



KIET GROUP OF INSTITUTIONS, GHAZIABAD

Department of Computer Science

Course Outcomes

Session 2019-20



Department of Computer Science

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KIET GROUP OF INSTITUTIONS, GHAZIABAD

Department of Computer Science

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3 rd Semester		
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4	KCS 302	COMPUTER ORGANISATION AND ARCHITECTURE
5	KCS 303	DISCRETE STRUCTURES & THEORY OF LOGIC
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7	KCS 352	COA LAB
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1	KOE048	ELECTRONICS ENGINEERING
2	KVE 401	UNIVERSAL HUMAN VALUES
3	KCS 401	OPERATING SYSTEMS
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KIET GROUP OF INSTITUTIONS, GHAZIABAD
Department of Computer Science

CO PO and Mapping of CO PO 2nd Year

Session:- 2019-20 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 (Technical Communication,KAS 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	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 301)

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 (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

Session:- 2019-20 Semester:- 3rd

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	-

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)

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

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



KIET GROUP OF INSTITUTIONS, GHAZIABAD
Department of Computer Science

CO PO and Mapping of CO PO 2nd Year

Session:- 2019-20 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 (Universal Human Values ,KVE 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	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 401)

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 (OperatingSystem,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 (OperatingSystem,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