



KIET GROUP OF INSTITUTIONS, GHAZIABAD

Department of Computer Science

Course Outcomes

Session 2020-21



Department of Computer Science

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KIET GROUP OF INSTITUTIONS, GHAZIABAD

Department of Computer Science

Index

3 rd Semester		
S No.	Subject Code	Subject Name
1	KAS 302	MATH - IV
2	KVE 301	UNIVERSAL HUMAN VALUES
3	KCS 301	DATA STRUCTURES
4	KCS 302	COMPUTER ORGANISATION AND ARCHITECTURE
5	KCS 303	DISCRETE STRUCTURES & THEORY OF LOGIC
6	KCS 351	DSUC
7	KCS 352	COA LAB
8	KCS 353	DSTL LAB
9	KCS 354	MINI PROJECT

4 th Semester		
S No.	Subject Code	Subject Name
1	KOE048	ELECTRONICS ENGINEERING
2	KAS 401	TECHNICAL COMMUNICATION
3	KCS 401	OPERATING SYSTEMS
4	KCS 402	THEORY OF AUTOMATA & FORMAL LANGUAGES
5	KCS 403	MICROPROCESSOR
6	KCS 451	OPERATING SYSTEM LAB
7	KCS452	MICROPROCESSOR LAB
8	KCS 453	PYTHON PROGRAMMING LAB

5th Semester

S No.	Subject Code	Subject Name
1	KCS 501	DATABASE MANAGEMENT SYSTEMS
2	KCS 502	COMPILER DESIGN
3	KCS 503	DESIGN AND ANALYSIS OF ALGORITHM
4	KCS 052	WEB DESIGNING
5	KCS 055	MACHINE LEARNING TECHNIQUE
6	KCS 551	DBMS LAB
7	KCS 552	CD LAB
8	KCS 553	DAA LAB
9	KCS 554	MINI PROJECT

6th Semester

S No.	Subject Code	Subject Name
1	KCS 601	SOFTWARE ENGINEERING
2	KCS 602	WEB TECHNOLOGY
3	KCS 603	COMPUTER NETWORKS
4	KCS 064	DATA COMPRESSION
5	KOE 068	SOFTWARE PROJECT MANAGEMENT
6	KCS 651	SE LAB
7	KCS 652	WT LAB
8	KCS 653	CN LAB



CO PO and Mapping of CO PO 2nd Year

Session:- 2020-21 Semester:- 3rd

Theory

Course Outcome (Maths – IV, KAS 302)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Identify the application of partial differential equations and apply for solving Linear and nonlinear partial differential equation.	3	C, P
CO 2	Understand the classification of second order partial differential equations and by using the method of separation of variables to evaluate the general solution of Heat, Wave, Laplace equations and Transmission lines.	3	C, P
CO 3	Remember the concept of moments, skewness, kurtosis and moment generating function and analyze the linear and nonlinear regression.	4	C, P
CO 4	To remember the concept of probability, random variable and apply for solving the problem related to discrete and continuous probability distributions	3	C, P
CO 5	Understand the statistical method of data samples, hypothesis testing and applying the study of control chart and their properties.	3	C, P

CO-PO Mapping (Maths – IV, KAS 302)

CO-No.	Programme-Outcome-(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	3	2	3	2	3	2	-	-	-	-	-	-	-
CO-2	3	3	3	3	2	3	1	-	-	-	1	3	-	-
CO-3	3	3	3	2	3	3	1	-	-	-	1	3	-	-
CO-4	3	3	3	2	3	3	2	-	-	-	2	3	-	-
CO-5	3	3	3	3	3	3	1	-	-	-	1	3	-	-
PO-Target	3	3	2.8	2.6	2.6	3	1.4	-	-	-	1.25	3	-	-

Course Outcome (Universal Human Values ,KVE 301)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Understand the process of self-exploration and meaning of natural acceptance.	2	C, P
CO 2	Explore the concept of harmony in the human being (in Myself) being 'I' & 'body' as separate entity	4	C, P
CO 3	Analyze the process of developing harmony in family and society.	4	C, P
CO 4	Analyze the process of developing the harmony in nature and existence	4	C, P
CO 5	Apply the role of holistic understanding of harmony of professional ethics.	3	C, P

CO-PO Mapping (Universal Human Values ,KVE 301)

CO-No.	Programme-Outcome(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	-	-	-	-	-	1	1	1	1	1	1	1	-	1
CO-2	-	-	-	-	-	3	2	3	2	1	1	2	-	-
CO-3	-	-	-	-	-	3	2	3	2	1	1	2	-	2
CO-4	-	-	-	-	-	3	2	3	2	1	1	2	-	-
CO-5	-	-	-	-	-	3	2	3	2	1	1	2	-	2
PO-Target	-	-	-	-	-	2.6	1.8	2.6	1.8	1	1	1.8	-	1.67

Course Outcome (Data Structure,KCS-301)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Implement the concepts of Array and Linked list after understanding the basics of programming, data structure and their memory representation	3	C, P
CO 2	Understand the primitive operations on various linear data structures like stack and queue along with their variants, and apply them on various applications like Expression Solving, Tower of Hanoi, String methods, etc	3	C, P
CO 3	Implementation of various searching and sorting algorithms using data structure concepts.	3	C, P
CO 4	Implementation of various data structures on different applications and analyse the working in terms of time and space complexity using asymptotic notations	3	C, P
CO 5	Implementation of Non-linear data structures like Trees and Graphs; and perform various operations on these data structures.	3	C, P

CO-PO Mapping (Data Structure,KCS-301)

CO-No.	Programme-Outcome(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	C	3	2	-	-	-	-	-	-	-	-	2	3	2
CO-2	3	3	2	-	-	-	-	-	-	-	-	2	3	2
CO-3	3	3	1	-	-	-	-	-	-	-	-	2	3	2
CO-4	3	3	1	2	-	-	-	-	-	-	-	2	3	2
CO-5	3	3	1	-	-	-	-	-	-	-	-	2	3	2
PO-Target	3	3	1.4	2	-	-	-	-	-	-	-	2	3	2

Course Outcome

(Computer Organization and Architecture,KCS 302)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Relate the fundamental components of the basic computer system with its organization.	3	C, P
CO 2	Interpret the design of ALU, fixed-floating-point representations and various multiplication, division operations on binary numbers.	3	C, P
CO 3	Illustrate control unit design and concept of pipelining.	3	C, P
CO 4	Apply the concept of different types of memories.	3	C, P
CO 5	Relate the fundamental components of the basic computer system with its organization	3	C, P

CO-PO Mapping **(Computer Organization and Architecture,KCS 302)**

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	2	-	-	-	-	-	-	-	-	-	2	-	-
CO 2	3	2	-	-	-	-	-	-	-	-	-	2	-	-
CO 3	2	2	-	-	-	-	-	-	-	-	-	2	-	-
CO 4	3	2	-	-	-	-	-	-	-	-	-	2	-	-
CO 5	2	2	-	-	-	-	-	-	-	-	-	2	-	-
PO Target	2.6	2	-	-	-	-	-	-	-	-	-	2	-	-

Course Outcome **(Discrete Structures & Theory of Logic,KCS 303)**

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Illustrate basic mathematical objects such as sets, functions, relations and natural numbers and their properties	4	C, P
CO 2	Examine various structures and properties of modern algebra	3	C, P
CO 3	Substantial experience of formal and logical arguments	3	C, P
CO 4	Justify the mathematical Solve properties via the formal language of propositional and predicate logic.	4	C, P
CO 5	Use graphs and trees, as tools to visualize and simplify the problems	3	C, P

CO-PO Mapping

(Discrete Structures & Theory of Logic,KCS 303)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	1	-	-	2	-	-		-	-	-	-	1	-	1
CO 2	2					-	1	-	-	-		1	-	2
CO 3	3	2	1	2	2	-	1	-	-	-	1	2	-	3
CO 4	3	-	3	2		-		-	-	-	1	1	1	3
CO 5	2	3	-	2	2	-	1	-	-	-	2	2	2	2
PO Target	2.2	2.5	2	2	2		1	-	-	-	1.333	1.4	1.5	2.2

Practical

Course Outcome (DSUC Lab,KCS-351)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Understand the basics of programming and data structure like arrays, linked lists, with their memory representation	2	C, P
CO 2	Apply the concept to perform Stack, Queue, Tree and Graph array and Linked List Representation.	3	C, P
CO 3	Make a solution for the available problem and implement them using data structure concept.	3	C, P
CO 4	Analyse the working of multiple data structure and help to solve existing problem.	4	C, P

CO-PO Mapping (DSUC Lab,KCS-351)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	2	2	2	3	-	-	-	-	-	-	1	3	3
CO 2	3	3	2	2	3	-	-	-	-	-	-	2	2	2
CO 3	3	3	2	2	3	-	-	-	-	-	-	3	2	2
CO 4	3	3	3	2	3	-	-	-	-	-	-	3	3	3
PO Target	3	2.75	2.25	2	3	-	-	-	-	-	-	2.25	2.5	2.5

Course Outcome (CO Lab,KCS 352)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Build half adder and full adder using basic logic gates and solve code conversions: binary to gray and gray to binary	3	C, P
CO 2	Construct Multiplexers (4x1, 8x1) and Decoders (2x4, 3x8)	3	C, P
CO 3	Make use of excitation tables of various flip flops.	3	C, P
CO 4	Model 8-bit Arithmetic Logical unit	3	C, P
CO 5	Model 8-bit input output system with four-bit internal registers	3	C, P

CO-PO Mapping (CO Lab,KCS 352)

[illegible]

Course Outcome (DSTL Lab,KCS 353)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Implement various operations of set, Boolean algebra, recursion, and mathematical induction	3	C, P
CO 2	Implement the concept of minimum cost spanning tree and shortest path in graphs.	3	C, P
CO 3	Illustrate permutation, combination, and probability for various problems.	3	C, P

CO-PO Mapping (DSTL Lab,KCS 353)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	-	-	-	3	-	-	-	2	-	-	2	2	3
CO 2	3	-	-	-	3	-	-	-	2	-	-	2	2	3
CO 3	3	3	-	2	3	-	-	-	2	-	-	2	2	3
PO Target	3	3	-	2	3	-	-	-	2	-	-	2	2	3

Course Outcome (Mini project,KCS354)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Identify the problem to solve and meet its requirements.	3	C
CO 2	Design the solution of the problem identified by using modern tools.	6	M
CO 3	Develop a project using advanced technologies.	5	M
CO 4	Develop analytical thinking and professional skills to prepare for final year project.	5	M
CO 5	Demonstrate the developed project and its outcome to the evaluators.	3	C

CO-PO Mapping (Mini project,KCS354)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	3	3	3	3	2	-	-	2	2	2	3	2	2
CO 2	3	3	3	3	3	-	-	-	2	-	2	3	2	3
CO 3	3	3	3	3	2	1	-	-	3	-	2	3	3	2
CO 4	2	3	3	3	3	2	-	2	3	2	2	3	2	2
CO 5	2	-	-	-	3	-	-	2	2	3	2	3	2	2
PO Target	2.6	3	3	3	2.8	1.67	-	2	2.4	2.333	2	3	2.2	2.2



CO PO and Mapping of CO PO 2nd Year

Session:- 2020-21 Semester:- 4th

Theory

Course Outcome (Electronics Engineering ,KOE 048)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Understand the concept of PN junction and special purpose diodes.	2	C, P
CO 2	Study the application of conventional diode and semiconductor diode.	3	C, P
CO 3	Analyse the I-V characteristics of BJT and FET.	3	C, P
CO 4	Analyze the of Op-Amp, amplifiers, integrator, and differentiator	2	C, P
CO 5	Understand the concept of digital storage oscilloscope and compare of DSO with analog oscilloscope	3	C, P

CO-PO Mapping **(Energy Science & Engineering ,KOE 043)**

CO-No.	Programme-Outcome-(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	3	2	-	3	-	1	-	-	-	-	1	-	-
CO-2	3	3	2	-	3	-	1	-	-	-	-	1	-	-
CO-3	3	3	2	-	3	-	1	-	-	-	-	1	-	-
CO-4	3	3	2	-	3	-	1	-	-	-	-	1	-	-
CO-5	3	3	2	-	3	-	1	-	-	-	-	1	-	-
PO-Target	3	3	2	-	3	-	1	-	-	-	-	1	-	-

Course Outcome (Technical Communication,KAS 401)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Analyze the nature and objective of Technical Communication relevant for the work place as Engineers.	2,4	C
CO 2	Utilize the technical writing for the purposes of Technical Communication and its exposure in various dimensions	3	C
CO 3	Imbibe presentation strategies inputs by presentation skills to enhance confidence in facing diverse audience in required situations at workplace.	3	C
CO 4	Create a vast know-how of the application of the technical learning to promote their communication competence	6	C
CO 5	Evaluate student's efficacy as fluent & efficient communicators by learning the voicedynamics	5	C

CO-PO Mapping (Technical Communication,KAS 401)

CO-No.	Programme-Outcome-(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	-	-	-	-	-	1	-	-	2	3	1	2	-	-
CO-2	-	-	-	-	-	1	-	-	2	3	1	2	-	-
CO-3	-	-	-	-	-	1	-	1	2	3	1	2	-	-
CO-4	-	-	-	-	-	1	-	-	2	3	1	2	-	-
CO-5	-	-	-	-	-	1	-	-	2	3	1	2	-	-
PO-Target	-	-	-	-	-	1	-	1	2	3	1	2	-	-

Course Outcome (Operating System,KCS401)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Acquire knowledge of the operating system and its functionalities, components, and terminologies used in the subject.	4	C
CO 2	Analyze the role of process synchronization and the concept of concurrent processes in the operating system	3	C
CO 3	Evaluate the process scheduling scenarios based on the existing methods and techniques used in the operating system.	3	C
CO 4	Analyze the memory management mechanism used in the operating system and how the operating system optimizes memory usage.	4	C
CO 5	Analyze the working of input and output management; and how the operating system performs the disk management.	5	C

CO-PO Mapping (Operating System,KCS401)

CO-No.	Programme-Outcome-(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	3	3	3	3	-	-	-	-	2	3	3	3	3
CO-2	3	3	3	3	3	-	-	-	-	2	3	3	3	3
CO-3	3	3	3	3	3	-	-	-	-	2	3	3	3	3
CO-4	3	3	3	3	3	-	-	-	-	2	3	3	3	3
CO-5	3	3	3	3	3	-	-	-	-	2	3	3	3	3
PO-Target	3	3	3	3	3	-	-	-	-	2	3	3	3	3

Course Outcome **(Theory of Automata & Formal Language,KCS402)**

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Explore basic properties of formal languages and Construct Finite Automaton for various problems.	4	C
CO 2	Examine various regular languages and application of finite automata.	3	C
CO 3	Examine the context free grammar and Language with proof of correctness	4	C
CO 4	Construct various Push Down Automaton different problems.	3	C
CO 5	Construct various Turing Machine for different problems and introduction of Recursive Function Theory.	4	C

CO-PO Mapping **(Theory of Automata & Formal Language, KCS402)**

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	2	2	2	2	2	1	–	-				2	2
CO 2	2	2	3	1	2	2	1		1	1			2	2
CO 3	2	2	2	2	3	3	1						3	2
CO 4	2	2	3	1	3	3	1		1	1	3		2	2
CO 5	2	2	3	2	2	2	1		1	1			2	2
PO Target	2	2	2.6	1.6	2.4	2.4	1		1	1	3		2.2	2

Course Outcome (Microprocessor, KCS 403)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Understand how the knowledge of mathematics, computer science & engineering are applied to microprocessor based personal computer system	3	C, P
CO 2	Analyze software problems after studying instruction set of 8085 and programming techniques.	3	C, P
CO 3	Formulate and solve hardware and software problems after studying instruction set of 8086 and programming techniques.	3	C, P
CO 4	Automate real life problems after generating time delays and learning the advanced subroutine concepts in assembly language programming.	3	C, P
CO 5	Understand techniques, skills and hardware tools necessary for computer engineering practice after studying 8237 DMA, 8255 PPI, 8254 programmable interval timer and 8259A programmable interrupt controller.	4	C, P

CO-PO Mapping (Microprocessor,KCS 403)

CO-No.	Programme-Outcome-(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	2	2	-	2	-	2	-	-	-	2	2	2	-
CO-2	1	3	-	2	2	1	1	-	-	-	2	-	-	2
CO-3	2	1	2	3	1	-	2	-	2	-	2	2	-	2
CO-4	2	2	3	1	1	-	2	-	1	-	1	-	2	2
CO-5	1	1	-	-	3	-	-	1	-	-	-	2	2	-
PO-Target	1.8	1.8	2.33	2	1.8	1	1.75	1	1.5	-	1.75	2	2	2

Practical

Course Outcome (Operating System Lab,KCS 451)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Acquire knowledge of the operating system structure and system calls and process, threads	3	C, P
CO 2	Analyze the role of process and its scheduling types	3	C, P
CO 3	Evaluate the process memory requirement and its fragmentation.	3	C, P
CO 4	Analyze the safe state and deadlock mechanism	4	C, P
CO 5	Analyze the performance of the disk scheduling algorithms	4	C, P

CO-PO Mapping (Operating System Lab,KCS 451)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	3	3	3	3	--	--	--	--	2	3	3	3	3
CO 2	3	3	3	3	3	--	--	--	--	2	3	3	3	3
CO 3	3	3	3	3	3	--	--	--	--	2	3	3	3	3
CO 4	3	3	3	3	3	--	--	--	--	2	3	3	3	3
CO 5	3	3	3	3	3	--	--	--	--	2	3	3	3	3
PO Target	3	3	3	3	3	-	-	-	-	2	3	3	3	3

Course Outcome (MP Lab,KCS 452)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Model basic arithmetic operations assembly language programs on 8085 microprocessor.	2	C, P
CO 2	Build advanced arithmetic operations assembly language programs on 8085 microprocessor.	6	C, P
CO 3	Model basic arithmetic operations assembly language programs on 8086 microprocessor.	6	C, P
CO 4	Build advanced arithmetic operations assembly language programs on 8086 microprocessor.	6	C, P
CO 5	Design interfacing circuits with microprocessor.	5	C, P

CO-PO Mapping (MP Lab,KCS 452)

CO-No.	Programme-Outcome-(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	2	2	3	2	-	-	-	-	-	-	-	2	-
CO-2	3	2	2	2	2	-	-	-	-	-	-	-	2	-
CO-3	2	2	3	3	2	-	-	-	-	-	-	-	2	-
CO-4	3	2	3	2	2	-	-	-	-	-	2	-	2	-
CO-5	2	2	3	2	2	-	-	-	-	-	-	-	2	-
PO-Target	2.6	2	2.6	2.4	2	-	-	-	-	-	2	-	2	-

Course Outcome (Python Programming Lab,KCS453)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	To read and write simple Python programs	2	C, P
CO 2	To develop Python programs with conditionals and loops	4	C, P
CO 3	To define Python functions and to use Python data structures -- lists, tuples, dictionaries	3	C, P
CO 4	To do input/output with files in Python	3	C, P
CO 5	To do searching, sorting, and merging in Python	2	C, P

CO-PO Mapping (Python Programming Lab,KCS453)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	1	1	2	2	3	3	1	1	2	2	1	1	3	2
CO 2	3	2	1	2	2	2	2	1	3	2	2	2	1	3
CO 3	2	2	3	2	2	2	1	1	1	3	3	2	2	2
CO 4	2	1	2	2	2	3	3	2	2	3	3	3	3	2
CO 5	3	2	3	3	2	2	2	2	2	3	3	2	1	3
PO Target	2.2	1.6	2.2	2.2	2.2	2.4	1.8	1.4	2	2.6	2.4	2	2	2.4



CO PO and Mapping of CO PO 3rd Year

Session:- 2020-21 Semester:- 5th

Theory

Course Outcome (Database Management System,KCS 501)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Illustrate the knowledge of database concepts along with design of database for real world problem.	3	C, P
CO 2	Apply query processing techniques (relational algebra and relational calculus expressions) with knowledge of relational model and query languages	3	C, P
CO 3	Analyze the database redundancy problem using normalization techniques for good database design.	3	C, P
CO 4	Implement the database transactions processing concepts and study the broad range of database management issues in concurrent environment	3	C, P
CO 5	Apply the different concurrency control techniques on transactions and study of database recovery methods	3	C, P

CO-PO Mapping **(Database Management System,KCS 501)**

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	2	-	-	-	-	-	-	-	-	-	1	1	-
CO 2	3	3	-	-	1	-	-	-	-	-	-	1	1	-
CO 3	3	3	-	-	1	-	-	-	-	-	-	1	1	-
CO 4	3	3	-	-	-	-	-	-	-	-	-	1	1	-
CO 5	3	3	-	-	-	-	-	-	-	-	-	1	1	-
PO Target	2.80	2.80	-	-	1	-	-	-	-	-	-	1.00	1.00	-

Course Outcome (Compiler Design,KCS 502)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Acquire knowledge of different phases and passes of compiler along with LEX and YACC tool	2	C
CO 2	Illustrate various parsing techniques i.e. Top-Down and Bottom-up parsers using LL, SLR, CLR, and LALR parsing table	3	C, P
CO 3	Describe the Intermediate code representation using Syntax Tree, DAG as well as use this knowledge to generate the intermediate code in the form of 3-address code.	3	C, P
CO 4	Discuss data structures used for Symbol Table, Run time organization and error in phases of compiler.	2	C
CO 5	Apply code optimization and Generation techniques resulting in Target Code	3	C, P

CO-PO Mapping (Compiler Design,KCS 502)

CO-No.	Programme-Outcome-(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	2	1	1	-	-	-	-	-	-	-	1	-	-
CO-2	3	3	1	-	-	-	-	-	-	-	-	-	-	-
CO-3	3	3	1	-	-	-	-	-	-	-	-	2	-	-
CO-4	3	1	-	-	-	-	-	-	-	-	-	-	-	-
CO-5	3	3	2	-	-	-	-	-	-	-	-	1	-	-
PO-Target	3	2.4	1.25	1	-	-	-	-	-	-	-	1.33	-	-

Course Outcome **(Design and Analysis of Algorithm,KCS 503)**

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Understand different asymptotic performance analysis methods	3	C
CO 2	Analyze performance analysis methods for sorting and searching algorithms.	3	C, P
CO 3	Understand the concept of Advance Data Structures	3	C
CO 4	Apply different problem solving paradigms to solve computational problems	3	C, P
CO 5	Understand the concept of NP-Problem, Randomized and Approximations algorithm.	3	C

CO-PO Mapping **(Design and Analysis of Algorithm,KCS 503)**

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	-	-	-	-	-	-	-	-	-	-	2	3	-
CO 2	3	2	2	-	-	-	-	-	-	-	-	2	3	-
CO 3	3	2	2	-	-	-	-	-	-	-	-	2	1	-
CO 4	3	2	2	-	-	-	-	-	-	-	-	2	3	-
CO 5	3	2	2	-	-	-	-	-	-	-	-	2	1	-
PO Target	3	2	2	-	-	-	-	-	-	-	-	2	2.2	-

Course Outcome (Web Designing,KCS 052)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Understand the principles of web design and different types of websites.	2	C
CO 2	Apply the concepts of HTML & elements and in designing and development of web pages	3	C, P
CO 3	Implement the properties of Cascading Style Sheet (CSS) in designing web pages.	3	C, P
CO 4	Apply the concepts of JavaScript to validate the website and to make it interactive.	3	C, P
CO 5	Utilize the concept of Web Hosting and SEO for the quick response of websites.	3	C, P

CO-PO Mapping (Web Designing,KCS 052)

CO-No.	Programme-Outcome-(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	1	2	2	-	-	-	-	-	2	-	-	-	1	-
CO-2	2	2	3	-	-	-	-	-	-	-	-	-	2	-
CO-3	2	2	3	-	-	-	-	-	-	-	-	-	2	-
CO-4	2	2	3	-	-	-	-	-	-	-	-	-	3	-
CO-5	2	3	3	2	3	-	-	-	-	-	-	-	3	-
PO-Target	1.8	2.2	2.8	2	3	-	-	-	2	-	-	-	2.2	-

Course Outcome (Machine Learning Techniques ,KCS055)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Understand the need for machine learning for various problem solving.	2	C
CO 2	Analyze a wide variety of machine learning techniques and learn how these techniques are suitable for solving different real-world problems	3	C
CO 3	Understand the latest trends in machine learning.	2	C
CO 4	Apply various machine learning algorithms to real-world problems.	3	C, P
CO 5	Optimize the models learned and report on the expected accuracy.	3	C, P

CO-PO Mapping (Machine Learning Techniques ,KCS055)

CO-No.	Programme-Outcome-(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	-	1	-	-	-	2	-	-	-	1	1	1	2	-
CO-2	3	2	-	-	-	2	-	-	-	1	1	1	2	-
CO-3	-	1	-	-	-	2	-	-	-	1	1	1	2	-
CO-4	3	2	-	-	-	2	-	-	1	1	1	1	2	-
CO-5	2	2	-	-	-	2	-	-	-	1	1	1	2	-
PO-Target	2.6	1.6	-	-	-	2	-	-	1	1	1	1	2	-

Practical

Course Outcome (DBMS Lab,KCS 551)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Implement the concepts of table creation, views, indexes and other database objects using Oracle 10g express edition.	3	P
CO 2	Solve simple and complex queries using DDL, DML, DCL and TCL.	3	P
CO 3	Utilize entity integrity, referential integrity, key constraints and domain constraints on database.	3	P
CO 4	Implement the PL/SQL blocks, procedure functions, packages and triggers, cursors.	3	P
CO 5	Design a database schema for a real-world problem like Hospital management system.	3	P

CO-PO Mapping (DBMS Lab,KCS 551)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	3	-	1	3	-	-	-	-	-	2	2	-	-
CO 2	3	3	-	3	-	-	-	-	-	-	2	2	-	-
CO 3	3	3	-	3	-	-	-	-	-	-	2	2	-	-
CO 4	3	3	-	3	-	-	-	-	-	-	2	2	-	-
CO 5	3	3	2	3	-	-	-	-	-	-	3	3	2	3
PO Target	3	3	2	2.6	3	-	-	-	-	-	2.1	2.1	2	3

Course Outcome (Mini Project,KCS 554)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Identify a problem and gather its requirements.	3	C
CO 2	Design a solution of the problem using latest tools & techniques.	6	M
CO 3	Develop a project using latest technology.	5	M
CO 4	Develop professional skills and critical thinking to prepare for major project.	5	M
CO 5	Demonstrate an ability to present project works to the evaluators.	3	C

CO-PO Mapping (Mini Project,KCS 554)

CO-No.	Programme-Outcome-(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	3	3	3	3	2	-	-	2	2	2	3	2	2
CO-2	3	3	3	3	3	-	-	-	2	-	2	3	2	3
CO-3	3	3	3	3	3	1	-	-	3	-	2	2	3	2
CO-4	3	3	3	3	3	2	-	2	3	2	2	3	2	2
CO-5	2	-	-	-	3	-	-	2	2	3	2	3	2	2
PO-Target	2.8	3	3	3	3	1.6	-	2	2.4	2.33	2	2.8	2.2	-

Theory

Course Outcome (Software Engineering,KCS601)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	To learn about generic models of software development process	2	C
CO 2	To understand fundamental concepts of requirements engineering and analysis modeling	2	C
CO 3	To understand the different design techniques and their implementation	2,3	C
CO 4	To learn various testing measures	2	C
CO 5	To learn various maintenance and project management techniques	2	C

CO-PO Mapping (Software Engineering,KCS601)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	2	2	2	-	-	2	2	2	2	3	3	3	3
CO 2	3	2	2	2	-	-	2	2	2	2	3	3	3	3
CO 3	3	2	2	2	-	-	2	2	2	2	3	3	3	3
CO 4	3		2	2	-	-	2	2	2	2	3	3	3	3
CO 5	3	2	2	2	-	-	2	2	2	2	3	3	3	3
PO Target	3	2	2	2	-	-	2	2	2	2	3	3	3	3

Course Outcome (Web Technology ,KCS 602)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Explain web development Strategies and Protocols governing Web. Develop Java programs for window/web-based applications.	3	C, P
CO 2	Analyze and develop static interactive web pages using HTML, CSS and XML	3	C, P
CO 3	Design web pages using JavaScript, AJAX. Creation of client-server environment using socket programming	3	C, P
CO 4	Building enterprise level applications and manipulate web databases using JDBC	3	C, P
CO 5	Design interactive web applications using Servlets and JSP	4	C, P

CO-PO Mapping (Web Technology ,KCS 602)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	2	3	3	3	1	1	1	1	1	2	2	2	2
CO 2	2	1	2	2	3	1	1	1	2	1	1	2	2	1
CO 3	2	2	3	3	3	1	1	1	1	1	2	2	2	2
CO 4	3	3	3	3	3	3	1	1	1	1	1	3	3	3
CO 5	3	2	3	2	3	1	1	1	1	1	2	2	3	2
PO Target	2.4	2	2.8	2.6	3	1.4	1	1	1	1	1.6	2.2	2.4	2

Course Outcome (Computer Networks,KCS603)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	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	C
CO 2	Apply channel allocation, framing, error and flow control techniques.	2	C
CO 3	Describe the functions of Network Layer i.e. Logical addressing, subnetting & Routing Mechanism.	2	C
CO 4	Explain the different Transport Layer function i.e. Port addressing, Connection Management, Error control and Flow control mechanism	3	C
CO 5	Explain the different protocols used at application layer i.e. HTTP, SNMP, SMTP, FTP, TELNET and VPN.	3	C

CO-PO Mapping (Computer Networks,KCS603)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	3	2	3	3	2	-	-	2	2	-	2	2	2
CO 2	2	3	2	-	3	2	-	-	2	2	-	2	2	2
CO 3	2	2	-	3	2	2	-		3	2	-	2	3	2
CO 4	3	-	2	3	2	2	-	-	2	3	-	2	2	2
CO 5	2	2	3	3	2	2	-	-	2	3	-	2	2	2
PO Target	2.2	2.5	2.25	3	2.4	2	-	-	2.2	2.4	--	2	2.2	2

Course Outcome (Data Compression, KCS 064)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Describe the evolution and fundamental concepts of Data Compression and Coding Techniques.	2	C,P
CO 2	Apply and compare different static coding techniques (Huffman & Arithmetic coding) for text compression.	3	C,P
CO 3	Apply and compare different dynamic coding techniques (Dictionary Technique) for text compression.	3	C,P
CO 4	Apply and compare the performance of predictive coding technique for Image Compression.	3	C,P
CO 5	Apply and compare different Quantization Techniques for Image Compression	3	C,P

CO-PO Mapping (Data Compression, KCS 064)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	2	1	2	2	1	1	1	1	1	1	2	2	1
CO 2	3	3	2	2	2	2	1	1	1	1	1	1	1	2
CO 3	3	3	2	2	2	2	1	1	1	1	1	2	2	2
CO 4	3	2	1	2	2	1	1	2	1	1	1	2	2	2
CO 5	3	2	1	2	2	1	1	2	1	1	1	2	2	2
PO Target	2.8	2.4	1.4	2	2	1.4	1	1.4	1	1	1	1.8	1.8	1.8

Course Outcome **(Software Project Management, KOE068)**

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Identify project planning objectives, along with various cost/effort estimation models	3	C
CO 2	Organize & schedule project activities to compute critical path for risk analysis.	3	C
CO 3	Monitor and control project activities.	5	C
CO 4	Formulate testing objectives and test plan to ensure good software quality under SEICMM.	6	C
CO 5	Configure changes and manage risks using project management tools	4	C

CO-PO Mapping **(Software Project Management, KOE068)**

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	1	3	2	2	2	2	3	3	2	1	3	2	1
CO 2	2	3	1	3	3	2	1	3	2	2	1	3	1	2
CO 3	2	2	3	2	3	2	1	3	1	3	1	3	2	3
CO 4	3	2	3	3	2	3	1	3	3	2	1	3	1	2
CO 5	3	2	2	3	3	1	2	3	3	2	1	3	3	1
PO Target	2.6	2	2.4	2.6	2.6	2	1.4	3	2.4	2.2	1	3	1.8	1.8

Practical

Course Outcome (Software Engineering LAB,KCS 651)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Identify ambiguities, inconsistencies and incompleteness from a requirements specification and state functional and non-functional requirement	3	C
CO 2	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	3	C
CO 3	Draw a class diagram after identifying classes and association among them	3	C
CO 4	Graphically represent various UML diagrams, and associations among them and identify the logical sequence of activities undergoing in a system, and represent them pictorially	3	C
CO 5	Able to use modern engineering tools for specification, design, implementation and testing	3	C

CO-PO Mapping (Software Engineering Lab,KCS 651)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	3	3	2	3	2	2	--	1	-	1	3	1	1
CO 2	3	3	3	3	3	2	2	-	1	-	1	3	1	1
CO 3	3	3	3	3	3	2	2	-	1	-	1	2	1	1
CO 4	3	3	3	3	3	2	2	-	1	-	1	1	2	2
CO 5	3	3	3	3	3	2	2	-	1	-	1	2	3	3
PO Target	3	3	3	2.8	3	2	2	--	1	-	1	2.2	1.6	1.6

Course Outcome (Web Technology Lab,KCS 652)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Develop static web pages using HTML, CSS	3	C
CO 2	Develop Java programs for window/web-based applications	3	C
CO 3	Design dynamic web pages using Javascript and XML	3	C
CO 4	Design dynamic web page using server site programming Ex. SERVLET and JSP	3	C
CO 5	Design server site applications using JDDC, ODBC and session tracking API	3	C

CO-PO Mapping (Web Technology Lab,KCS 652)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	2	2	3	2	1	-	-	1	1	2	2	3	1
CO 2	2	2	3	3	2	1	-	-	2	1	2	3	2	2
CO 3	3	2	3	3	2	1	-	-	1	2	2	2	2	1
CO 4	3	2	2	2	3	2	-	-	1	1	1	3	1	1
CO 5	3	2	2	3	3	1	-	-	1	2	2	2	1	2
PO Target	2.8	2	2.4	2.8	2.4	1.2	-	-	1.2	1.4	1.8	2.4	1.8	1.4

Course Outcome (Compter Networks Lab, KCS 653)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Simulate different network topologies.	3	C
CO 2	Implement various framing methods of Data Link Layer.	3	C
CO 3	Implement various Error and flow control techniques.	3	C
CO 4	Implement network routing and addressing techniques.	3	C
CO 5	Implement transport and security mechanisms	3	C

CO-PO Mapping (Computer Networks Lab,KCS 653)

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	3	2	2	3	2	-	-	2	2	-	2	2	3
CO 2	2	2	2	-	2	2	-	-	3	2	-	3	3	3
CO 3	2	2	-	3	2	2	-		3	2		3	2	2
CO 4	3	-	3	3	2	2	-	-	2	3	-	2	2	2
CO 5	2	3	3	3	2	2	-	-	2	3	-	2	2	3
PO Target	2.4	2.5	2.5	2.7	2.2	2	-	-	2.2	1.4	-	2.4	2.2	2.6