree, Insertion and Deletion in BST.	2	2	2	2	2						2	2
CO5: Graph Implementation, BFS, DFS, Minimum cost spanning tree, shortest path algorithm.	2	2	1	2	2						1	2

Subject Name:- Mini Project or Internship Assessment; Subject Code:- KCS354												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1: Understand and apply the knowledge of the industry in which the internship is done.	2	2	2		1				2		2	2
CO2: Remember and apply the knowledge and skills learned in the classroom in a work setting.	2	2	2		2			1	2	2	2	2
CO3: Understand and analyze the activities and functions of business professionals.	2	2	2		2	2		1	2	2	2	2
CO4: Understand and evaluate the areas for future knowledge and skill development.	2	2			2			1	2	2	2	2
CO5: Analyze and develop a greater understanding about career options while more clearly defining personal career goals	2	2	2		2			1	2	2	2	2
Subject Name:- Python Programming ; Subject Code:- KNC302												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. To read and write simple Python programs.	2	2	2	1	2				1		1	2
CO2. To develop Python programs with conditionals and loops.	2	2	2	1	2				1		1	2
CO3. To define Python functions and to use Python data structures – lists, tuples, dictionaries	2	2	2	2	2				1		1	2
CO4. To do input/output with files in Python.	2	2	2	2	2				1		1	2
CO5. To do searching ,sorting and merging in Python.	2	2	2	1	2				1		1	2
B. Tech II Semester IV												
Subject Name:- Operating System; Subject Code:- KCS401												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Understand the structure and functions of OS	2	2	2							1		2
CO2. Learn about Processes, Threads and Scheduling algorithms.	2	2	2	2	1	1						2
CO3. Understand the principles of concurrency and Deadlocks	2	2	2	2	2	1			1	2		2
CO4. Learn various memory management scheme	2	2	2	2	2	1			1	2		2

CO5. Study I/O management and File systems.	2	2	2	2	2	1			1	2		2
Subject Name:- Theory of Automata and Formal Languages; Subject Code:- KCS402												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO 1 Analyse and design finite automata, pushdown automata, Turing machines, formal languages, and grammars.	2	2	2	2	2				1	2	1	2
CO 2 Analyse and design, Turing machines, formal languages, and grammars.	2	2	2	2	2	1			1	2	2	2
CO 3 Demonstrate the understanding of key notions, such as algorithm, computability, decidability, and complexity through problem solving.	2	2	2	2	2				1	2	1	2
CO 4 Prove the basic results of the Theory of Computation.	2	2	2	2	2				1	2	2	2
CO 5 State and explain the relevance of the Church-Turing thesis.	2	2	2	2	2	1			1	2	2	2
Subject Name:- Microprocessor; Subject Code:- KCS403												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO 1 Apply a basic concept of digital fundamentals to Microprocessor based personal computer system.	2	2	2							1	1	2
CO 2 Analyze a detailed s/w & h/w structure of the Microprocessor.	2	2	2	2	2	1			1	2	1	2
CO 3 Illustrate how the different peripherals (8085/8086) are interfaced with Microprocessor.	2	2	2	2	2	1			1	2	2	2
CO 4 Analyze the properties of Microprocessors(8085/8086)	2	2	2	2	2				1	2	1	2
CO 5 Evaluate the data transfer information through serial & parallel ports	2	2	2	2	2	1			1	2	1	2
Subject Name:- Python Language Programming Lab; Subject Code:- KCS453												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1: To design basic python codes for arithmetic operations.	2	2	2	1	2				1	1	1	2

CO2: To use loops, conditional statements and switch cases.	2	2	2	2	2				1	1	1	2
CO3: To designs linear searching and binary searching algorithm.	2	2	2	1	2				1	1	2	2
CO4: To design functions for iterative problems.	2	2	2	2	2				1	2	2	2
CO5: To implement various sorting algorithm (merge, heap, quick)	2	2	2	2	2				1	1	1	2
Subject Name:- Operating System lab; Subject Code:- KCS451												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1: Exposure to different OS	2	2	2							1		2
CO2: Awareness of concepts of multiprogramming, multithreading and multitasking	2	2	2	2	2					2	1	2
CO3: Demonstration of memory management algorithms	2	2	2	2	2				1	2		2
CO4: Demonstration of file-handling concepts by implementing suitable algorithms.	2	2	2	2	2	2			1	2	2	2
CO5: Awareness of computational issues, resources in distributed environment.	2	2	2	2	2	1			1	2		2
Subject Name:- Microprocessor Lab; Subject Code:- KCS452												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1.To performs multiplication and division of two 8 bit numbers using 8085.	2	2	2						1	1	1	2
CO2. To find the largest and smallest number in an array of data using 8085 instruction set.	2	2	2	2	1				1	2	1	2
CO3. To write a program to arrange an array of data in ascending and descending order.	2	2	2	2	1				1	2	1	2
CO4. To convert given Hexadecimal number into its equivalent ASCII number and vice versa using 8085 instruction set.	2	2	2	2	1				1	2	2	2
CO5. To write a program to initiate 8251 and to check the transmission and reception of character.	2	2	2	2	1	1			1	2	1	2

Subject Name:- Computer System Security; Subject Code:- KNC401												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. To discover software bugs that pose cyber security threats and to explain how to fix the bugs to mitigate such threats.	2	2	2	1	2	2	1	2	1		1	2
CO2. To discover cyber attack scenarios to web browsers and web servers and to explain how to mitigate such threats.	2	2	2	1	2	2	1	2	1	2	1	2
CO3. To discover and explain mobile software bugs posing cyber security threats, explain and recreate exploits, and to explain mitigation techniques.	2	2	2	2	2	2	1	2	1	2	1	2
CO4. To articulate the urgent need for cyber security in critical computer systems, networks, and world wide web, and to explain various threat scenarios.	2	2	2	1	2	2	2	2	2	2	2	2
CO5. To articulate the well known cyber attack incidents, explain the attack scenarios, and explain mitigation techniques.	2	2	2	2	2	2	1	2	2	1	1	2
B. Tech III Semester V												
Subject Name:- Database Management System; Subject Code:- KCS501												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO 1: Apply knowledge of database for real life applications.	2	2	2	1	2				1		1	2
CO 2: Apply query processing techniques to automate the real time problems of databases.	2	2	2	2	2				1		1	2
CO 3: Identify and solve the redundancy problem in database tables using normalization.	2	2	2	2	2				1		1	2
CO 4: Understand the concepts of transactions, their processing so they will familiar with broad range of database management issues including data integrity, security and recovery.	2	2	2	2	2				1		2	2
CO 5: Design, develop and implement a small database project using database tools.	2	2	2	2	2				1		2	2
Subject Name:- Compiler Design ; Subject Code:- KCS502												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Acquire knowledge of different phases and passes of the compiler and also able to use the compiler tools like LEX, YACC, etc. Students will also be able to design different	2	2	2	1	2				1		1	2

types of compiler tools to meet the requirements of the realistic constraints of compilers.												
CO2. Understand the parser and its types i.e. Top-Down and Bottom-up parsers and construction of LL, SLR, CLR, and LALR parsing table	2	2	2	1	2				1		1	2
CO3. Implement the compiler using syntax-directed translation method and get knowledge about the synthesized and inherited attributes.	2	2	2	2	2				1		1	2
CO4. Acquire knowledge about run time data structure like symbol table organization and different techniques used in that.	2	1	1	1	2				1			2
CO5. Understand the target machine's run time environment, its instruction	2	2	2	2	2				1		1	2

Subject Name:- Design and Analysis of Algorithm; Subject Code:- KCS503

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO 1: Design new algorithms, prove them correct, and analyze their asymptotic and absolute runtime and memory demands.	2	2	2	2							1	2
CO 2: Find an algorithm to solve the problem (create) and prove that the algorithm solves the problem correctly (validate).	2	2	2	2	2						1	2
CO 3: Understand the mathematical criterion for deciding whether an algorithm is efficient, and know many practically important problems that do not admit any efficient algorithms.	2	2	2	2							1	2
CO 4: Apply classical sorting, searching, optimization and graph algorithms.	2	2	2	2							1	2
CO 5: Understand basic techniques for designing algorithms, including the techniques of recursion, divide-and-conquer, and greedy.	2	2	2	2	2						1	2

Subject Name:- Object Oriented System Design; Subject Code:- KCS054

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO1: Understand the application development and analyze the insights of object oriented programming to implement application	2	1	1	2	2					2	1	2
CO2: Understand, analyze and apply the role of overall modeling concepts (i.e. System, structural)	2	2	1	2	2					2	2	2
CO3: Understand, analyze and apply oops concepts (i.e. abstraction, inheritance)	2	2	1	1	1					1	2	2
CO4: Understand the basic concepts of C++ to implement the object oriented concepts	1	2	2	1	1					2	1	2

CO5: To understand the object oriented approach to implement real world problem	2	2	2	1	1					1	1	2

Subject Name:- Machine Learning; Subject Code:- KCS055												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO 1: To understand the need for machine learning for various problem solving.	2	2	2	2	2	2				2	1	2
CO 2: To understand a wide variety of learning algorithms and how to evaluate models generated from data.	2	2	2	1	2	2				2	1	2
CO 3: To understand the latest trends in machine learning.	2	2	2		2					2	2	2
CO 4: To design appropriate machine learning algorithms.	2	2	2	2	2					2	2	2

Subject Name:- Database Management Systems Lab; Subject Code:- KCS551												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO 1: Understand and apply oracle 11 g products for creating tables, views, indexes, sequences and other database objects.	2	2	2	2	2				1		1	2
CO 2: Design and implement a database schema for company data base, banking data base, library information system, payroll processing system, student information system.	2	2	2	2	2				1		1	2
CO 3: Write and execute simple and complex queries using DDL, DML, DCL and TCL	2	2	1	2	2				1			2
CO 4: Write and execute PL/SQL blocks, procedure functions, packages and triggers, cursors.	2	2	1	2	2				1			2
CO 5: Enforce entity integrity, referential integrity, key constraints, and domain constraints on database.	2	2	2	2	2				1		1	2

Subject Name:- Compiler Design lab; Subject Code:- KCS552												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO 1 Identify patterns, tokens & regular expressions for lexical analysis.	2	2	2	2	2	1			1		1	2
CO 2 Design Lexical analyzer for given language using C and LEX /YACC tools	2	2	2	2	2				1		2	2
CO 3 Design and analyze top down and bottom up parsers.	2	2	2	1	2				1		1	2
CO 4 Generate the intermediate code	2	2	2	2	1				1		2	2
CO 5 Generate machine code from the intermediate code forms	2	2	2	2	2				1		1	2

Subject Name:- Design and Analysis of Algorithm Lab; Subject Code:- KCS553												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO 1: Implement algorithm to solve problems by iterative approach.	2	2	2	1	1				1		1	2
CO 2: Implement algorithm to solve problems by divide and conquer approach	2	2	2	2	2				1		2	2
CO 3: Implement algorithm to solve problems by Greedy algorithm approach.	2	2	2	2	2				1		1	2
CO 4: Implement algorithm to solve problems by Dynamic programming, backtracking, branch and bound approach.	2	2	2	2	2				1		2	2
CO 5: Implement algorithm to solve problems by branch and bound approach.	2	2	2	2	2				1		1	2
Subject Name:-Mini Project or Internship Assessment; Subject Code:- KCS554												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Identify an engineering problem, devise a means of solving and exhibit the ability to execute the solution	2	2	2		1				2		2	2
CO2. Demonstrate knowledge of professional and ethical responsibilities.	2	2	2		2			1	2	2	2	2
CO3. Show the understanding of impact of engineering solutions on the society and also will be aware of contemporary issues.	2	2	2		2	2		1	2	2	2	2
CO4. Communicate effectively in both verbal and written form.	2	2			2			1	2	2	2	2
CO5. Develop confidence for self-education and ability for lifelong learning.	2	2	2		2			1	2	2	2	2
Subject Name:- Constitution of India, Law and Engineering; Subject Code:- KNC501												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Identify and explore the basic features and modalities about Indian constitution.	2					2		2	1	2		
CO2. Differentiate and relate the functioning of Indian parliamentary system at the center and state level.	2			2		1		2		2		1
CO3. Differentiate different aspects of Indian Legal System and its related bodies.	1					2		2	1	2		
CO4. Discover and apply different laws and regulations related to engineering practices.	2			2		2			1			1
CO5. Correlate role of engineers with different organizations and governance	1			1			1	1		2		

models.												
B. Tech III Semester VI												
Subject Name:- Software Engineering; Subject Code:- RCS601												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1: Explain various software characteristics and analyze different software Development Models	2	1	1	2	2							2
CO2: Demonstrate the contents of a SRS and apply basic software quality assurance practices to ensure that design, development meet or exceed applicable standards	2	2	2	2	2						2	2
CO3: Compare and contrast various methods for software design.	2	1	1	2	1						2	2
CO4: Formulate testing strategy for software systems, employ techniques such as unit testing, Test driven development and functional testing	2	2	2	2	2						2	2
CO5: Manage software development process independently as well as in teams and make use of Various software management tools for development, maintenance and analysis.	2	2	1	2	2						2	2
Subject Name:- Web Technology; Subject Code:- KCS602												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Apply the knowledge of the internet and related internet concepts that are vital in understanding web application development and analyze the insights of internet programming to implement complete application over the web.	2	2	2		2	2	1		2	2	2	2
CO2. Understand, analyze and apply the role of mark up languages like HTML, DHTML, and XML in the workings of the web and web applications.	2	2	2	2	2	2	1		2	2	2	2
CO3. Use web application development software tools i.e. XML, Apache Tomcat etc. and identifies the environments currently available on the market to design web sites.	2	2	2	2	2	2	1		2	2	2	2
CO4. Understand, analyze and build dynamic web pages using client side programming JavaScript and also develop the web application using servlet and JSP.	2	2	2	2	2	2			2	2	2	2
CO5. Understand the impact of web designing by database connectivity with JDBC in the current market place where everyone use to prefer electronic medium for shopping,	2	2	2	2	2	2	1		2	2	2	2

commerce, fund transfer and even social life also												

Subject Name:- Computer Networks;Subject Code:- KCS603

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO1 Explain basic concepts, OSI reference model, services and role of each layer of OSI model and TCP/IP, networks devices and transmission media, Analog and digital data transmission.	2	2										2
CO2 Apply channel allocation, framing, error and flow control techniques.	2	2	2	2	2							2
CO3 Describe the functions of Network Layer i.e. Logical addressing, sub-netting & Routing Mechanism.	2	2	2	2	2	1				2	2	2
CO4 Explain the different Transport Layer function i.e. Port addressing, Connection Management, Error control and Flow control mechanism.	2	2		2	2	2				2	1	2
CO5 Explain the functions offered by session and presentation layer and their Implementation.	2	2		1	2	2				2	1	1

Subject Name:- SOFTWARE PROJECT MANAGEMENT; Subject Code:- KOE068

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO 1 Identify project planning objectives, along with various cost/effort estimation models.	2	2	2	2	2	1		1	2	2	2	2
CO 2 Organize & schedule project activities to compute critical path for risk analysis.	2	2	2	2	2	1	1	1	2	2	2	2
CO 3 Monitor and control project activities.	2	2	2	2	2	1	1	1	2	2	2	2
CO 4 Formulate testing objectives and test plan to ensure good software quality under SEI-CMM.	2	2	2	2	2	2		2	2	2	2	2
CO 5 Configure changes and manage risks using project management tools	2	2	2	2	2	1		1	2	2	2	2

Subject Name:- Data Compression; Subject Code:- KCS064

Course Outcomes	PO_1	PO_2	PO_3	PO_4	PO_5	PO_6	PO_7	PO_8	PO_9	PO_{10}	PO_{11}	PO_{12}
CO 1 Describe the evolution and fundamental concepts of Data Compression and Coding Techniques.	2	1										
CO 2 Apply and compare different static coding techniques (Huffman & Arithmetic coding) for text compression.	2	2	2	2	1						1	2

CO 3 Apply and compare different dynamic coding techniques (Dictionary Technique) for text compression.	2	2	2	2	1						1	2
CO 4 Evaluate the performance of predictive coding technique for Image Compression.	2	2	2	2	2						1	2
CO 5 Apply and compare different Quantization Techniques for Image Compression	2	2	2	2	1						1	2

Subject Name:- Web Technology lab**;Subject Code:- KCS651**

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Understand fundamentals of web development and Java, including defining classes, invoking methods, using class libraries, Applet, AWT.	2	2	2	2	2				2	2	2	2
CO2. Understand, analyze and apply the role of scripts/languages like HTML, DHTML, CSS, XML, DOM, and SAX to solve real world problems.	2	2	2	2	2	1	1	1	2	2	2	2
CO3. Understand, analyze and design the role of JavaScript for dynamic web pages	2	2	2	2	2				2	2	2	2
CO4. Design and deploy different components using EJB, and database tables using JDBC and produce various results based on given query.	2	2	2	2	2				2	2	2	2
CO5. Design and deploy a server-side java application called Servlet & JSP	2	2	2	2	2	1			2		2	2

Subject Name:- Software Engineering lab**; Subject Code:- KCS652**

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1: Identify ambiguities, inconsistencies and incompleteness from a requirements specification and state functional and non-functional requirement	2	2	2	2	2							2
CO2: Identify different actors and use cases from a given problem statement and draw use case diagram to associate use cases with different types of relationship	2	2	2	2	2						2	2
CO3: Draw a class diagram after identifying classes and association among them	2	2	2	2	2					1	2	2
CO4: Graphically represent various UML diagrams , and associations among them and identify the logical sequence of activities undergoing in a system, and represent them pictorially	2	2	2	2	2						2	2
CO5: Able to use modern engineering tools for specification, design, implementation and testing	2	2	2	2	2						1	2

Subject Name:- Computer Networks Lab; **Subject Code:-** KCS-653												
Course Outcomes	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO_6**	**PO 7**	**PO 8**	**PO 9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO 1 Simulate different network topologies.	2	2	2	2	2	1				2	1	2
CO 2 Implement various framing methods of Data Link Layer.	2	2	2	1	2	1				2	1	2
CO 3 Implement various Error and flow control techniques.	2	2	2	2	2	1				2	1	2
CO 4 Implement network routing and addressing techniques.	2	2	2	2	2	1				2	1	2
CO 5 Implement transport and security mechanisms	2	2	2	2	2	2				2	1	2

B. Tech IV Semester VII

Subject Name:- Understanding the human being Comprehensively Human Aspiration audits fulfillment; Subject Code:- ROE074												
Course Outcomes	**PO 1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Help the students having the clarity about human aspirations, goal, activities and purpose of life.	1	2			2	1				2	1	2
CO2. Facilitate the competence to understand the harmony in nature/existence and participation of human being in the nature/existence.		2			2	1				2	1	2
CO3. Help the students to develop the understanding of human tradition and its various components.	1	2			2	1				2	1	2

Subject Name:- Application of Soft computing**; Subject Code:-** RCS071												
Course Outcomes	**PO 1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Comprehend the fuzzy logic and the concept of fuzziness involved in various systems and fuzzy set theory.	2	2	2	2						2		1
CO2. Understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic	2	2	2	2		2			1	2		
CO3. To understand the fundamental theory and concepts of neural networks, Identify different neural network architectures, algorithms, applications and their limitations	2	2	2	2								2
CO4. Understand appropriate learning rules for each of the architectures and learn several neural network paradigms and its applications	2	2		2		2						1

CO5. Reveal different applications of these models to solve engineering and other problems.	2	2	2	2								
Subject Name:- Cloud Computing**;** **Subject Code:-** RCS075												
Course Outcomes	**PO 1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Define Cloud Computing and memorize the different Cloud service and deployment models	2	2		2					2		2	2
CO2. Describe importance of virtualization along with their technologies.	2	2	2	2	2				2		2	2
CO3. Use and Examine different cloud computing services	2	2	2	2	2				2		2	2
CO4. Analyze the components of open stack & Google Cloud platform and understand Mobile Cloud Computing	2	2	2	2					2		2	2
CO5. Describe the key components of Amazon web Service and Design & develop backup strategies for cloud data based on features.	2	2	2		2				2	1	2	2
Subject Name:- Distributed Systems **;Subject Code:-** RCS-701												
Course Outcomes	**PO 1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1: To get knowledge in distributed architecture, naming, synchronization, consistency and replication, fault tolerance, security, and distributed file systems.	2	2	2	2	2					2	1	2
CO2: To analyze the current popular distributed systems such as peer-to-peer (P2P) systems will also be analyzed.	2	2	2	2	2					2	1	2
CO3: To know about Shared Memory Techniques.	2	2	1	2	2					2	1	2
CO4: Have Sufficient knowledge about file access and knowledge of Synchronization and Deadlock.	2	2	1	2	2					2	1	2
CO5:Understand the importance of security in distributed systems	2	2	2	2	2					2	1	2
Subject Name:- ARTIFICIAL INTELLIGENCE **; Subject Code:-** RCS702												
Course Outcomes	**PO 1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**

CO1: To develop an understanding Algorithm	2	1	1		2	2						2
CO2: Gaining knowledge 2SAT algorithm	2	2	2			2			2			2
CO3: Understand the Expert system formulation and operation	2	2	2	2								2
CO4: Ability to understand Neural net construction	2	2	2		2					2		2
CO5: Ability to introduce Resolution algorithm and Ability to understand Learning DNF formulas	2	2	2	2	2					2		2

Subject Name:- Distributed Systems LAB**; Subject Code:-** RCS-751

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Develop, test and debug RPC/RMI based client-server programs.	2	2	2	2	2					2	1	2
CO2. Implement the main underlying components of distributed systems (such as IPC, name resolution, file systems etc.)	2	2	2	2	2					2	2	2
CO3. Implement various techniques of synchronization.	2	2	2	2	2					1	1	2
CO4 Design and implement application programs on distributed systems.	2	2	2	2	2					2	1	2
CO5. Design and implement distributed applications of Distributed Systems.	2	2	2	2	2					2	1	2

Subject Name:- ARTIFICIAL INTELLIGENCE LAB**; Subject Code:-** RCS752

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1: Understand and remember the basic concepts of prolog programming	2	2	2	2	2							2
CO2: Implement the recursion and sequences using prolog programming	2	2	2	2	2						2	2
C03: Implement the various applications of Artificial Intelligence using prolog	2	2	2	2	2					1	2	2

Subject Name PROJECT LAB**; Subject Code:-** RCS754

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1: Able to develop a design solution, test and validate the conformance of the developed prototype against the original requirements of the problem.	2	2	2		1				2		2	2
CO2: Work as a responsible member and possibly a leader of a team in developing	2	2	2		2				2	2	2	2

software solutions.												
CO3: Self learn new tools, algorithms, and/or techniques that contribute to the software solution of the project.	2	2	2	2	2				2	2	2	2
Subject Name:- INDUSTRIAL TRAINING**; Subject Code:-** RCS753												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1: Enhance students' knowledge in one particular technology and work Experience under the guidance of in practice professionals	2	2	1	1	2				2		2	2
CO2: Provide comprehensive learning platform to students where they can enhance their employ ability skills and become job ready along with real corporate exposure.	2	2	1		2				2	2	2	2
C03: Cultivate student's leadership ability and responsibility to perform or execute the given task and to Increase self-confidence of students and helps	2	2	1	1	2				2	2	2	2
B. Tech IV Semester VIII												
Subject Name:- VALUES, RELATIONSHIP & ETHICAL HUMAN CONDUCT–FOR A HAPPY & HARMONIOUS SOCIETY; Subject Code:- ROE088												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1: To help the students to understand the importance and types of relationship with expressions.								2	2			2
CO2. To develop the competence to think about the conceptual framework of undivided society as well as universal human order.		2						2	2			2
CO3. To help the students to develop the exposure for transition from current state to the undivided society and universal human order		2						2	2			2
Subject Name:- MACHINE LEARNING; Subject Code:- RCS080												
Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Well defined learning problems, Designing a Learning System.	2	2	1	1	2	2				2	1	2
CO2. Decision tree learning algorithm- Inductive bias- Issues in Decision tree learning.	2	2	1	1	2	2				2	1	2
CO3. Estimating Hypotheses Accuracy, Basics of sampling Theory, Comparing Learning Algorithms	2	2	2	2	2	2				2	2	2

CO4. Sample Complexity for Finite Hypothesis spaces, Sample Complexity for Infinite Hypothesis spaces, The Mistake Bound Model of Learning.	2	2	2	2	2					2	2	2
CO 5. Learning first order rules-sequential covering algorithms General to specific beam search-FOIL	2	2	1	2	2	2				2	2	2

Subject Name:-DATA COMPRESSION; Subject Code:- RCS-087

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Learning about Compression Techniques.	2	1										
CO2. Learning about the Huffman coding algorithm.	2	2	2	2	1						1	2
CO3. Learning about Dictionary Techniques.	2	2	2	2	1						1	2
CO4. Learning about Distortion criteria, Models, Scalar Quantization.	2	2	2	2	2						1	2
CO5. Learning about Advantages of Vector Quantization over Scalar Quantization, The Linde-Buzo-Gray Algorithm, Tree structured Vector	2	2	2	2	1						1	2

Subject Name:- PROJECT; Subject Code:- RCS-852

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. Able to develop a design solution, test and validate the conformance of the developed prototype against the original requirements of the problem.	2	2	2		1				2		2	2
CO2. Work as a responsible member and possibly a leader of a team in developing software solutions	2	2	2		2				2	2	2	2
CO3. Self learn new tools, algorithms, and/or techniques that contribute to the software solution of the project	2	2	2	2	2				2	2	2	2

Subject Name:- Seminar ;**Subject Code:- RCS-851**
;

Course Outcomes	**PO_1**	**PO_2**	**PO_3**	**PO_4**	**PO_5**	**PO_6**	**PO_7**	**PO_8**	**PO_9**	**PO_{10}**	**PO_{11}**	**PO_{12}**
CO1. CO1: Understand the past and present of the disciplines by exploring their purpose, practice, and philosophy.	2	2			1				2			2
CO2. Gain an understanding of advanced research methodologies in the field, including theory, interdisciplinary approaches.	2	2		1	1				2	2		2

CO3. Demonstrate through short written assignments and critical reviews the ability to synthesize and assess the arguments of scholarly articles and monographs at the level of professionals in the field.	2	2			1				2	2		2
CO4. Understand the privileges and obligations associated with a career as a professional	2	2			1				2	2		2
CO5. Understand historical and recent trends in theory and method and be able to identify and explain major trends and issues in industry and research. Learn to write a scholarly book review.	2	2	2		1				2	2		2

PROGRAM OUTCOMES (POs)

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.